The PHILOSOPHY CLUB

AN ADVENTURE IN THINKING

Roger Sutcliffe and Steve Williams

DIALOGUE
W O R K S

DIALOGUE
W O R K S

. . . .

TRAINING
DialogueWorks can also give training to club leaders at tailor-made courses and events. For details email: philosophy.clubs@dialogueworks.co.uk

. . . .

Contents

Philosophy building book

Knowledgeworks

Logicworks

Newswise

About the **philosophy club**

About the philosophy club

Introduction

Philosophy is an ancient subject but with a modern significance. We live in a pluralist society with tremendous differences of culture and opinion. Philosophy can help children and young people find their own path to meaning via dialogue with others.

Children and young people can have a great thirst for ideas and discussion but they aren't allowed much space in school-time for questioning and thinking with others. Philosophy clubs can provide the answer.

Philosophy clubs have been popular wherever they have been tried – at home, at school or in summer-schools. They can help learners improve their performance in school subjects – such is the power of thoughtful and rigorous dialogue. Some schools even have a philosophy club as part of the school day.

This pack has been written for people who would like to organise a philosophy club. It provides materials and guidance to make the club successful and inviting.

What does the pack contain?

The *Philosophy club* is divided into sections. There are two kinds of sections – one (*The Starter Pack*) describes the process of philosophical enquiry and offers guidance to the organiser; the other (*Issue One*) provides philosophical resources consisting of stimuli and follow-up material to be used in philosophy club sessions. The breakdown of the sections is as follows:

Starter pack
- ***Introducing philosophy*** is a section to help you introduce philosophy to young people, parents and governors. It includes ideas and lines of argument to help you advertise and promote the club.

- ***Philosophical enquiry*** is a comprehensive introduction to leading and developing philosophical discussions based on the *Philosophy club* materials.

- ***Philosophy building book*** is a collection of ideas, activities and record sheets to help clubs build on their philosophical enquiries.

Issue one
- ***Mindworks*** investigates what it means to think and raises such questions as 'can computers be "intelligent"?' and 'what is the connection between thinking and feeling?'

- ***Knowledgeworks*** explores scientific method and thinking about causes through an imaginary dialogue with Louis Pasteur. Ethical questions about science in society are opened up for discussion.

- ***Logicworks: A short course in logic*** is an introduction to some basic thinking tools. It is split into short blocks consisting of a demonstration followed by practice. This section will enable club organisers and members to share a common language for analysing statements and arguments. The course can be done in one go but may be better presented in short bursts as an alternative to normal enquiry.

- ***Newswise*** provides a news story where personal and political themes overlap. It explores themes of personality, drugs, and state health policy.

Further issues of the *Philosophy club* can be purchased separately and added to this folder as they become available.

How to use the pack

We recommend you read the guidance sections first, especially *Philosophical enquiry*. You will then be prepared to use the stimulus materials to develop philosophical questioning and dialogue.

Each section of philosophical resources contains a stimulus for enquiry – a story, a factual report, a dialogue, a work of art or role-play. If you are experienced at leading philosophical discussions you may not need to use the follow-up materials, though we suggest you read them. They were written with two aims in mind:

1. To raise potential themes, concepts and questions arising from the stimulus materials. These will help you prepare for the enquiry.

2. To provide you with resources to use with members in philosophy club sessions. They may be adapted into short activities to add variety to enquiries or to give them a new focus.

The follow-up materials are organised into sections as follows:

- ***Hidden gold*** is a series of sample questions or tasks, presented as a 'menu' from which members or organisers may choose the items they fancy. These are not intended to take the place of members' own questions arising from the stimulus, but they may help to deepen understanding of themes or concepts that crop up during the course of an enquiry.

  The themes are often paired to provide interesting contrasts or comparisons. Some of the sample questions, like those in *Question chains* (see below) raise philosophical issues related to the themes, but their main aim is to explore the meanings of the concepts by paying close attention to actual usage. Through considering different interpretations in different contexts, members can widen as well as strengthen their conceptual framework.

- **Question chains** are groups of questions that lie behind, or are developments of, the principal philosophical question at the start of the chain. They all link back, therefore, to the original question in some way. They also often link sequentially with each other, thus justifying the description 'chain'.

- **Activities** are similar to the tasks found in *Hidden gold*, but are generally a little more ambitious or demanding. They may well focus more on a particular issue or theme and involve a greater degree of collaboration in researching and thinking about it.

- **Games** may be conceived as activities that place a little more emphasis on the fun to be had in thinking, as well as the enlightenment. They usually involve an element of competition, with oneself if not others.

- **Philosophy files** are collections of starting points for short discussions taken from the ideas of famous philosophers throughout history.

Introducing **philosophy**

Introducing philosophy

The nature of philosophy is unfamiliar to many adults and children. This section is meant to answer the questions, 'What is philosophy?' and 'Why do it?' There are 5 items.

Why do philosophy?

This piece gives the philosophy club organiser a set of reasons why the practice of philosophy can be both enjoyable and valuable for children. It can be presented in an appropriate form to headteachers, governors, interested parents and others to enlist their support for the club. It is often a good idea to send a letter to parents informing them about the club and even inviting them to attend some sessions. Extracts from *Why do philosophy?* can be selected and used in such a letter.

The child and the philosopher

A dialogue for children and adults about philosophy. It can be used to promote the club in an assembly. Children can be given parts to read and the script performed. It can also be used in an early club session. See the *Philosophical enquiry* section for ideas on how to follow up such a session.

Owls and wisdom

This is another way to introduce the philosophy club in an assembly or meeting.

The philosophy files

A collection of starting points for short discussions taken from the history of philosophy. It can prove useful in the early club sessions.

Poster

A poster to advertise the philosophy club. It can be enlarged using a photocopier. We have left a blank space after the phrase 'To find out more:' so that you can fill in details appropriate to your own situation. When photocopying, it is advisable to cover up the holes at the edge of the page with a blank sheet of paper.

Why do philosophy?

Excitement and enrichment

Children sometimes ask wonderful questions. Parents and teachers, alas, do not always have the time to cultivate the curiosity behind them. Nevertheless, there are precious moments at home and at school when children are given the chance to talk over their personal puzzlements – and they jump at the opportunity. Such puzzlements may not always have a philosophical dimension, but they often do.

A philosophy club gives young people and adults a space in which to explore that dimension together where they can celebrate the sheer excitement of sharing questions, ideas, experiences and values, and shape their own answers to some of the perennial questions of humankind.

A voluntary out-of-school club is not the only opportunity for such sharing and shaping, but for some young people it is the best forum because it provides a sequence of regular sessions with a suitable stimulus and structure. Young people of all abilities will be able to enrich their ways of thinking through careful dialogue with others.

Independence of thinking and the development of judgement

It is because philosophical questions have still not been answered to everyone's satisfaction that there is scope for individuals to exercise their own judgement. However, good judgement needs to be based on good thinking, and the *Philosophy club* pack is full of challenges to think more broadly and more deeply.

Development of thinking skills

The need for good thinking in school and later life is recognised by teachers and parents, as well as employers and concerned citizens. They all sense the increasing pressures of information and of diverse values on young people; and, even as their own *philosophies of life* strain to deal with this rapidly changing world, they may recognise the role philosophy can play in nurturing good, reliable thinking.

This is not a new role. Beginning with Socrates, or even earlier, philosophers have striven – and the best of them have managed – to think critically and creatively about many human problems and challenges. Philosophical enquiry develops skills such as:

- identifying problems (before they become crises)
- enquiring to clarify concepts (before they lead to bitter misunderstandings)
- enquiring for relevant facts (before evaluating opinions)
- reasoning (about consequences and justifications)
- evaluating and ordering (both ends and means)
- reconceptualising (to develop new solutions and ways of thinking)

These are all thinking skills – life skills – of the highest order, and ones that are deliberately practised in doing philosophy.

The practice of them, moreover, cultivates deeper dispositions that are as valuable as the skills themselves. These dispositions are often called *intellectual virtues* and include alertness, accuracy, curiosity, tenacity, judiciousness and flexibility. As an objective they may be summed up by a phrase in the new rationale for *Curriculum 2000*: 'to promote an enquiring mind and capacity to think rationally.'

Support of curriculum

The *Philosophy club* pack has been written to be used outside of timetabled lessons. However it could also be used within the normal school day. It could, in fact, play a valuable role in ensuring that the school curriculum has both breadth and depth. The contents of the units may be related directly to particular areas of the curriculum. For example:

Mindworks introduces students to many different ways of thinking about human, and possibly other, minds.

Knowledgeworks focuses on basic concepts of Science in the starter pack, and of other subjects such as History or Geography in later editions.

Newswise continues the pioneering work of its parent project, *Newswise: thinking through the news*, in the field of Citizenship and thinking skills.

Logicworks: A short course in logic provides a valuable resource in verbal reasoning and is relevant to all curriculum areas

Taken together, the *Philosophy club* materials and methods will help children improve their performance right across the curriculum.

The spiritual, moral, social and cultural dimensions of the curriculum

Education is not only about qualities of the intellect. In England and Wales, schools are rightly expected to provide opportunities for young people to develop their 'sense of identity through knowledge and understanding of their spiritual, moral, social and cultural heritages'. This is written into the new rationale for the curriculum – along with the aim of helping them to 'be responsible and caring citizens capable of contributing to the development of a just society'.

The question that we might ask now is how can we possibly set about the task of providing such opportunities and help without drawing on and furthering the role of philosophy in the process? Realistically, students can only ever be given snapshots of what makes up their heritage. These may be presented vividly enough through literature, art, history and current affairs but it is not until students enter into philosophical enquiry about the concepts – the ways of thinking involved – that they can get behind the snapshots and begin to understand them properly.

Nowhere is this more true than in the moral field, where responsibility, care and justice are but three of a multitude of concepts that need to be explored and examined with care. Philosophy has always taken this task seriously. Indeed, it is hard to see how anyone could take it seriously without doing some philosophy.

But won't philosophy teach children to doubt everything?

No. It is true that, as a result of philosophical enquiry, people may find reason to doubt what they began by believing. But they doubt because they have a positive reason to do so. It may be equally true that people are pleased to find that their beliefs are often supported by good, robust reasons that they were only able to explore through dialogue.

So philosophical enquiry is not, as some suggest or fear, a slide into soft and selfish subjectivism. On the contrary, it provides the best way of helping children make the transition from an egocentric ethic based on fear of others to a responsible ethic based on consideration of justice and care of others. It is a transition that could, and perhaps should, address the famous question of Socrates, 'Is something right because the gods command it, or do they command it because it's right?'

Language, literacy and dialogue

The *Philosophy club* activities encourage close reading of texts and careful use of language. Such activities can help children and young people to:

- improve their literacy and language skills
- improve their concentration and thinking skills
- improve their ability to raise and build on ideas
- develop greater self-confidence
- be more effective in collaboration and groupwork
- enhance their ability to negotiate with one another
- develop their articulacy and self-expression

The child and the philosopher

Child. I keep hearing this word philosophy – my grannie's philosophy and my school's philosophy … and now philosophy clubs. But no one's ever explained it to me. What IS philosophy?

> **Philosopher**. That's a good question.

When people say 'That's a good question,' it usually means they don't know the answer.

> I know lots of answers. But I don't think there is just one answer.

Why not put all the answers together? Then you'd have one answer.

> I'm not sure about that. Can lots of things be just one thing? Besides, how long have you got?

What do you mean?

> There's so much to say. Conversations about philosophy have been going on for hundreds, even thousands, of years – and they'll keep going on.

How come?

> Philosophy is one of those words like 'freedom' or 'fun' that mean different things to different people. There might never be a time when everyone agrees on what they include and what they don't.

But you're a philosopher. How do you know when you're doing philosophy and not something else like juggling. Tell me what YOU think it is.

> Okay, here goes … When I'm doing philosophy I'm trying to work out my own best answers to questions that human beings will always be wondering about.

What kind of questions?

> Questions that are really worth talking and thinking carefully about. Questions like, What can I expect from friends? or Is truth something you can feel or do you always have to prove it? How about some questions from you now.

What should grown ups teach to children? and Could my computer be my friend?

> Good questions! When is other people's business my business and when is my business other people's business? Can people force themselves to change?

Why do my parents think some music is beautiful but I like other stuff?

> Do scientists think differently from other people?

Is that worth finding out?

> It is if you're asking scientists to give advice about what is healthy for you or what is good for the world. Your turn.

Should I watch TV or go to the shops?

> I wouldn't call that a philosophical question.

But it's worth thinking about. I might enjoy one more than the other.

> Okay, so making that choice might be important to you for a while. But will it always be important for you? And how important is it to other people? These are also questions worth asking. You see, part of philosophy is deciding what really matters in life and in the world around us.

Thinking up these kinds of questions is good fun but what good are questions without answers?

> It's easy enough to find answers to most questions. You can just make them up as you go along. You might even be pleased with some of them.

What's wrong with that?

> There's nothing wrong with feeling pleased. But you don't just want any old answers do you? Quick and easy answers aren't often the best ones. Doing philosophy helps you sort out the good answers from the not-so-good.

How can I find out if my answers are any good?

> First you listen carefully to other people – adults and children. You learn to compare your answers with theirs. You notice where you agree and disagree. Next, you dig deeper. You compare your reasons with theirs. You talk about the different experiences behind those reasons.

Can you give me an example?

> Let's say you think a friend is someone who always tells the truth but your friend thinks a friend is someone who always agrees with him.

Then we'd be in trouble. We'd fall out all the time.

> Instead of falling out straight away you could talk some more and try to explain your thoughts and feelings. You have to be careful and patient with each other. It's like building something together.

What if we still couldn't agree?

> At least you would understand each other better. You'd know why you disagree. And you might be able to decide whether disagreeing matters more than your friendship.

So philosophy is like building ideas and opinions about things that matter to us or puzzle us?

> Yes, and it's about trying to make those buildings as strong as you can by thinking well. That's what philosophers have always tried to do.

Can children do philosophy and think well?

> I believe you can. You just need some practice.

Thanks for answering my questions.

> Thank you for questioning my answers.
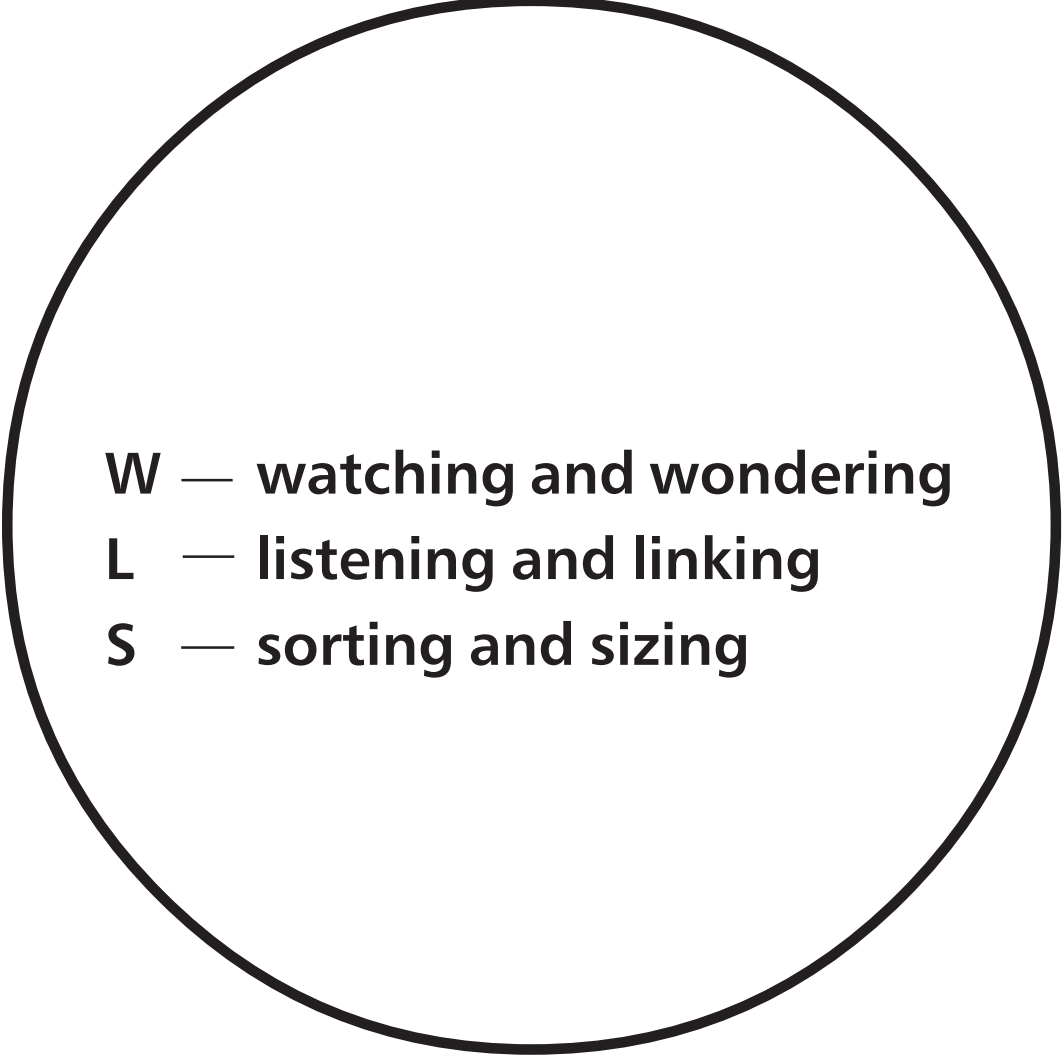
Owls and wisdom

This is a plan for an assembly or short introductory session that could be used to create interest in the philosophy club. It explores the connection between philosophy and wisdom, using the idea of 'good judgement' as a bridge between them. Please judge (!) for yourself whether it is appropriate for the children you work with. Text in italics below suggests some forms of words that you might use.

1. You might start by saying something like: *I'd like to talk a bit about a/our new club called 'The Philosophy Club'. Even those who haven't heard much about philosophy may find something of interest in it. For example, that the word itself was used in ancient Greece to mean 'love of wisdom'. Nowadays we might translate that into something more like 'wanting to make good judgements, about what to think and what to do'. I guess we'd all like to make good judgements all of the time, but it's not so easy is it? Let's see if we can find out what's involved.*

2. Then ask: *What things can people make judgements about?* Mention different kinds of people like politicians, doctors, teachers and parents and ask what kinds of judgements they each make. Ask: *What things have YOU ever made judgements about?* Welcome and repeat some of the responses you get. Then ask: *What can help people make good judgements?* Children might mention knowledge, experience, care, thoughtfulness, fairness, even wisdom.

3. Considering these decisions say: *Some people might say that wisdom includes all of these things. But let's think some more about it. Can you think of any animals or creatures that are thought to be wise?* It is likely that owls will feature in their answers, but if not the expression 'wise old owl' can be introduced.

4. Ask: *Can anyone think of any reasons why owls have been thought to be wise?* They are believed to have good sight and hearing. Try to get these and other ideas linked to wisdom in some way.

5. Continue: *Let's see if we can find a way to wisdom with the help of owls.* Draw a big circle or O and write the letters W, L and S inside and on the left as in the example on the next page. Using the children's previous ideas about owls if you can, work towards the skills shown in the example as giving us possible paths to wisdom.

6. Invite the children to follow OWLS on the paths to wisdom by joining the philosophy club, where there will be lots of seeking/questioning and speaking/ discussion. You might also commend them for listening and learning well at this assembly/session.

Organiser's note: The W's and L's probably explain themselves, though the value of *linking* or connecting may need to be explored and emphasised. From the very moment we are born, our brains are at work linking objects and events to each other, building a scheme of causes and other relationships. We link these things with words, and then words with other words. In fact, it could be argued that linking is the most basic of thinking skills.

Sorting is almost as basic, since without the ability to put like things together in our minds, and to separate unlike things from each other, we would be overwhelmed by the variety of 'things' we experience. Our ability to use labels to

W — **watching and wondering**
L — **listening and linking**
S — **sorting and sizing**

put things into categories or groups, and then to describe the properties of such groups, opens the way to abstract reasoning about properties.

Sizing, of course, could be regarded as an elementary skill of survival, as important to small creatures needing to avoid large ones, as to larger creatures seeking out smaller ones – and as such more of an instinct than a 'thinking' skill. But there is a wider and more sophisticated sense of the word, as in the expression 'to size (or weigh) up a situation'. This may be presented as the common and vital skill of evaluating, or deciding on the importance or value of things.

Finally, the idea of sharing can be introduced by suggesting that the big O represents a circle of people sitting together. You could say the O stands for *Opening* (our minds to other people's ideas) and *Offering* (our ideas to other people).

These may not be skills as such, but the disposition both to keep one's mind open and to share one's thinking with others is surely fundamental to active participation in a learning community.

Follow Up: at the end of any philosophy club session, remind the children of the OWLS circle and ask them what progress they think they are making on any or all of the 8 paths to wisdom. You could also ask them to think of other paths to wisdom.

What is philosophy?

THE
Philosophy
F I L E S

Starting points	Digging deeper

The Greek words, philos and sophia, that went together to form the original idea of philosophy meant literally LOVE and WISDOM.

Are you able to recognise the feeling of love inside you? Think of your favourite hobbies from sports to shopping. Do you 'love' those hobbies? Do people love their hobbies the same way they love their family or friends?

Do people love objects differently from how they love people? Is it possible to love things other than objects or people, *eg* wisdom? Is love a feeling or lots of different feelings, or not a feeling at all?

The most famous philosopher in Greece was **Socrates**, who lived in Athens nearly 2,500 years ago, and according to the mysterious 'Oracle' at Delphi, was the wisest man of his time.

Suppose someone tried to hold a competition to find the world's wisest person. Do you agree that no wise person would allow themselves to be entered for such a competition? If so, why do you think that? What sort of challenges would you suggest putting into the competition?

But Socrates himself said :'The wisest is he who realises, like Socrates, that his wisdom is worthless.'

What do you think Socrates was trying to say? Do you think some people are 'wiser' than others? If so, what is it about them that makes you think they are wiser? Is wisdom just knowing a lot, or is something more needed? Can other people teach you to be wise, or is wisdom something that just comes naturally?

Here are two other famous sayings of Socrates: 'The unexamined life is not worth living' and, on looking into an expensive shop, 'See how many things I can do without!'

Not all examinations are as nerve-racking as school examinations. Can you think of examples of examining things where there is no pain involved? Can you think of examples where there is actually some pleasure involved? Could examining and talking about your own life – especially your achievements, your skills, and your ambitions – make it all seem more worthwhile than if you went through life without really thinking about it?

Both Socrates' sayings seem to be judging what has *worth* and what does not. Forgetting for a while that things have had worth to other people and at other times, such as cars or gold, try to work out what things have most worth to you personally, here and now. If you pool your ideas as a group, you might be able to come up with a good long list. Are most of these things objects, *ie* things that you can see and touch, or are most of them not, *eg* a good night's sleep, or the feeling of being loved or trusted? Was this enquiry *worth it*? If so, why? If not, could you make it worthwhile by drawing any lessons from it?

Starting points   Digging deeper

Ancient eastern civilisations did not take the word philosophy into their vocabulary, but they had a similar tradition by the name of MORAL WISDOM, whose focus was obviously on moral and practical matters (*ie* how to lead a good life).

When a story is said to have a moral what do we mean by that? Could every story be found to have a moral? Could morals be found outside of stories? Suppose two morals appear to contradict each other (*ie* cannot both be true at once) – for example, 'Many hands make light work' and 'Too many cooks spoil the broth'... How could a 'morally wise' person help us decide which one to apply?

By coincidence, the two most famous teachers of moral wisdom in those civilisations lived around the same time (c. 550 - 480 B.C.). **Confucius** lived in China, where his ideas have remained influential to this day. **Siddhartha Gautama** (known as the Buddha, or Enlightened One), lived in India, but his influence has spread farther afield, even to modern western countries.

Confucius believed strongly in a tradition of learning through listening to others. He said, 'I can always be certain of learning from those I am with. There will be good qualities that I can select for imitation and bad ones that will teach me what requires correction in myself.' He also said, 'He who learns but does not think, is lost. He who thinks but does not learn is in great danger.'

Apart from language itself, what important things have you learnt from your family and others around you? (You might like to discuss this question in small groups before trying to put together a list for everyone.) Do you spend much time thinking about 'correcting' yourself? Would that be the same as listening to your 'voice of conscience'? Is it possible to learn something without thinking? Even if learning has to be accompanied by thinking, could there be different sorts of thinking, some of which make learning 'better' than others? Could friends help each other to think better? If so, how? How could it be dangerous to think without learning?

The Buddha taught what is called The Eightfold Path, *ie* the eight steps to Nirvana, or bliss. He also called this the Middle Way, *ie* a course between a life that was too luxurious and a life of extreme poverty. Some of the steps seem straightforward, such as *Right Speech* (taking care to say just what you mean, and speaking kindly) or *Right Behaviour* (reflecting on your behaviour and your reasons). But putting them all into practice is a demanding discipline. For Buddhist monks it is a life's work, and it is a work that requires *Right Association*, or the right company: a Buddhist is supposed to associate with other seekers of truth in a spirit of love.

How could a life be too luxurious? What would you count as extreme poverty?

Can you give examples of trouble caused by people not saying what they mean? Could it ever cause trouble to say exactly what you mean? If so, would it be better to say nothing? Or could you make a case for *Right Meaning*, *ie* meaning the right thing in the first place?

If you reflected on your behaviour of the last few minutes, would you be satisfied that you had the right reasons for that behaviour? If you reflect on your behaviour in general, could you find reasons for trying to change your behaviour?

Do you agree that being in good company helps you to be better yourself? If so, how? Does being a seeker of truth mean you have to be serious all the time? What is a spirit of love? Could a spirit of love include a spirit of fun? Could a group deliberately create a spirit of love, or does it just happen by good fortune?

The **PHILOSOPHY** CLUB

AN ADVENTURE IN THINKING

Doing philosophy is trying to work out your own best answers to questions that people will always be wondering about – questions like:

- *How do I know what is true?*
- *What can I expect from a friend?*
- *Can computers really think?*
- *How do I make up my mind what is right and wrong?*

At the philosophy club you'll be able to read stories and scripts to make you think and then talk about your own questions with others.

To find out more:

Philosophical **enquiry**

Philosophical **enquiry**

Reflection and enquiry take time. This section gives advice about how to provide a structure for philosophical enquiry that will allow club members to develop their own questions and discuss them thoughtfully and with care. There are three items.

The community of enquiry
This approach to philosophical thinking has been the bedrock for many people practising it in schools over the last thirty years. It was developed by Professor Matthew Lipman, author of the *Philosophy for Children* programme in New Jersey.

The role of the organiser
Some general tips about how the club organiser can help foster philosophical enquiry.

The cycle of enquiry
A full description of the stages of enquiry from sharing the initial stimulus, through developing questions to discussing and then building further. There are many tips based on experience to make each stage run smoothly and effectively.

· ·

Further training in philosophical enquiry
Sound understanding and practice of classroom enquiry will enable organisers to achieve good results. *DialogueWorks* runs courses in philosophical enquiry. Further details are available from:

Email: enquiries@dialogueworks.co.uk

· ·

The community of enquiry

A *Community of Enquiry* may be defined as a collaborative and reflective approach to discussion built up over time with the same group of learners. It aims to achieve:

• *Community*: cooperation, care, respect and safety

• *Enquiry*: a search for understanding, meaning, truth and values supported by reasons

The community of enquiry can play a positive role in combating what is perceived to be a drift in society to the idea that opinions can't be judged and don't need to be justified.

The community of enquiry is not a mere exchange of opinions where *anything goes*. On the contrary, it is a context for discussion wherein people are challenged to justify their opinions regularly.

Whilst the experiences of individuals may vary considerably, learning to express them is the first step towards appreciating different values and constructing shared ones.

The role of the organiser

Every member of the club should be encouraged to take their own responsibility for the successful building of community and understanding. However, the teacher or philosophy club leader has a particular role to play in guiding the group, and we do recommend that she or he studies the next part of this section, on *The cycle of enquiry*, to prepare for that role. We also give a few general, practical suggestions below.

The role of co-enquirer
Modelling the enquiring mind

Our first suggestion is to put yourself as far as possible into the role of *co-enquirer* – one who has as many questions as anyone else in the group. This is not always an easy role for teachers who may think they are expected to *know all the answers*; but it is a particularly appropriate one in the field of philosophy where arguably no one knows all the answers. It was Socrates, after all, who thought that wisdom or deeper knowledge started with a recognition of how little one knows.

Note: The organiser must also be the *guardian* of the discussion. He or she should not let the discussion drift or be overwhelmed or undermined by one or two strong characters within the group. Advice on how to avoid this is given in the *Discussion* section of *The cycle of enquiry* that follows under the heading *What can go wrong?*

Just two notes of caution about playing this role of *humble enquirer*. Firstly, one should be careful in the early days to give the members plenty of encouragement and space to put their own questions forward. The art, then, is to adopt an enquiring frame of mind without always feeling the need to make your own questions public before club members have had a chance.

Secondly, one should avoid giving the impression that just because there are no definitive answers to philosophical questions there is no point in thinking about them!

For what can be said with a fair degree of confidence is that some answers to philosophical questions are better than others, and working out which answers are better, and why, is a challenging and rewarding task. Helping club members in this task may require a whole range of skills from the leader, many of which may take a while to develop.

The role of philosophical listener
Modelling the listening mind

The most important of these skills is simple enough to state, but very demanding in practice. It is that you should model exactly the sort of *philosophical listening* to each contributor that you would ask from all the other participants.

Philosophical listening means being receptive to people's ideas and being ready to ask questions so you and others can understand better what they mean. A good listener is faithful to the detail of individual contributions and supportive where others are struggling to articulate their ideas. This is, in fact, easier said than done, not least because as leader you will be needing to think ahead to your next moves whilst paying close attention what others say. But of course the point is that your own next move, like everyone else's, should build carefully on the enquiry.

The role of philosophical guide

A good philosophical guide will use a variety of strategies to help build a good discussion. These include:

Developing the reflective mind

Reviewing discussion. A most effective way of keeping participants on track is to ask individuals, from time to time, how what they have said connects to, or builds on, what other people have said. This not only reduces the temptation to irrelevance but also encourages good articulation of argument.

Developing the reasonable mind

Asking for reasons, examples and criteria. It is good practice for the leader or group to call for examples or reasons to support an argument. But care should be taken not to let personal anecdotes wander off into the irrelevant: this can be very destructive of collaborative thinking. Again a balance needs to be struck. A good leader will develop a sense of when to nudge the abstract into the more concrete, and when to move back from the particular to the more general.

Developing the precise mind

Clarifying concepts. The organiser should encourage, by example, the clarifying of concepts. The basic procedures for this are presented with the *concept explorer* sheets in *The philosophy building book* section. They can be used more informally during discussion.

Developing the constructive mind

Drawing out arguments, theories and general rules. It is always worth checking whether what people say implies that they are putting forward a general theory or rule.

The role of counter-advocate

Developing the critical mind

As well as taking the role of the humble enquirer, a leader may also, from time to time, take a role as *devil's advocate*. However, we suggest that a better way of designating this role is as *counter-advocate*, because it avoids the implication that what one is doing is in some sense wrong (and therefore that the original position must after all be right).

The aim, here, is just as much to stimulate further enquiry and reflection, but at times it might prove more genuine and natural than feigning ignorance of an alternative line of thinking. Of course an even better way might be to invite someone else to act as counter-advocate (since you will want to avoid a pattern of discussion where you reply to every contribution, and you won't wish to intimidate club members before they have gained in confidence). Acting as a counter-advocate could include:

Putting forward alternative explanations, predictions and conclusions. There may be more than one way to explain a set of experiences or observations. It is always useful to offer these for analysis.

Offering counter examples. Good examples can strengthen an argument, but the selection of examples might be one-sided. It is useful to point out any *exceptions to the rule* that is being considered.

Questioning logic. Asking if each step of the argument follows from what has gone before. The *Logicworks* section will be useful preparation.

The cycle of enquiry

Introduction

Note Just as listening and thinking come into every stage of the cycle, so the activity central to each stage may enter into any other stage. For example, discussion can be encouraged during the questioning stage, and further questioning in the discussion stage. One would also expect sharing of ideas during the building stage, and a continued ethos of building in the sharing stage. Nevertheless, it helps the club's sense of purpose for members to appreciate the central focus in any particular session. The speed you move through the whole cycle will vary but it is important that you give sufficient time for each stage.

Summary of stages in the cycle of enquiry

Questioning is the wellspring of knowledge and understanding. The philosophy club should be dedicated to cherishing questions from children and young people whenever they are voiced.

Each section of philosophical resources contains a stimulus created to start a new 'cycle of enquiry' (see below). A single cycle may take several sessions, but when you sense that it has run its course, call for a review. The review might highlight 'old' ideas or questions that members still want to discuss; or it could throw up a new idea or stimulus for a whole new cycle. Don't forget you always can turn to the follow-up pages – or to members' record books – for inspiration between cycles!

Sharing: Members share a story, a challenge, a puzzle, a question, a poem, an experience, a film, a dialogue, a piece of music, a work of art or another stimulus.

Questioning: Members take some thinking time to create questions prompted by their sharing session. Then they choose which questions will start the discussion.

Discussion: Members discuss the question(s) carefully and thoughtfully.

Building: Members build on their enquiry through linked activities.

Sharing: Members review the whole enquiry and share their achievements.

Listening and thinking: The art of paying thoughtful attention is at the centre of the cycle, being both a starting point and an ongoing feature of good philosophical enquiry. Such active listening is very different from silent non-communication due to fear or lack of effort. Good listeners often ask questions because they want to understand what other people mean before agreeing or disagreeing with them. Good listeners give others the satisfaction of feeling that their ideas really matter.

The cycle of enquiry in practice

The notes that follow give general advice about how to make each stage of the cycle work well.

Preparation

It is important for the group to sit in a circle or horse-shoe, as an aid to good listening but also to indicate that everybody's participation is equally valued.

We also recommend that, before beginning their first cycle of enquiry on a *Philosophy club* unit, the group spend time on the resources in *Why do philosophy?* and on *Developing rules for dialogue* in the *Philosophy building book* section.

It is normal for the club organiser to choose a stimulus from one of the philosophical resources sections to start a cycle, and to lead the sessions. He or she will also take responsibility for any other necessary resources such as photocopies of the stimulus and follow-up sheets. It might be appropriate later to let club members introduce a new stimulus and lead the discussion. If so, they will need to prepare themselves by reviewing the stimulus before the club session starts.

Sharing

Enquiry works best when discussion focuses on a shared experience such as reading a story or facing a group challenge prior to creating questions.

Reading a text together can be done in several ways.

- Every club member reads a part of the text in turn.
- Members volunteer to read. Volunteers raise hands. Each notes the next reader on his or her left side and the text is read around the group.
- One person or group reads the whole text. They will have prepared their reading before the session.

If the reading is shared, the length of text each person reads can vary. For example, a poem or other short piece could be read sentence by sentence to give pace and concentration. Longer pieces might be broken into reading units of appropriate length.

Note At the end of this stage, some thinking time should be taken to allow members to reflect on the experience they have shared.

Text can also be read more than once in different ways if appropriate. For example, one person could read it first followed by a group effort.

If the sharing involves an activity or challenge such as a role-play, then enough time needs to be given to complete it. This may mean splitting the activity over several club meetings.

Further guidance on sharing will be given within the philosophical resources themselves.

Questioning

Following the shared experience and thinking time, members should be asked to create questions that are based on their own interest, curiosity or puzzlement. Questions may reflect the whole experience or part of it. Members should be encouraged to create questions 'that would be good for discussion'.

Creating questions

If the stimulus is a text and some of the group find difficulty thinking of questions because they lack confidence in reading, the organiser can try to help by copying some key sentences to focus their concentration. Alternatively, learners can be given strips of self-stick notes to mark *hot spots* in a text.

Editing questions

It is important for members to get their questions clear in their mind. Most people find it helps to write them down. (The self-stick notes can be useful for this.) Then questions can either be shared with the whole group straight away – see below – or compared in small groups of two to four. Comparing can be useful in several ways.

- It gives people time to create or clarify their questions with help from others.
- It gives those who haven't thought of any questions the opportunity to help others.
- If the whole club is large, members might generate so many questions that they find it hard to take them all in. The number of questions can be limited by asking each small group to put forward just one question.

Sharing questions

When the editing time is over, questions are shared with the whole club. This can be done in two ways:

- Each person or group reads out their question, which is written on a large board or flip-chart for all to see. The names of the questioners are written next to each question. This is good for reinforcing the importance of questions and emphasising the contributions of group members.
- Each person or group writes their question in large letters and holds it up. Clipboards work well for this. The questions can easily be seen because people are sitting in a circle.

Choosing questions

There are various ways for the club to choose questions at this stage.

- Members are invited to make suggestions and give reasons.
- Members can vote using one or two votes each. In very early sessions, the organiser could make the final choice and give reasons. However members should be given the chance to choose questions as quickly as possible.
- Members are asked what is the best way to choose a question and what the criteria should be. Then they devise a system and try it out.

Variations to creating and choosing questions

The following ideas for gathering questions to start the discussion can also be tried.

- Arrange for one group to read the stimulus at home before the club session. They meet together with the session organiser and create a small group of questions. These are the questions that start the discussion.

- Before choosing questions, people try to group them according to themes or other similarities. They choose one of the themes and take the group of questions as a starting point.

- Instead of the group trying to think of questions straight away, each person or small group writes a short paragraph about what interested or puzzled them about the shared experience. They read out what they have written to the rest of the group who choose one or more of the pieces. Everyone tries to help create a question based on those pieces. The question is written on the board and starts the discussion. The same can be done using members' drawings as a starting point or parts of the text marked as *hot spots*.

- Once a question is chosen and at any time during the discussion of that question, a member of the club can ask, 'But what are the questions behind this question?' At an appropriate time, the group can try to create a question web (see the model *Question web examples* in *Philosophy building book* section). So, for example, if the chosen question is, 'Should parents be allowed to hit their children?' some questions behind it might be: 'Are children special kinds of people?' 'Are some kinds of hitting okay?' 'What do we mean by something being allowed – is that different from it being right?'

Saving questions

All questions, including ones that don't get chosen, should be saved and written up in a shared *Philosophy club book* (see below). This is valuable in two ways.

- It is useful for the club organiser and members to find out what the most popular kinds of questions are and how types of questions develop through the life of the club.

- It is enjoyable for club members to see what they have been interested by. Members often enjoy borrowing the *Philosophy club book* to share with friends and family or to read in quiet moments.

Using the questions to start a discussion

When the starting question has been chosen, it is displayed for all the group to see clearly. It is usual to ask the creators of the question to start the discussion off, either by beginning to answer the question directly or telling others what they wanted to find out by asking this question and why.

Discussing

Discussion is at the heart of the enquiry cycle but the club should be aiming for a kind of discussion – often called *dialogue* – that is more to do with building something together than with exchanging ready-made opinions. Opinions are still expressed but final judgements are held back until other points of view have been explored. In a good dialogue people disagree without getting angry with each other and they want to understand what others are trying to say. Careful listening is as important as careful speaking and active listening will show up in questions members ask each other.

What can go wrong?

Here is a list of common problems that might arise during discussion and some ideas about how to deal with them. P stands for problem and A for advice.

P. The discussion is chaotic. Members interrupt each other and don't follow the main threads of the dialogue.

A. Develop some rules for discussion as outlined in the *Philosophy building book* section and try to stick to them. The discussion leader should try to keep the group on track. If the problem persists try a strategy like asking the present speaker to choose the next one. One of the group could also keep track of who has spoken and be empowered to choose the next person. People may indicate discreetly to the discussion leader/recorder that they want to speak next, but they shouldn't keep their hands up when someone else is talking – it can be very distracting.

P. General opinions are given that imply differences but they aren't followed up. Differences and similarities are barely noticed.

A. The group must keep checking how one opinion compares with another. Concepts must also be explored to see if people are talking about the same thing when, for example, they use a word like *education*. The discussion leader should keep reminding the group of this.

P. The group loses its way. Members can't tell if they are making progress.

A. Have someone try to summarise the main points of the dialogue from time to time. Alternatively, track the discussion yourself with key points/ideas on the board.

P. The discussion is either too particular and takes the form of one anecdote after another, or too general with everyone making sweeping statements.

A. Dialogue moves up and down from the general to the particular and back. If the discussion is too general, you have to ask for examples, if it's too particular you have to ask if any general rules are involved.

P. Only a few members of the group talk. They talk a lot. The rest are silent.

Tip It's best not to change the wording of the chosen question, both as a mark of respect to the questioner and to avoid confusing the issue. If the question is not particularly philosophical it can often be developed during the course of the discussion in a more general way. For example, after reading the story Rumplestiltskin, a group of children asked: 'Why did Rumplestiltskin want the baby?' In the course of the discussion, the organiser changed the focus of the enquiry by asking: 'Why does anyone want babies?' This was developed in all kinds of philosophical directions before the club returned to Rumplestiltskin and his particular motives.

The organiser in discussions

A. The club organiser should make opportunities to commend good practice. If the quiet ones are listening well, congratulate them and encourage the talkers to listen more. Emphasise that good listening also involves asking questions. Encourage quiet members to ask questions and give them special opportunities to do so. They could be asked to write down questions that occur to them during the discussion and read them out at the end in a sharing session.

Provide opportunities for small group discussion with report backs to the whole club. Ask quiet members to do some writing for a *Philosophy club book* or noticeboard.

At first the club organiser will take a leading role. Certainly, he or she should aim to keep the discussions focused, good tempered and moving forward. Club members should be encouraged from the start to talk to each other directly, not through the organiser. Organisers also have to think carefully about the following things:

1. Giving other group members enough time to contribute. Sometimes it's a good idea to count to 10 before expressing your own thoughts. Someone else may want to say something but assume that the organiser will always keep the initiative.

2. Considering alternatives to questions. Some children are intimidated by being asked direct questions by an adult. They are afraid of getting the answers wrong and seeming to have failed in the adult's eyes. It's often better to welcome their comments and then follow up with a request rather than a question. For example: 'I'm interested by what you say Paul, but I'd like you to give us an example,' instead of 'Can you give me an example?' Here, the psychological demand is different. You let the child know you are confident about his or her reply and you have requested them to give one. Most children are keen to fulfil requests from adults, provided they understand what they are being asked for. This strategy can be used with all the dialogue questions suggested below. However, you should still encourage children to ask dialogue questions of each other.

3. Giving a good example of being sensitive to ideas and excited by them.

4. Giving a good example of noticing concepts that need clarifying, and differences that need exploring. Organisers should familiarise themselves with the support materials for each unit and the materials for analysing concepts and concept mapping. This will help them identify some of the philosophical problems and possibilities that arise during discussion.

Note These questions are meant for the organiser to read and digest. However, they could also be presented to club members, whatever their ages. For example, one section of questions at a time could be introduced during a series of club sessions by being written on the board. The members would be encouraged to use them. Their own repertoire of dialogue questions could be built up in this way and gradually internalised. This would aid their thinking in many contexts and encourage them to develop a kind of critical common sense.

Dialogue questions

Dialogue questions help you to understand what others mean and assist the whole group to find things out together. In other words they make good dialogue possible. Questions to ask yourself during a dialogue are emphasised in bold text. These lead onto questions to ask others in the dialogue. You might even be able to answer your own questions. In that case, let others know what you think.

Do I understand?

Can you explain what you mean by ...?

Can you give me an example of ...?

Could you say that in another way?

Is that different from saying ...?

Is that the same as saying ...?

Can someone help me to understand that?

Why do they think that?

What reasons do you have for saying ...?

What is the evidence for saying ...?

Does that come from your feelings?

You've given your example. What do you think about mine?

Is that always the way it is?

Where are we?

Where are we with the question that started us off?

What are the main things we've talked about so far?

Do we all agree with that?

What if ...?

Does everyone understand the different points of view?

So what?

What follows on from what you say?

If that was true, what would it mean?

If that happened, what else would happen?

Is there a general rule involved?

What can I compare that with?

Is there another possible way of thinking about that?

What are we agreeing or disagreeing about?

Is that the same as what you (or someone else) said earlier?

Is that like something else I know about?

How do I feel? (It's worth thinking about whether you feel uncomfortable or happy about the discussion. Think about the reason. If you think it's important, tell other people about your feelings, start by telling or writing a note to the organiser.)

Building

Building on the sharing, questioning and discussion stages of enquiry can be done in many ways. There are plenty of resources in the *Philosophy club* pack to help you. Here are some ideas. There are some further detailed suggestions in the *Philosophy building book* section that follows.

Regular activities

The following things could be tried regularly:

1. Review and develop rules for good discussion

2. Evaluate or record discussions and dialogues using the review sheets and diaries in the *Philosophy building book* section, including the OWLS diagram about 'paths to wisdom'.

3. Invite members to share final thoughts about each enquiry when you have reached the end of a session. (This is often called *last words* or *last round*.)

4. Create a shared *Philosophy club book* to store questions, question webs, follow-up writing and photographs. Create a display area in the club meeting space.

5. Build up a dictionary of *thinking words* for the noticeboard and the *Philosophy club book*. Include words like: agree, disagree, distinction, conclusion, reason, assumption, fact, opinion and so on. Try to get members to define these words. Sometimes they will need to make distinctions to define them, for example the difference between knowledge and beliefs. Members should be aware of interesting thinking words as they come up in the discussion. Have a weekly scribe write them down as they are pointed out. They can be used later as a focus for definition.

Philosophy club follow-up activities

The stimuli in each issue of the *Philosophy club* have follow-up activities that can be used to build on the club's enquiry. Questions in the follow-up sections can be used by the discussion organiser to rehearse topics that might come up in discussion. They can also be used to dig deeper into a question that was skipped in the enquiry but that members are interested in.

Writing

Members might like to write pieces for the *Philosophy club book*.

1. Members in small groups write a dialogue between two characters about the questions they have been discussing. It can be based on what people in the club said. A tape recorder can help. A variation is to write a dialogue where the characters follow the rules of good discussion. See further advice on writing dialogues in the *Philosophy building book* section.

2. Members can choose a question from the question section of the *Philosophy club book* and write some of their thoughts about it. Several pieces of writing could be chosen to start a new discussion or a follow-up.

3. Lists can be used to structure collections of criteria, examples, counter-examples, arguments and analogies that come out of a dialogue. Criteria may conflict but that is another way to stimulate enquiry. For example, the group might list their own criteria for friendship.

With all the different possible ways of conducting a philosophical enquiry – and all the thoughts to bear in mind as you do so – you might at times feel that it is all too much to manage. Wouldn't it be so much simpler to go back to talking at the children, when at least you control the ideas put forward in public? Of course it would! But where is the adventure in that – for you or the children? It may be better just to accept that sometimes you/they will go up a blind alley or lose your bearings. But try to stay with the process and celebrate the successes that will be unique to your own club. Freedom of thought is a precious freedom, which needs courage and commitment to defend and promote.

Summary

You might also find it reassuring, however, to keep in mind that the sheer variety of ways of thinking that will have a chance to flourish in your club will mean that there is no single 'right' way of orchestrating them. Remember that the club is yours and the children's, and you can all run it how you like. You do not have to prove anything to anyone else if you are all happy with your own progress. The only thing that can stop your being a philosophy club is if you all lost interest in continuing enquiry and discussion.

Philosophy **building book**

Philosophy building book

This section contains ideas and photocopiable sheets to help organisers and club members build on their enquiries by keeping records of topics, progress and follow-up work. It also suggests some ideas and tools for exploring concepts, writing dialogues and developing questions. The section includes:

Developing rules for dialogue
Participating in a philosophical enquiry requires much self-discipline. It may help to develop a set of rules. This section offers advice on how to go about it.

Record book cover sheet
Club members can use a photocopy of this sheet as the cover of their building book.

The philosophy record book
A collection of ideas about how to use the book and what to put in it.

Goals for dialogue
A review sheet to check on progress in social and collaborative aspects of discussion.

Enquiry review notes
A photocopiable sheet to record questions and ideas following an enquiry.

Exploring concepts
A method of exploring concepts using guidance sheets. Instructions on how to use the sheets are given as well as a set of blank sheets.

Creating concept maps
Ideas for tracking discussions using concept maps. A discussion and worked examples are provided as well as blank sheets.

Creating question webs
Explanation of way to help members become more sensitive to potential questions and to develop their own questions. Worked examples and blank sheets are provided.

Writing dialogues
Notes on the value of writing dialogues and advice on how to write them.

My philosophy club building book

An adventure in thinking

DIALOGUE
W O R K S

The philosophy building book

Making a building book?

Each club member can use a ringbinder file to keep items from the club sessions, including photocopies of stimulus materials and any activities they complete in the *building* part of the cycle of enquiry. They should create their own cover sheet or use the *My philosophy club building book* page provided. They should use A4 lined or blank paper apart from the special sheets included in this section. Here are some suggestions about what members can put in their books.

Reviewing enquiries

Members can each use an *Enquiry review notes* sheet to keep track of club discussions. A photocopiable review sheet is provided in this section.

Saving questions

Members can copy questions that interest them from the list of starting questions for each enquiry. If the club keeps questions in a shared *Philosophy club book*, then this recording can be done at any time. Members might select questions as the starting point for some writing. The *Enquiry review notes* sheet can also be used as a source of questions for members to follow up.

Philosophical diaries

Each member can keep a philosophical diary by writing down their own thoughts and questions. They can also use the diary to develop questions by redrafting them or using a question web. Resulting questions could be suggested for discussion in one of the club sessions. Pictures and cartoons can also be created for the diaries.

Philosophical clippings

Members can collect newspaper and magazine articles that interest them and that prompt philosophical questions. They can also copy extracts from books they have read. Fiction, nonfiction and poetry may all stimulate philosophical thinking.

Reviewing progress

The organiser and members together can review the members' progress in discussion and dialogue. The *Goals for dialogue* sheet provided can be used for this purpose as often as seems appropriate. Members should save the completed sheets in their philosophical building books.

Thinking dictionary

Each member should keep their own version of the *thinking dictionary* suggested in the *Building* section of *The cycle of enquiry*.

Developing rules for dialogue

Why rules?

Schools and homes are often places where young people have to listen to what adults tell them. Members may not be used to listening to others of their own age when 'serious' matters are discussed. In contrast, philosophical enquiry teaches young people to respond critically and creatively to what teachers, parents, classmates and friends alike have to say.

The most common barriers to independent thinking are: using *authorities* (*eg* teachers, parents, television, textbooks) rather than our own thinking; being afraid of losing face or friendship (*eg* of friends and classmates) and being regarded as stupid (*eg* by teachers, classmates, parents).

To avoid confusion and possible problems later, it is advisable to discuss before you start with the *Philosophy Club* units what sort of behaviour and attitudes are necessary to make philosophical enquiry work. At least one session could be used to discuss, agree and record a set of appropriate *dialogue* or *discussion rules* with members.

It might be an idea to start off each session for the first month or so by reminding the group of their own rules. Sometimes it helps to choose one rule to work on in each session. Certainly everyone should keep in mind what they are trying to achieve. An ideal group discussion has the following features:

1. *Everyone listens to the speaker.*
2. *What is said is taken seriously.*
3. *People reply to what is said.*
4. *Individual ideas are used as building blocks to reach a higher level of understanding.*
5. *All have a chance to speak.*

Note: Some of these ideal features are reflected in the *Goals for dialogue* record sheet that follows this section.

A high standard of discipline is important right from the outset, especially because it is so different from 'normal' lessons. If any of the members do not stick to the rules, the other members' freedom to speak, and to be listened to, will suffer.

The organiser's role is to facilitate – to guide the discussion, and not to stay out of the discussion altogether. You are responsible for ensuring that the rules are complied with. Even if members have developed the rules themselves, they will need constant reminding of their own rules! So what sort of rules do you need to approximate the ideal, and what sort of strategies do you have to bear in mind?

1. Everyone listens to the speaker	Do not allow members to be inattentive, or have conversations outside the group discussion. Rule: 'Listen to the speaker'.

Members could be asked to raise a hand if they want to speak but to put their hands down as soon as they are noticed. The chance is that the members with their hands up are concentrating more on what they are going to say, than on what the speaker is saying.

Make sure that each person can calmly finish off what they want to say. If they need to pause for a moment to find the right words, allow them to do so, without the others interrupting. Less confident people are easily intimidated. Give them plenty of time to say what they want to say in their own words! Apply the rules 'Give each other plenty of time to speak', and, 'Wait until someone else has finished talking'. |
| *2. What is said is taken seriously* | A rule such as, 'Don't make fun of what others are saying', may be helpful in promoting friendly and constructive discussion. |
| *3. People reply to what is said* | It is difficult to give general guidelines about whether or not people are allowed to respond only to what has been said before. When the discussion is going somewhere, the introduction of side-issues may be destructive for the philosophical dimension of the dialogue. Having said that, it is sometimes difficult to predict what is, or is not, beneficial for the discussion. People can be very creative in incorporating 'what is beside the point' into the general discussion. These discussion moves are not easy to predict, although their prediction will improve with practice.

Since starting off new discussion topics is sometimes necessary, a general rule such as, 'stick to the subject', is not very useful. Exploration of unexpected areas may be stifled.

Judging each situation for its appropriateness seems to be essential. If many people are very engaged in a particular topic, and one raises a hand, intending to introduce an idea, ask if it has something to do with the topic. If it has, let that person speak, otherwise, they will have to wait until the discussion of this topic has ended. Of course, this is possible only if the rule is that people should raise a hand before talking. |
| *4. Individual ideas are used as building blocks to reach a higher level of understanding* | Follow the enquiry where it leads, but only if most of the members want to. If fewer and fewer members are engaged in the discussion, and most are obviously getting bored, bring the discussion gently back to the point, or introduce another topic for discussion. |
| *5. All have a chance to speak* | Do not allow any of the members to monopolise the discussion. If they keep talking, break them off gently. At the same time, dialogue between two members may occur when they disagree strongly with each other, and you want to give them the chance to react immediately to what has been said. Give them this chance only if others are listening to what they are saying. |

Sticking to the rules

Rules apply to everyone present at the discussion, including all organisers, teachers and visitors. Adults present should show they too are curious about the issues raised, and should show interest in the members' thoughts. Young people are more motivated when they realise that adults value their thoughts.

Successful enquiry depends on your being clear and consistent about the sort of attitude and behaviour you expect of the group members. At the same time, try to create an atmosphere of intellectual curiosity, care, and fun. It is asking rather a lot, but the rewards will be worth it.

Goals for dialogue

Read each of the goals in the list. If you think your group achieved a goal, write YES in the group column. If it didn't write NO. If you achieved a goal, write YES in the myself column. If you didn't write NO. Add up the YESs in the group column and write in the scores.

Dialogue goals	Group	Myself
Listened carefully to every speaker		
Listened without making fun of anyone		
Let people finish saying what they wanted		
Disagreed without showing anger		
Took turns to speak one at a time		
Stuck with the main dialogue topics		
Built on what others said		
Helped others to speak		
Asked questions of myself and others	////	
Tried to reach agreement where possible		
Gave reasons		
Concentrated for a whole session		
Most people spoke		////
I spoke	////	
Score		////

Enquiry review notes

The review notes can be written by one person but it could also be worthwhile if members worked in pairs.

Title of story, poem or other starter for dialogue	Date

Main starting question(s)

Linked question(s) taken from the starting list or the dialogue

Other people's remarks that appealed to me

New ideas of my own

Questions I'd like to follow up

Exploring concepts

What are concepts?

Having a concept of X means being able to recognise X things, distinguish them from non-X things and compare them with non-X things. Conceptual questions are not questions of fact or truth.

For example the question, 'Is John taller than 5 feet?' is a factual question. We can answer this question by finding out the relevant facts.

However, the question, 'Is John my friend?' is a conceptual question, *ie* it is about meaning. We need to consider what counts as *friendship* to ourselves and others. This isn't just a theoretical matter. The way we try to be a good friend to someone will depend on our commitment to the particular concept of friendship that we hold.

Concepts are important

It is important for people to make sure they are talking about the same thing when they use concepts. Otherwise misunderstandings are bound to occur. To avoid such misunderstandings, we need to help young people to become more reflective about words that they normally use without thinking. We also need to take every possible opportunity to extend their range of concepts as every area of life and learning has its own central concepts. Failure to understand these will hinder any learner's progress and understanding. We would have a poor history education without understanding the concept of cause, or political education without the concept of democracy.

The *Concept explorer* sheets represent one way of helping philosophy club members discuss, distinguish and compare concepts through the use of examples. We will explain each part of the sheets below.

Best example(s)

Say the concept in question is *courage*. Under the best example(s) section, members should try to think of some examples of courage in action. They should be able to say of their efforts, 'I think if these aren't good examples of courage then nothing is.' Some examples might include:

- Diving into a river to save someone from drowning. You are a good swimmer.
- Standing up to a bully.
- Risking embarrassment to try out something worthwhile you want to do.
- Coping well with a serious illness.

Members should agree their best examples and then write them on the explorer sheet.

Contrary example(s)

Here, members should try to think of some examples of very uncourageous behaviour. They should be able to say: 'I think if these aren't good examples of uncourageous behaviour then nothing is.' Some examples might include:

Tip. The explorer sheets are meant to be a group activity. It's best if sheets are worked through by the whole club. Thinking of examples could be done in small groups but the whole club should share and choose final entries together.

- Making fun of someone because other people are doing it and you are afraid to act differently.
- Putting the blame onto someone else when you have done something wrong because you are afraid to be blamed or punished.
- Not doing something you really want to do because you fear you might be embarrassed.

Members should agree their contrary examples and then write them on the explorer sheet.

Borderline examples

These are examples that are we are not sure about. They may or may not count as examples of the chosen concept. Borderline examples are interesting because they make us think hard about what the criteria of the chosen concept are. We have to think what it is that makes us hesitate before calling the borderline examples best or contrary ones. Some examples might include:

- Standing up to a bully alone knowing that he is stronger than us and has hurt other people badly.
- Being extremely shy and not being able to get over it.
- Overcoming shyness and embarrassment by taking a pill.
- Stopping someone from bullying another person but you are a lot stronger than both of them.
- Being addicted to the scariest roller-coaster rides.
- Getting a thrill from running across train tracks just before a train goes by.

Members should agree their borderline examples and then write them on the explorer sheet.

Zooming in for a closer look at examples

After completing the sections on model, contrary and borderline examples, it is a good idea to zoom in on all or any of them to explore or discover the criteria that seem to be implied by the examples. So, considering the examples above, does courage seem to have something to do with taking risks and overcoming serious obstacles? What criteria distinguish courage from recklessness? Is it courageous to do something that is well within one's capacities?

Members should use the *Concept explorer close-up* sheets to record their criteria. They should fill in the subheadings as appropriate *eg* Zooming into: *Best examples*.

Related concepts

Sometimes we need to compare and contrast a concept with related concepts to help us understand it. For example, bravery with foolhardiness, boldness, daring, fearlessness, gallantry, nerve, heroism.

Zooming in for a closer look at related concepts

After completing the section on related concepts, it's a good idea to try and distinguish between the concepts. In what ways are they similar and different? Members should write their notes on the *Concept explorer close-up* sheet.

Is the concept useable in real life?

We need to check whether our concept is useable. If we can only think of contrary examples of a concept we might have to relax our criteria.

Using the Concept explorer sheets during or after discussion

Concepts often come up in a discussion and sometimes it is clear that one is central to the enquiry. The organiser or group may feel that, before the end of the session, it would be useful to work through a *Concept explorer* sheet. Alternatively, confusion and disagreement about the meaning of a concept may need attention at the end of a discussion.

Using the concept explorer sheets for preparation of other exercises

The organiser may draw on the *Concept explorer* sheets to prepare a more guided exercise on a central concept. An example of such and exercise is shown below using the work on courage we are already familiar with.

Conceptual exploration	**Courageous**	**Not courageous**	**Can't be certain**
• Standing up to a bully • Not doing something you really want because you fear you might be embarrassed • Coping well with a serious illness • Making fun of someone because other people are doing it and you are afraid to act differently • Stopping someone from bullying another person but you are a lot stronger than both of them • Standing up to a bully alone knowing that he is stronger than us and has hurt other people badly. • Being extremely shy and not being able to get over it? • Overcoming shyness and embarrassment by taking a pill. • Getting a thrill from running across train tracks just before a train goes by.			
For each example, try to explain the reason for your answer			

Concept explorer

Title of story, poem or other starter for dialogue	Date
Concept to be explored	

Best example(s) – including imaginary examples

Contrary example(s) – including imaginary examples

Borderline examples

Related concepts

Is the concept useable in real life?

Concepts explorer close-up

Zooming into:

Zooming into:

Creating concept maps

Why concept maps?	Members can use concept maps to remind them of dialogues and discussions. Creating a concept map can also be a valuable and flexible way of focusing attention on the key concepts of an enquiry and making links between them.
Stage 1: Choosing key concepts	After a discussion or enquiry, a list of key concepts or keywords are selected by the organiser alone or together with the members. Words and concepts are chosen that best represent the main strands of the discussion. This is a valuable cooperative activity in itself and can aid clear thinking and understanding. The number of key words should be limited to no more than 12.
Stage 2: Creating the concept map	The words are then arranged on a concept map sheet with a circle around each one. Words are linked by lines. Statements or questions are written along the lines to create a link between the key words or concepts. If appropriate, an arrow can be drawn showing the direction of the link. Other items can then be added to the concept map, depending on the complexity of the dialogue. We've created an example concept map (Example 1) to represent the discussion transcript presented below. We advise clubs to use the concept map method flexibly.
Getting started	It's best for the organiser to work out a few concept maps with help from members first. The members might be asked to try generating the word-list or even creating a few maps themselves in small groups when they are familiar with the idea. Later on, individual members can be asked to work out some concept maps for themselves. All concept maps can be saved in the members' *Philosophy building books*.
Other uses	Concept maps can be used in the questioning stage of a cycle of enquiry as preparation for choosing a question. After reading, members could draw maps of the concepts that are suggested to them by the shared stimulus. Then they use the maps to help them devise questions. Organisers can use the same method to prepare for philosophy club sessions.
Zooming into concepts	*Concept map close-up sheets* are for *zooming in* to parts of the concept map and adding to it in a separate drawing to help members develop their understanding of particular concepts. In example 2, *zooming in* is used to make the concept a focus for questions. In example 3, *zooming in* is used to order some related concepts by degree.

A sample discussion for concept mapping

The transcript extract comes from a study by Rupert Wegerif of the Open University conducted in close collaboration with teacher Mark Prentice. The following lightly edited extract, about what one of the participants described as *the causing of naughtiness*, is taken from the first session of 'philosophy' with a group of seven and eight year-old children. Mark and the children are all sitting around in a circle on the floor, and using the book *Where the Wild Things Are* by Maurice Sendak (1963) as a stimulus for talk. (An article analysing the discussion can be read in the journal of philosophical enquiry in education – *If ... then*. Rupert Wegerif, 'From ground-rules to reasoning: how philosophy for children works', *If .. then*, Issue 4.)

Transcript extract begins

Teacher: What do you think makes people bad? (3-second pause) Do people behave badly sometimes do you think?

All: Yes.

Teacher: So what is it that drives people to behave badly?

Alex: Other people.

Teacher: Other people?

Alex: Yeh. They can make you want to do something naughty. They can tell you to do something naughty.

Teacher: How do these people tell people to be naughty?

Alex: Yeh, ... making someone ... well Nicholas once drove – drove Adam to do something naughty – sort of spying on me.

Teacher: So whose fault would that be do you think?

All: Nicholas.

Teacher: Is it the fault of the person who tells the person to be naughty?

Peter: Yeh.

Teacher: Or is it the fault of the person themselves ?

Peter: It's the person that tells them to spy.

Teacher: Because earlier on ... Earlier on Peter you were talking about, though, that it's up to the person themselves to be good or bad, didn't you? So is it up to that person to listen to someone else telling them to be naughty?

Helen: They should decide themselves.

Alex: Yeh.

Teacher: Who should decide themselves?

Emma: The person ... not the person that's telling the other person to do it.

Helen: The person that's going to do it.

Teacher: Would you all agree with that?

Gordon: Yeh.

Teacher: Would you agree with that or would you disagree with that? Does the fault lie in the person that tells someone to be naughty or does the fault lie with the person that actually carries out the action?

Alex: Both.

Teacher: ... Who's most at fault, the person who does it or the person who tells them?

Emma: Both.

Helen: Both.

Teacher: Alex?

Alex: I think its both because the person (the person who's being told) shouldn't do it – they don't have to.

Teacher: Ahh, so they're thinking as well. They're making a choice in their mind. Yeh, carry on....

Alex: Umm. The person who tells them, they want to know the information but they don't want to get told off - they want the other person to - the person that they ask - so they decide to use them so they won't get told off themselves.

Emma: That's not always true though.

Alex: They use them for a weapon.

Teacher: So that's an interesting idea; who would like to follow on from what Alex says? (2-second pause) Why isn't that always true?

Peter: If someone said that to me I'd say 'all right I'll do it' and then run off and not do it - I'd just tell the teacher.

Teacher: Right, so you'd make that choice would you?

Peter: Yeh.

Teacher: That you wouldn't carry out that action. So do we have the choice over this idea of good and bad, do you think? Can we choose in our minds if we want to be good or bad?

Helen: I'd say yes and then go and tell someone else to go in there and disguise as that person and it probably would be a policeman and it would just ...

Teacher: That's interesting.

Emma: Can I say something?

Teacher: Yeh, but quick 'cos we're going to stop now.

Emma: I saw on a programme that one person died because another person told him to do glue-sniffing and the other person died.

Teacher: OK. So who was at fault there do you think?

Emma: Both.

Teacher: Right, that's making a connection isn't it? That's making a connection from what we've talked about here to something that's really happened.

Concept maps

List of key concepts or key words	Date
Bad, behaviour, choice, naughty	20 June 2000

Concept map

Bad — Behaviour can be bad — Behaviour

Bad — Can people choose to be bad (or good)? — Choice

Bad — Is like naughty — Naughty

Bad — Are children bad or just naughty? — Naughty

Naughty — Can people choose to be naughty? — Choice
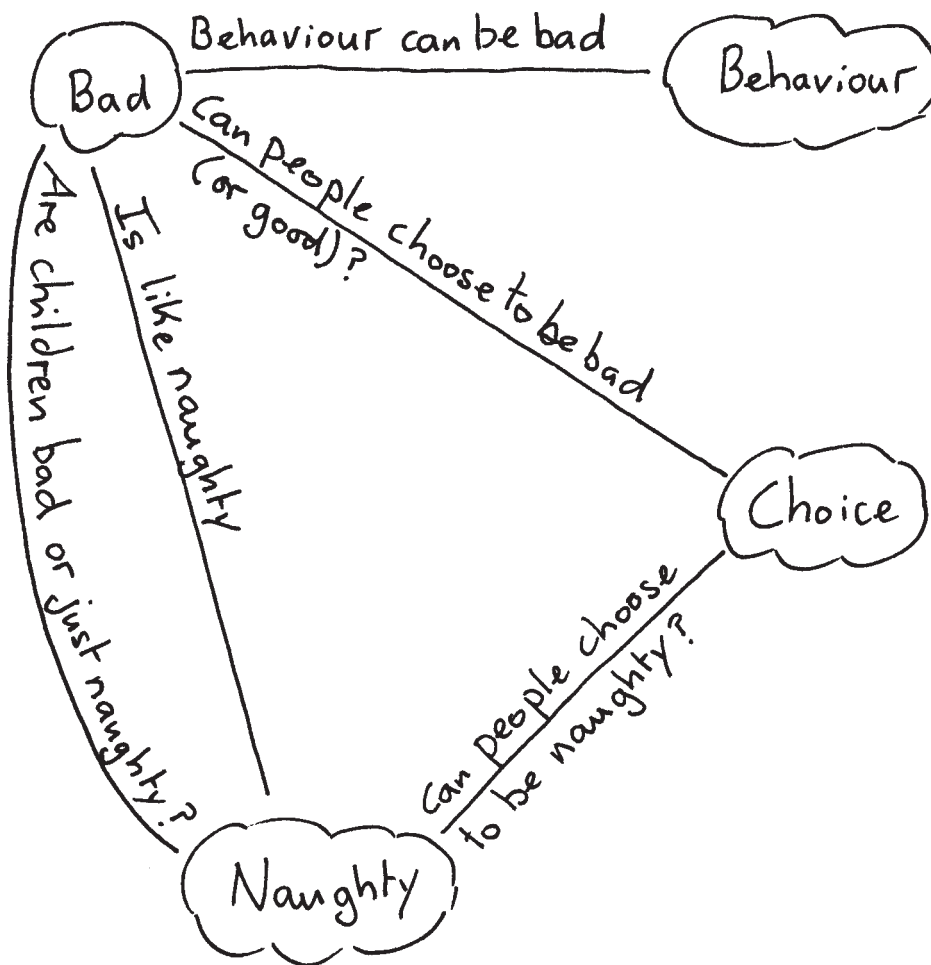
EXAMPLE 1

Concept maps close-up

EXAMPLE 2

Zooming in

Do some people
always make good
choices?

Choice

Is it possible to make
choices?

Do some people
always make bad
choices?

How do people
choose?

Zooming in

Annoying   Naughty   bad   sinful   evil

EXAMPLE 3
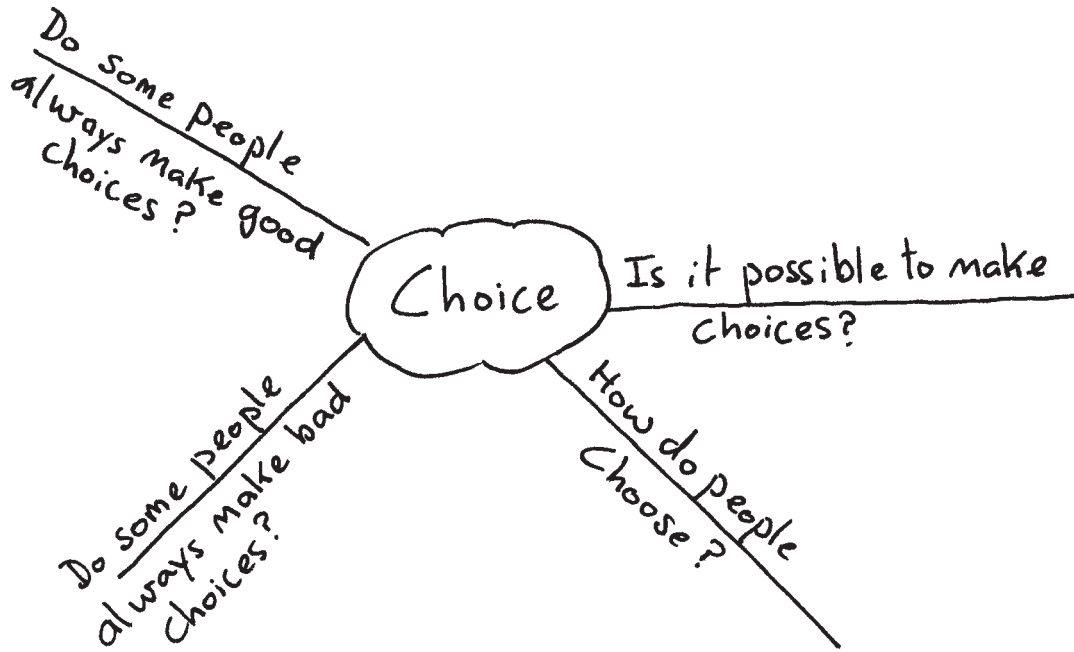
Concept maps

List of key concepts or key words	Date

Concept map

Concept maps close-up

Zooming in

Zooming in

Creating question webs

Increasing sensitivity to questions

We want children to become more expert at finding and posing questions. Creating a question web around a question is a way of making members sensitive to all the potential questions that could be implied by the original. These could be called 'questions behind the question.' So, for example, if the chosen question is, 'Should parents be allowed to hit their children?' some of the questions behind it might be: 'Are children special kinds of people?' 'Are some kinds of hitting okay?' 'What do we mean by something being allowed – is that different from it being right?'

Question webs can also be devised with the aim of creating a *Question chain* like those found in the *Philosophy club* materials.

The organiser should create some question webs using suggestions from the rest of the club members. After such sessions, members can be asked to complete this activity themselves in small groups.

Using question webs

Question webs and chains can be useful in several ways.

- They can help to widen out the discussion by tracking what are the questions behind the main question.
- They can be used as an aid to improving questions through generating a greater number of alternative questions.
- They can be used as a follow-up activity to track new thoughts after discussion.

The following pages show examples of question webs. It seems easiest to write the questions along the lines as shown.

Question web examples

What is wisdom?

Is wisdom different from cleverness?

How do we know if someone is wise?

Does wisdom exist?

Can wisdom be taught?

Can wisdom be taught to all?

Can it be taught to some?

Do wise people sometimes make bad judgements?

What are the best kinds of proof?

What things can we prove?

Is truth something you can feel or do you have to prove it?

Can we ever be sure something is true?

If most people shared the same opinion, would that make it true?

Question web

The following handwritten questions form a web:

- Should children have the same rights as adults?
- Are children special kinds of people?
- Is it wrong ever to hit anyone?
- Are some kinds of hitting okay?
- Should parents be allowed to hit their children?
- What do we mean by something being allowed? Is that different from it being right?
- How can we tell what is right?
- Who should decide what is right?

Question webs

Question web

Writing dialogues

Why dialogues?

Children like to write dialogues and are often familiar with the practice of attempting a discussion with a partner by writing and not speaking. The dynamic of the dialogue form seems to draw out responses from reluctant writers. There are other benefits for young people in writing dialogues:

- Dialogues introduce them to argumentative writing.
- Dialogues are easier and more enjoyable to write than essays.
- Dialogues encourage reflection. The act of writing is a slowing-down process. Thinking, expression and analysis can be carried on side by side.
- Dialogues provide a tool for summarising discussions without trying to resolve differences artificially.
- Dialogues encourage a more tentative approach to argument than essays.
- Dialogues encourage writers to speculate about the views of others and to actively engage with them.
- Writing a dialogue provides a text for further reading and discussion within the club.

Ways of writing dialogues

Tip. As with other *Philosophy building book* activities, it's a good idea at first for the organiser to lead the club in writing a dialogue collaboratively using a flip chart or blackboard. This enables members to get an idea of what to aim for. Such collaborative work can also lead to useful discussions on what makes a good contribution to dialogue.

Dialogues can be written in many ways depending on the experience and enthusiasm of the group. The following are just some examples:

- Follow up a discussion with a dialogue extending some of the main points. Small groups of members can write a dialogue together, taking alternate parts or discussing each part cooperatively.
- Tape a club discussion. Some members volunteer to write a dialogue to summarise the discussion. If parts of the discussion have special interest for them, they can extend those parts in dialogue form to create more depth. They can also think of characters who might take other positions than were raised in the real discussion.
- Interview another person on a topic. Use their responses as the starting point for a dialogue. Members could imagine someone having a different point of view and then make up a dialogue between that character and the interviewee.
- Write a dialogue to explore an issue, idea, problem or question. The organiser could write a snippet of dialogue to get the writing going. Individuals may wish to write a dialogue on a topic that interests them and present it to the club for consideration for a discussion stimulus.

*Mind***works**

The great learning experiment

Jo and Jim are friends. They were invited to take part in a learning experiment along with many other students. They accepted and their parents agreed. Now they no longer attend school. Instead, they learn at home with help and guidance from a Computer-TV tutor. They have email contact with other students and with the organisers of the experiment.

From: jo@mindworks.project.sch
To: jim@mindworks.project.sch
Subject: Computer teachers

Hi Jim

How are you getting on with your new teacher - the TV computer? It's the only teacher I know that does what it's told. I choose any place I like from the 'learning list' and, hey presto! teacher shows me pictures and sounds from there and says: 'I hope you enjoy your visit'. I think we can talk to people in the places we visit through the TV if we switch on at the right times.

The computer is clever. It even writes down my thoughts as I speak and then reads them back to me. Have you tried that out yet? My little sister once said, 'computers do have brains don't they Jo, only they must have hard brains and not squishy ones like humans.' What do you think about that? It's good to be able to stay at home all day. I'm just surprised mum and dad let me take part in this experiment.

From: jim@mindworks.project.sch
To: jo@mindworks.project.sch
Subject: Re: Computer teachers

Hello Jo

I know what you mean about staying at home. I can work when I like, eat when I like and I don't have to ask permission to go to the toilet. You ask if computers have brains? They do seem to remember a lot so you could say they have a memory I think. They are also very logical and can work things out like lightning.

From: jo@mindworks.project.sch
To: jim@mindworks.project.sch
Subject: How brainy are computers?

Jim

It's so nice to hear from you. I've changed my mind about the computer being clever. It does what I tell it but it can't always tell what I mean. I said to it the other day, 'I'd like to see pictures of Paris in springtime.' It said, 'There is no country called springtime. Please choose between Paris in France and Paris in America.' And whenever I don't understand something and I ask the computer what it means it says, 'what do you mean what do I mean?' Then it laughs like a mechanical Santa Claus.

From: jim@mindworks.project.sch
To: jo@mindworks.project.sch
Subject: How much freedom do we have?

Hi Jo

My computer did that phony laugh thing too. It's to do with the
'sense of humour' settings. It comes set to 'very humorous' but
I've changed mine to 'humourless'. That's strange because I
normally prefer teachers to have a sense of humour. Now, if I ask
it what it means, it just beeps and repeats what it said in the
first place. I've given up asking for explanations.

Another thing that is beginning to irritate me is that I don't
have as much freedom as I thought at first. You know when the
computer speaks in that loud, deep voice that's supposed to make
us feel full of awe and wonder. It says, 'You are now entering
the Virtual Education Zone: what would you like to learn today?'
If you choose something it doesn't have on the menu it says,
'That is not part of your programme of study. Please choose
again.' And do you know that it counts the hours you are watching
the things you are supposed to watch? At the end of the week it
prints the extra time you have to watch to catch up the following
week.' So I can eat and go to the toilet when I want but I get
spied on and I can't talk to friends or have a laugh like when we
were at school. Another thing is that ... [Message suspended.
Email privileges will be returned to Jim when he makes up his
time studying in the Virtual Education Zone]

From: mystery@mindworks.project.sch
To: all.students@mindworks.project.sch
Subject: A poem in the machine

Need a break? Do yourself a favour. Here's a poem to make you
think. I'm giving a prize for the best responses. Send them to
mystery@mindworks.project.sch

The brain is wider than the sky;
For put them side by side
The one the other will contain with ease
And you beside.

Emily Dickinson

From: jo@mindworks.project.sch
To: jim@mindworks.project.sch
Subject: Re: A poem in the machine

Hi Jim

I hope you got your email privileges back. I would be miserable
without you to talk to. Did you see that message about the poem —
the one about the brain in the sky? There's a prize for the best
responses. That's part of the mystery. I thought that the Virtual
Education Zone was meant to make learning fun without prizes.
Maybe they are having second thoughts. I looked for information
on Emily Dickinson in my own time. Do you know she wrote the poem
over a hundred years ago? Do send me a message if you can.

From: jim@mindworks.project.sch
To: jo@mindworks.project.sch
Subject: Re: Re: A poem in the machine

Jo

I'm back. I had to watch the TV computer for 8 hours a day last week so I'd be allowed to post emails again. I saw the poem all right. I don't know who it's from but I'm going to send in a response. It will be a picture: brains inside skies inside brains inside skies. The skies will be stormy. I'm going to call the picture 'Blowing your mind.' Would you like to meet up for a swim tomorrow? (We might be learning at home but we're not prisoners.) We can talk more about the poem. Amy and Paul are coming. See you there I hope.

From: jo@mindworks.project.sch
To: jim@mindworks.project.sch
Subject: Re: A poem in the machine

Swimming – I'd love to come. I'm going to enter for the poem prize too. We talked about the poem at home. I asked my mum and dad how the brain can contain the sky and how it can contain me. My dad said he didn't think his brain could contain the sky, only his mind. My mum didn't think of the mind as a container at all. She thought it was more like a mirror that reflects the sky. I think that even if my mind is a mirror, I am more than just a mirror. I'm like a painter in my mind.

Anyway, I'm going to send in a poem as my response. Here it is:

My mind's still greater than TV
For put them face to face
The one the other can embrace
The other couldn't care less

We can talk about it more in the cafe after our swim.

From: administrator@mindworks.project.sch
To: all.students@mindworks.project.sch
Subject: Re: A poem in the machine

Students should know that the message called 'A poem in the machine' is not an official part of the Virtual Education Zone programme of study. We are investigating who sent it. Until then, we advise you not to send in entries to the competition mentioned in that message. We do not know if there really is any prize and we don't want our students to be disappointed.

Check out the Virtual Learning Zone NOW! It's COOL!

Hidden gold

Feeling at home and feeling isolated

1. When you get back home from school or holiday, what things in particular make you feel at home?

2. Does the feeling of being at home wear off quickly, does it stay with you, or does it come and go? Give examples.

3. Can you feel *at home* even if you are not physically at home? If so, *when* and *how*?

4. Can you feel isolated at home? If so, can you feel isolated at home even when you have company? Explain.

5. When you go somewhere new and unfamiliar, what sorts of things make you feel isolated there?

6. When you look up at the millions of stars, do you feel isolated then? If so, isolated from what?

Travelling and visiting

1. There is a saying, 'It is better to travel than to arrive'. Can you make any sense of this?

2. Would you prefer to watch a concert (or, say, a sports event) on TV, or *live*? If live, would getting there be part of your pleasure, or would it depend on how far it was, and other things? (What things?)

3. Have you been on a *virtual* journey, say on a theme park ride, or in a computer game? Did it feel as if it were a real journey? What differences and similarities were there with real journeys? What were the good and bad points?

4. If you could pay a virtual visit to Paris, say, or Rome, with 3D pictures and recorded sounds and commentary, would you feel there were important things missing from the experience? If so, what?

5. Some people say that the whole of life is like a journey. Do you agree? If so, how can you make your own journey more enjoyable?

Another train of enquiry arising out this last question focuses on the idea of *likeness*. Try to list in what ways lives and journeys are alike, and in what ways they are not. Then a wider question comes up: how alike do two things have to be before you say that one is *like* the other?

Technology and control	1. The word *technology* comes from the Greek word *techne* meaning *skill*. Nowadays it is more often thought of as meaning 'modern machines and methods of production'. Can you see any connection between the two meanings?
	2. Can you make a list of the sort of machines that are thought to be ultra-modern or hi-tech? How many of them require human skill to operate them? Give examples.
	3. Can machines be skilful at doing some things without humans to operate them?
	4. Can machines do some things better than humans? If so, does that mean they are more skilful at those things than humans?
	5. What sort of things do machines control?
	6. Are there things machines shouldn't be able to control?
	7. Do you think that soon machines will be able to do almost anything humans want them to do? If so, how will they be controlled?
First thoughts and second thoughts	1. What is the first thought that comes into your mind when you think about 'first thoughts?' (Was that really your first thought?) How does it compare with everybody else's first thought?
	2. Are first thoughts like instant reactions, *ie* like unconscious reflexes? If so, do they arise out of *gut* feelings, or out of habits of thought, or something else?
	3. What exactly do we mean by *gut* feeling?
	4. (How) do we know when our *first* thoughts are over and our *second* thoughts have started?
	5. We often say 'on second thoughts' when we change our mind. Do we always change our minds when we think *twice*?
Humour and laughter	1. Why do people laugh? (Think of more than one answer.)
	2. Animals do not seem to laugh. Does that mean they have nothing to laugh at or that they just don't have any sense of humour?
	3. Could computers ever have a sense of humour?
	4. Could people of different cultures find different sorts of things funny? If so, why?
	5. Are there some things that everyone might find funny? Give examples.
	6. Would life be worth living if we found nothing to laugh about?

Question chains

What makes something interesting?

1. Does it make sense to say: 'I'm hungry but I'm not interested in food?'

2. Can a person find food interesting without being hungry?

3. Are any things interesting for everyone? Are any things uninteresting for everyone?

4. What makes anything interesting to someone? Give examples.

5. What is it about some people (*eg* rock stars or royalty) that makes them interesting to a lot of people?

6. Could it be that everybody has their story – and that everybody's story is equally interesting?

7. Can you remember any things that have specially interested you today? Can you say what exactly captured your interest about them? Is there any common ingredient to all these interests?

8. Could a video about your favourite subject turn out to be uninteresting? Could a video about a subject you thought dull turn out to be very interesting?

9. When does something that interests you become something you would call *an interest*?

10. When does an interest become something you would call 'an obsession'?

Can learning be fun without prizes?

1. Humans learn a lot before they learn to speak. Do they decide to learn these things, or is it all so natural that they don't have to try very hard?

2. At what age do you remember having to try hard to learn? What sort of learning was it?

3. Is it more natural to learn some things than others?

4. When learning is difficult, what keeps you going?

5. If something is difficult to learn but you succeed in learning it, do you feel as if the success is a reward for your efforts?

6. Suppose you worked hard to learn but found that no one valued your efforts. Would you think, 'why did I bother?'

7. Do you think parents who give extra rewards to their children for passing exams are right to do so?

8. Are there times when prizes might be good for learning?

9. Would you agree that the day you stop learning is the day you stop living?

Is saying what you mean the same as meaning what you say?

1. If event A is happening at the same time as event B, must event B be happening at the same time as event A?

2. Is breathing when you sleep the same as sleeping when you breathe? If not, why not?

3. Is crying if you're hurt the same as hurting if you cry? If not, is the reason the same as in question 2?

4. Is liking what you get the same as getting what you like? Is your reasoning the same as in question 2?

5. Can you give examples where it makes sense to say, 'I didn't mean what I said?'

6. Can you give examples where it makes sense to say, 'I didn't say what I meant?'

7. Can you give examples when saying what you mean is the same as meaning what you say?

8. When you say something, is the meaning of what you say inside your head, or is it in the words that you say, or is it in the head of anyone who gets your meaning?

Can people be curious without also being bored?

1. What are some of the reasons that people get bored?

2. What connections does boredom have with time?

3. Does everyone get bored at some time?

4. Do animals get bored?

5. Is boredom a physical feeling or a mental one?

6. How do people escape from being bored?

7. Is being curious the opposite of being bored?

8. What connections are there between being bored and being curious?

9. Is curiosity a way of escaping boredom?

10. Is curiosity possible without boredom? If so, does that mean that boredom is a good thing?

Games

Making interests through questions

Most of us find some objects more interesting than others. For some people it may be works of art; for others, gadgets; for others, some peculiar product of nature, and so on. But perhaps a lot of ordinary objects could become interesting to us if we thought about them for a while, and began asking questions, such as 'where was it made?' or 'how old is it?' or 'why is it painted that colour?' The aim of this game is to increase interest or curiosity i*n any old thing* by developing the habit of asking questions.

Procedure

Two or three objects are chosen more or less by chance from the room, and placed in the middle of the circle. They should be big enough to be easily seen by all the members. Each member then makes lists of as many questions as they can think up about the objects. After a given period of time, say 5 minutes, the person with the longest list for each object is asked to read out their questions. Others are invited to comment on which were the most interesting questions – and if anyone feels they have come up with a more interesting question, they should be given a chance to persuade the group that their question is indeed more interesting.

Back to front

This is a quick-thinking game in which there are no individual winners, but the members work together to try and improve their performance as a group. The performance is timed to be one or two minutes, as agreed after a practice round of just one minute.

Procedure

Once the timer is started, anyone can call out a sentence beginning with the word *some* – for example, 'some doctors are women', or 'some insects have claws'. For the game to work, there has to be a plural noun of some sort in the last half of the sentence, which can then be brought to the front of the next sentence. For example, 'some doctors are women' can be followed by 'some women drive cars', and then cars must come to the front so that the next sentence starts 'some cars...' But 'some women are beautiful' will not work, because you can't start a sentence with 'some beautifuls...' The aim is for the group to make as many sentences as they can within the time allowed, and then to play the game a few more times to see if they can beat their record. Obviously someone, perhaps the timer, must be responsible for recording numbers of sentences.

Note Apart from encouraging quick thinking, this game is also useful in preparing the ground for the section on logic where the difference between whole class statements (beginning *All...*) and part-class statements (beginning *Some...*) is examined and developed.

The group may vary the rules of the game to suit. For example, it might be decided to go round the group, giving everyone a turn at calling the next sentence, instead of allowing a free-for-all. Or you could say that no one can follow their own sentence nor, perhaps, the one after theirs: this would ensure that more people are involved and not just the quickest thinkers.

Not so trivial pursuits

Trivial Pursuits was the name given to a general knowledge board game some years ago. It was very fashionable in its day, and of course to this day most quiz shows continue to be tests of general knowledge. This game is a sort of *DIY Trivial Pursuit*s, but with a little more emphasis on creativity and using one's judgement.

Procedure

Note The whole process begs the question: How much do individuals know – or need to know - about the important pursuits or areas of human life? This is a question that could certainly be returned to whole group discussion at the end.

1. Decide on the number of groups with 3 to 5 in each group

2. Discuss and decide on the categories of *Not-so-trivial pursuits*. There should be one for each group. The discussion should proceed on the basis that an extraterrestrial has enquired what pursuits or activities human beings regard as being the least trivial (*ie* most important) for their species. Some might say Nursing, for example, or Scientific Research; others might say Comedy Writing, or perhaps Working for the UN. It is for the group to make its own judgement in this matter.

3. The groups take one category each. Their task then is to draw up a list of 10 or 20 general knowledge questions within their category, to be put to the whole group orally, or to be passed around the groups for written answers. No specialist knowledge nor reference books are needed for creating the questions – the idea is for the group members to pool such knowledge as they have. No group should ask a question to which none of them knows the answer.

Activities

Distinguishing interests

Most commonly, an interest is something that a person is interested in. It is different to say that something is *in a person's interest*. Here, we mean that it is to their advantage – that it is a good thing for that person. Sometimes a person may have an interest in something and it may be in their interest, like finding something to eat. Sometimes a thing may be in a person's interest, but they have no interest in it at all, like learning to cook.

Procedure

Tick the appropriate columns of the following table. When you have finished, compare your ticks with your neighbour's. Prepare yourselves to speak to the whole group about the differences, and especially where one or both of you were not sure.

Activities	Interests you	Is in your interest	Not sure
Playing sport			
Watching TV sport			
Watching live sport			
Walking			
Talking			
Listening to adults			
Eating greens			
Reading comics			
Reading Shakespeare			
Watching violent films			
Going to school			
Going shopping			
Going to the dentist			
Public speaking			

How could the computer-teacher keep a check on Jim?

In the story, Jim says that he had to watch TV for 8 hours so he would be allowed to send email again. How do you think the computer would be able to check the following things and how would the checking work?

1. That he was watching TV
2. That he was concentrating on what he was watching
3. That he had learned something

Focus on thinking and feeling

Introduction

One of the main ideas in the story is that however clever machines may be at computing – doing sums, checking spelling, making pictures, even putting words together – they may never be able to think in the way that human beings think. Or even if they could think in some similar way, they could never feel and care the way humans do. In one way this is a simple idea, and quite an attractive one. Maybe we don't want machines to be too like us, because we don't want to be too much like machines.

But, looked at more closely, it is a rather complicated idea. It raises deep questions of what it is to think like a human and to be a human. It leads us to wonder exactly what feelings are, and how they affect the way we are and the way we think.

Question Chain

What is thinking?

1. Can you hear a sound without thinking about it? (If you think so, are you sure you are hearing it?)

2. Can you notice anything without thinking about it?

3. When you have noticed something, can you stop noticing it, but keep thinking about it?

4. Is the thinking involved in planning your route to the shops the same as the thinking involved in remembering that route to the shops?

5. Is the thinking involved in deciding to go to the shops the same as the thinking involved in planning your route to the shops?

6. Is the thinking involved in deciding to do something the same as the thinking involved in wanting to do it?

7. Are some sorts of thinking harder than other sorts? (If so, can you give examples?)

8. Do you find it easier to think silently, or to think aloud?

9. Do you mostly think of what to say before saying it, or as you say it?

10. Do you mostly think of what to do before doing it, or as you do it?

11. Is most of your thinking made up of words, pictures, or other things?

Activity *Celebrating the different powers of your mind*

Many people believe that the ability to think well depends on intelligence, and that intelligence is a sort of brainpower. But that may be misleading. It makes it seem as if intelligence is rather like *horsepower* – a single driving force that could easily be measured. Of course, Shakespeare or Einstein, for examples, were in some senses more intelligent than others. But it was only quite recently that people began to question whether they were intelligent in the same way. Could Shakespeare's brain have been good at using words, but not so good at using numbers? And could Einstein's brain have worked better the other way round? It is possible.

In 1983 an American professor, Howard Gardner, published a book called *Frames of Mind: a Theory of Multiple Intelligence*. He argued that there were 7 key *intelligences* or powers of the brain that were applied in different areas of activity. Intelligence with words was one of them, and intelligence with numbers was another.

Procedure Break into small groups and discuss the different kinds of activities that you are interested in or good at – for example, playing games or instruments – and see if you can agree on any other powers of the mind apart from skill with words and numbers. When every group has agreed on its list, compare all the lists. Also compare them with Professor Gardner's list, which is shown below.

Professor Gardner's 7 Key 'Intelligences'

- Linguistic (using language/words)
- Logical (figuring things out, including numbers)
- Visual/spatial (shaping, and relating to, objects)
- Kinaesthetic (moving around)
- Musical (creating sounds and rhythms)
- Interpersonal (getting on with people)
- Intrapersonal (understanding oneself)

Conclusion It is important to realise that there is no perfect list of intelligences. There is disagreement, for example, whether we have just a single intelligence for language, or more than one. But by this reasoning we could end up saying that there is a different intelligence needed for almost any task we do. As it happens, Professor Gardner has added to his own list over the years and now reckons there may be about 20 key intelligences.

Another writer, Daniel Goleman, has argued that Gardner's categories of the *interpersonal* and *intrapersonal* both involve another sort of intelligence that he calls *emotional intelligence*. Goleman believes that getting on with other people involves being sensitive to their emotions or feelings, whilst understanding yourself also involves being aware of emotions, and knowing how to handle them.

Game

Getting steamed up

The expression *getting steamed up* is one of a number of metaphors (*ie* ways of talking about one thing using language appropriate to another) that are used for feelings or emotions. *Getting the butterflies* is another obvious one, and *flying off the handle* is particularly vivid. Humans seem good at finding parallels or similarities between their feelings and the events or objects outside themselves. This game seeks to find new parallels or similarities, challenging the creative thinking of learners.

Procedure

1. Everyone works together on a brainstorm, aiming to list 10 feelings or emotions.

2. Two groups are formed which aim to come up with a matching object or event for each of the feelings or emotions on the board. Any member in each group may suggest a match, but must be able to persuade all the group that it is a good enough match, *ie* that there is a reasonable parallel or similarity. For example, if the emotion is *hatred* a matching object might be *coal*, and the reason might be that coal is cold and hard, which is how you may feel when you hate someone.

Note The aim is to match emotions with objects or events that are like them, not with ones that might cause them. So, for example, if the emotion is 'fear', 'tiger' is not a good match since it has no obvious similarity with the emotion.

3. One member of each group should be responsible for writing their matched list on paper, and when both groups have completed their lists they then compare results as in step 4.

4. The scribe in each group calls out one of the objects or events on their list, and the opposite group then has a couple of minutes to discuss and decide which feeling or emotion they think it is matched with. They score a point if they make a correct guess. (If they make an incorrect guess, the other group does not have to reveal which of the feelings or emotions the object was matched with on their list.)

5. This process continues until all 10 objects or events have been called out and paired.

Ending the game

The side with the most points at the end wins. The organiser should then write the matches onto the board, inviting someone from each group to explain the reasoning behind each match. The other group, of course, may at this time feel slightly aggrieved, thinking that the reasoning was rather weak or obscure. They may, if they choose, make an appeal in any particular case – putting the onus on the organiser, or some other neutral person, to make a judgement. If the appeal is upheld, the group appealing gains a point and the other group loses one; but if it is not upheld, the reverse applies. Whatever the case, both sides should be encouraged not to get steamed up about the verdict!

Question chain *Do we always know what we are feeling?*

1. If you wear a watch for a long time, do you stop feeling it? Why or why not?

2. Can you have an itch without feeling you have an itch?

3. Could you scratch an itch without realising that you were scratching it? If so, could you feel an itch without realising that you feel it?

4. Could a toddler realise that it has an itch but not realise that it is called an itch?

5. Do you think itches are there waiting to be noticed, or do you think they only exist when they are noticed?

6. Do you think a feeling, such as sadness, is there waiting to be noticed, or do you think it only exists when it is noticed?

7. Do you think all feelings are either pleasant or unpleasant, but never neutral? Think of examples.

8. Could you have an uncomfortable feeling without knowing what has made you uncomfortable?

9. If you could say what made you uncomfortable, would you then be able to put a name to your feeling?

10. Does putting a name to your feeling make you feel you know better what you are feeling?

11. Could you put a wrong name to a feeling and so think you know what you are feeling when perhaps you do not?

12. Do you think every feeling has a name?

Question chain *What is the difference between a feeling and an emotion?*

1. What makes a plain feeling (such as a tickle) a feeling, and not an emotion?

2. Is pain a feeling or an emotion? Explain.

3. Are emotions (such as anger or love) always accompanied by feelings?

4. Are emotions just specially strong feelings, or is there more to them than just feeling?

5. Can you agree on a definition of emotions?

6. Can computers have feelings or emotions? Explain.

Activity	*How many different emotions do we recognise?*

1. In small groups, begin to make a list of as many different emotions as you can. Try not to let other groups hear your ideas. (Don't forget to consider what emotions you are all feeling at the moment! Would they be different if there were a prize for the longest list?)

2. Share the lists with the whole group so all can see.

3. See if there are any families of emotions, *ie* ones that seem related to each other. (Could you give a title to the family, or agree on a 'head' of the family?)

4. See if you can arrange the emotions on a scale between those that tend to last a short while, and those that tend to linger. (If an emotion tends to linger, does it become a mood? Could it even become part of a person's character?)

5. Finally, go back into small groups to discuss whether it is possible to recognise an emotion if there is no word for it. After a few minutes, groups can share their conclusions with each other.

Question chain	*Do your thoughts drive your emotions or your emotions drive your thoughts?*

1. Is it possible to think of someone or something and feel angry at the thought? If so, try to give examples.

2. Is it possible to think of someone or something and feel happy at the thought? If so, try to give examples. (Is it easier or more difficult than for anger?)

3. Is it possible to feel angry about something and to find that you cannot think of anything else? Give examples.

4. Is it possible to feel happy about something and to find that you cannot think of anything else? Give examples.

5. Is it easier to direct your thoughts when you are happy or when you are sad? Why?

6. How much of the time are you feeling an emotion?

7. Whatever emotion you are feeling, does it always affect your thinking?

8. How much of the time are you thinking?

9. Whatever you are thinking, does it always stir some emotion?

10. Could everything you say or do be an expression of some emotion?

Game

Getting into other people's minds

A 10 year old who was discussing whether mind-reading was really possible came up with the following question: 'How could you tell if someone else were reading your mind unless you could read theirs in the first place?' What do you think of that?

Another person then asked: 'But if you were reading someone else's mind, how would you actually know you were?' Can you answer that?

Yet another person might ask: 'And even if you did know, exactly whose mind would be knowing?'

The following game may be the closest most of us get to knowing what is in another person's mind without either reading or being told it. The game has traditionally been known as *Twenty Questions* or *Animal, Vegetable or Mineral*. The idea is to practise the skills of questioning so as to deduce or work out what another person is thinking of.

Procedure

One member thinks of some thing and begins by telling everyone else whether it is Animal, Vegetable, Mineral or Abstract. (Animal is the label for anything that is alive but not rooted to the ground. Vegetable is for anything alive and rooted. Mineral is for anything that can be touched but is not alive. And Abstract is for things that do not fall into any of these categories – things that cannot be touched, such as silence, love or running.)

Note Anyone who gets a correct answer may very well be pleased with themselves because the chances are that this was not the result of a pure guess: they will have reasoned their way towards the answer. It might be worth asking them, each time, to unpack their thinking, rather like Sherlock Holmes does in the stories, so as to give themselves and others practice in open reasoning.

Other members then ask questions of a sort that require either *yes* or *no* for an answer. An honest answer must always be given. Every question should be designed to get more useful information about the thing in the member's mind, so that eventually someone can put two and two together and deduce what that thing is. If 20 questions have been asked and the thing is still not named correctly, it is normally revealed, and another round begins.

Activity

Thinking more about uses of the word 'mind'

Write down a range of phrases or short sentences containing the word mind – such as 'mind the gap!' and 'do you mind?' You can use variations of the word, too, as in 'she was minding the baby.' The more examples members can come up with, the better.

1. See if the uses of the word fall into different families of meaning, *eg* by replacing *mind* with alternative words that seem to have the same meaning.

2. In particular, see in how many cases the word *mind* can be sensibly replaced by the word *brain*. Minding the baby is definitely not such a case!

After this exercise it should be clear that the word *mind* has many different uses. But there could still be a central meaning, that all or most of these are related to. See if you can agree on such a meaning – a sort of general definition of *mind*.

Question chain

Are all our thoughts our own?

1. What reasons do we have for thinking that other people have experiences like our own?

2. What reasons do we have for thinking that other people have feelings like our own?

3. What reasons do we have for thinking that other people have thoughts like our own?

4. If one person says, 'That's an oak tree', and another person says, 'I agree', do they have exactly the same thought?

5. If two people are looking at the same oak tree, do they have exactly the same experience?

6. When you do think in words, how many of the words are ones that you learnt from other people?

7. Do you make up all your own sentences, or do you rely on remembering sentences that other people have taught you?

8. If you say a sentence without realising that someone else has already spoken it, is it your sentence, or theirs? or does it belong to both of you? or neither?

9. If you are influenced in your decision or ideas by another person, can those decisions or ideas still be your own?

10. If you can think for yourself, is it always a good idea?

Question chain

Could computers have thoughts and feelings?

1. Should we call something made of silicon chips in a computer a brain?

2. If a computer can do things in a logical way, should we say that it is logical?

3. Could a computer have thoughts?

4. Could a computer think?

5. Should we say that computers have minds?

6. A computer is said to have memory. What are the differences and similarities between computer memory and human memory?

7. If something has a memory, does it have a mind?

8. Could a computer appear to have feelings? How?

9. Could a computer really have feelings? How?

THE
Philosophy
F I L E S

Knowing yourself

Starting points	Digging deeper

The Romans used to have an expression: 'Mens sana in corpore sano', which translates into: 'A healthy mind in a healthy body'. People spend a lot of time trying to keep their bodies fit. Do they think very often about keeping their minds fit and healthy?

1. In small groups, make a list of tasks or exercises that children do in school that may be thought to keep their minds fit and healthy. Can you add some practices of your own from outside school? Explain your ideas to others in the group.

2. In small groups again, make a list of things about school or home that are not healthy for people's minds. (This could include things like bullying.)

3. At the end, lists should be compared – and some conclusions drawn.

Rene Descartes (1596 - 1650) was a mathematician and philosopher. The sort of graphs that you see in books and on TV were his invention. His most famous saying was: 'I think, therefore I am.' He took this to be the most basic idea he could be sure of. He went on to ask: 'But what, then, am I? A thing that thinks. What is that?'

1. Do you think animals know that they exist? If so, do they know they exist in the same way that humans do?

2. How many of your memories could you afford to lose before you forgot who you were?

3. If you forgot everything that happened to you in the past, would you still see and hear things just the same?

4. If you were trying to describe the self that you know to other people would you begin with your past memories, your present character or your future hopes?

John Locke (1632 - 1704) said: 'Suppose the mind to be, as we say, white paper, void of all characters without any ideas.' Then the question was, how do humans get into a position to think or know things at all? Locke said: 'To this I answer, in one word, experience' – *ie* the experience of our senses.

1. What, if anything, can you remember of your experiences as a baby?

2. Can you imagine what it would be like to be without a sense of touch (including pressure)? Does that sense tell you more about the 'real' world than the sense of sight?

3. When you are thinking in words, how do the words come to your mind, as sights or as sounds? Is the thought that 2 + 2 = 4 a picture for you, or a sound? Do you know it is true because of what your senses tell you or because of what your common sense tells you?

Starting points	Digging deeper

Immanuel Kant (1724 - 1804): agreed that memory must be an important part of the 'thing that thinks' but thought that it cannot tell the whole story of *the self*. Memories are just 'replays' of sensory experiences, and sometimes only pale imitations of them. 'The senses,' he said, 'can think nothing.' To go beyond the sort of knowledge that other animals have, we humans exercise 'understanding' – without which no object would be thought. But 200 years later we still do not quite understand how understanding works!

1. Do you know when you don't understand something? If so, how do you know?

2. How do you know when you do understand something? And how do you feel then?

3. Do newborn babies understand anything?

4. Do you have to think in words before you can be said to understand anything?

4. Is understanding just the capacity to use language effectively?

5. Can computers understand anything?

*Knowledge***works**

The science of Louis Pasteur

Part one

Enquirers
Paul
Gulnaz
Daniel
Kerrie
Laura
Barry

Narrators
Narrator 1
Narrator 2

Scientists
Louis Pasteur
Max Von Pettenkofer

Narrator 1. Louis Pasteur was a scientist who lived in France more than a hundred years ago. At that time, a disease called anthrax was killing a lot of farm animals.

Narrator 2. Deaths of sheep from anthrax were costing French farmers £100,000 a year. Farmers feared they would catch the disease too. Some humans had died from anthrax.

Narrator 1. It was caused by bacteria. They multiplied very quickly if they got into the blood stream through a cut or a scratch. A few hours after the disease took hold, millions of bacteria turned the blood black. They caused death by blocking an artery or vein.

Narrator 2. At that time, Pasteur was studying another disease called chicken cholera. He was injecting hens with different vaccines and then injecting them with cholera bacteria. None of his vaccines worked. All the hens died.

Narrator 1. One day some of his cholera bacteria were left in the open air. When he injected hens with these, they didn't die. Pasteur thought:

Louis Pasteur. Leaving the cholera bacteria in the open must have weakened them in some way. The strange thing is that when I injected the same hens again with strong cholera, they survived. I wonder … does a weakened dose of a disease work as a vaccine against a stronger one. No hens have survived a strong dose before. This is the first time it has happened. There must be a reason.

Narrator 2. He set to work on finding a vaccine for anthrax by leaving anthrax germs in the open air to weaken them.

Narrator 1. On May fifth 1881 a famous experiment took place to prove or disprove Pasteur's theory. A huge crowd came to watch.

Louis Pasteur. Ladies and gentlemen, I have been given 60 sheep. I have vaccinated 25 sheep with my weakened dose of anthrax. I will re-vaccinate them 12 days from now. Two weeks after that, they will be injected with a strong dose of anthrax. Another 25 unvaccinated sheep will also be given a strong dose of anthrax. 10 sheep will be left alone. I predict that the vaccinated sheep will still be alive 30 days from now.

Narrator 2. The crowd came back on June the second. Pasteur was proved right. Every one of the unvaccinated sheep was dead or dying. Every one of the vaccinated sheep was alive and well. So were the untouched animals.

Narrator 1. Pasteur was a hero. That day marked the beginning of the end for many infectious diseases that had killed so many people in the past.

Paul. How could Pasteur know for sure that he'd found the right vaccine after trying it on only 25 sheep?

Laura. What do you mean?

Paul. Well, imagine if a big bin suddenly appeared on the school field. Because I'm brave I get to the bin first. I reach into the bin and pick out 25 things. They are all chocolate bars.

Daniel. Is this a dream you have every night or something?

Paul. Listen! The first 25 things are chocolate bars. How do I know the 26th thing won't be something else – even a bomb? How did Pasteur know that 25 sheep would be enough to test his vaccine?

Gulnaz. But this is different. No sheep had ever survived anthrax before and there must have been thousands of deaths. The vaccinated sheep all survived.

Daniel. Yes, and every one of the other sheep who'd been injected with anthrax germs died. There's not much chance of that happening for no reason.

Kerrie. It fitted in with Pasteur's theory too. He could explain why it happened that way.

Louis Pasteur. You are right my friends, making discoveries in science is about having theories and then finding out whether things really happen that way. It's also about looking at something that happens and trying to think of a theory that explains it. It works both ways. But you ask interesting questions. Were 25 sheep enough to prove my theory? Make up your own minds. But imagine what it was like trying to persuade a farmer that I could stop his sheep getting anthrax by injecting them with anthrax. I was lucky to get any sheep to work on. But I was famous and that always helps.

Max Von Pettenkofer. Can I say something Louis?

Kerrie. Who are you?

Max Von Pettenkofer. Max Von Pettenkofer – a German scientist. I lived at the same time as Louis Pasteur.

Louis Pasteur. Max didn't believe that bacteria caused disease. He even drank a glass of water full of cholera bacteria to show his faith.

Max Von Pettenkofer. And I survived. Doesn't that prove something?

Louis Pasteur. It proves you were very lucky. Haven't you kept in touch with the world since you died Max? Scientists agree that bacteria and other kinds of germs do cause diseases. Vaccines can help to stop diseases spreading.

Max Von Pettenkofer. I was wrong in some ways, but in some ways I was right. It depends what we mean by that word 'cause'. Why don't you tell them about the worms Louis and why one field was deadly to sheep but another was harmless.

Louis Pasteur. What are you getting at Max?

Max Von Pettenkofer. Let's hear the story. Then I'll explain.

Louis Pasteur. One day I was walking in a field of sheep. I noticed that the ground in one part of the field was a different colour to the rest. As I got closer, I noticed lots of worm casts – the soil worms push out as they tunnel along. I asked the farmer about this and he told me a few of his sheep had died of anthrax. He buried them in the field. I guessed that the worms had been feeding off the dead sheep. They brought the anthrax bacteria to the surface and the live sheep ate grass with the bacteria on it. But the anthrax could have been passed on in other ways. Sheep with cuts and scratches sometimes rubbed against other sheep with the disease.

Max Von Pettenkofer. So was anthrax caused by the bacteria or by the farmer burying the dead sheep in the field or both? And did the farmer keep his sheep healthy enough? What do your young friends think?

Paul. A cause always comes just before the thing it causes. The bacteria getting into the sheep was the last thing to happen before they got ill so I think the bacteria is the cause.

Kerrie. But if the farmer hadn't buried the dead sheep with anthrax in the same field, the anthrax might not have spread. That set off the chain of events that got the anthrax into all the live sheep.

Gulnaz. Maybe there are more causes than one. These could both be causes in different ways.

Barry. Grass is the cause. It wouldn't have happened without grass.

Kerrie. Barry, what do you mean?

Barry. If there wasn't grass, the sheep wouldn't have eaten it – so no deadly bacteria.

Kerrie. They would just have died of starvation.

Gulnaz. Anyway, all sheep eat grass but not all sheep get anthrax. I think a cause must be something that doesn't happen all the time.

Louis Pasteur. We could go on saying it couldn't have happened except for this or that but the thing is it did. We needed a quick way to stop the disease spreading. Our methods worked. They've worked for many other diseases too.

Max Von Pettenkofer. You'll never get rid of all the germs in the world Louis. And even you have to admit that some vaccines don't work very well. There are other ways to stop germs spreading – by taking better care of ourselves and our animals. When people are able to keep clean and well-fed we see less disease; when they aren't we see more. We also know that healthy people and healthy animals can survive serious diseases – like I survived my drink of cholera. So in a way I was proved right.

Louis Pasteur. I agree Max, but we still need vaccines for times when things go wrong, and for people who are not strong and healthy.

Max Von Pettenkofer. Maybe you are right. But at least our young friends have plenty to think and ask questions about.

Louis Pasteur. That's one thing we all have in common. We always liked to ask questions, and asking good questions is the way to make discoveries. That will never change.

Part two

Enquirers
Paul
Gulnaz
Daniel
Kerrie
Laura
Barry
Tom

Scientist
Louis Pasteur

Paul. We've been asking Louis Pasteur, the famous scientist, how he discovered a vaccine for anthrax.

Laura. I'd like to ask Mr. Pasteur a different kind of question.

Louis Pasteur. What is that?

Laura. (To Pasteur) Wasn't it wrong for you to inject all those poor sheep with that terrible disease?

Paul. No way!

Laura. I was asking Mr. Pasteur!

Louis Pasteur. I'd like to hear what you think ... what you all think.

Paul. His discovery saved a lot of lives.

Laura. Yes. By killing lots of sheep!

Paul. Pasteur saved lives. He even saved sheeps' lives. Saving the lives of animals is a good thing isn't it? What about the thousands of sheep that were dying of anthrax. Only the vaccinated sheep survived in his experiment. Remember?

Laura. But so did the ones he left alone. The ones that died only died because he injected them with germs. That's just wrong.

Louis Pasteur. Before you go on, I'd better tell you about the Australian rabbits.

Paul. What rabbits?

Louis Pasteur. Listen, and then see what you think about me saving animals' lives. Europeans started to make homes in Australia over a hundred years ago. There were no rabbits in Australia at the time but one man brought them to his farm from Europe. Rabbits liked Australia, but Australia didn't like the rabbits. You see rabbits have lots of babies very often. In twenty years, there were millions of rabbits. They ate farmers' crops and the grass meant for cows and sheep.

Barry. What did the farmers do?

Louis Pasteur. I was invited to go to Australia and kill all the rabbits using the chicken cholera bacteria I had been working with.

Laura. What? That's horrible.

Louis Pasteur. Well, that's part of what I want to say. Farmers owned animals like any other property and they protected their property. To do that they

sometimes had to kill other animals. It might seem horrible to you now Laura but it wasn't thought so then. The way we think about what things are right and wrong can change with the times.

Laura. I think that is wrong and has always been wrong.

Paul. What happened, did all the rabbits die?

Louis Pasteur. No, the Australians didn't believe the chicken cholera would work. I returned to France. The problem with rabbits got worse and in 1950 another disease, myxomatosis, was used to kill very many of them.

Laura. So they were murdered.

Paul. Hang on Laura. Last year there was an ants' nest under our house. Every morning our kitchen was crawling with ants. They were trying to get at our food. We put poison down and the ants disappeared. Does that make us murderers?

Laura. I don't know.

Barry. Laura likes cuddly bunny wabbits. Ants aren't so pwitty.

Laura. Shut up Barry.

Louis Pasteur. I worked on saving sheep in France and killing rabbits in Australia. I did the best job I could and I thought both jobs helped people. It's up to people at the time to decide what they think animals are for and how they should be treated. Scientists don't make all the decisions about things like that.

Barry. I don't think things have changed much since Pasteur's time. Animals are there for humans. Pets are there to keep us company. Sheep are raised to give us food and wool. That's their purpose in life.

Laura. What do you mean by purpose?

Barry. I suppose a purpose is how something is used.

Gulnaz. And do people have a purpose or only animals?

Tom. I think we do but we don't know what it is.

Barry. Isn't our purpose what we do, like my dad's a mechanic and my mum works in the supermarket. My aunty looks after her kids. Giving wool and being eaten is what sheep do.

Daniel. My dad's unemployed, what's his purpose then?

Paul. I'm not sure we can say we have a purpose, and if we do, it's got to be more than just what we get paid for. My dad is always saying he hates his job, but he's a good dad; he makes me laugh.

Kerrie. I agree. Your dad's purpose isn't just what use he is to his boss. If we only think of what use people are to us, we aren't treating them like human beings. In the old days some farmers owned slaves and treated them like animals. They tried not to think about them as people because they only wanted to use them without it troubling their consciences.

Laura. Maybe we should think of animals more like people then, if we want them to be treated better. We already give them names. Maybe we should give them rights too. My purpose is whatever I set my mind on. Animals should have a right to decide on their own purpose.

Barry. Have you thought how many chickens supermarkets throw away because they are past their sell-by date? Those chickens' lives are wasted.

Laura. Only if their purpose is to feed us. They might prefer to walk the earth pecking and clucking.

Tom. But animals and people are different. Animals can't think or make choices like we can. It's natural that we use animals, just like animals use plants and plants use the soil. Anyway, it says in the Bible that God gave man dominion over nature.

Kerrie. Okay, so we've got power but do we use it well?

Daniel. I think it's okay to use animals if it's for a good purpose.

Tom. Kerrie, you keep saying 'we' have power. I don't think I have much power. Maybe scientists have power, farmers have power, teachers have power. But I don't – do I? Children don't have any power.

Laura. We have the power to try and think for ourselves. That's a good start.

Using written dialogues

The dialogue form

The written dialogue is an ancient form that can be defined as an argument or controversy presented by way of an artfully constructed conversation. Dialogues of ideas have a long history. In the western tradition, Plato, Hume, Berkeley and Diderot have all used the dialogue form. The Indian Upanishads and the Analects of Confucius are examples from other ancient cultures.

Dialogues are excellent starting points for classroom discussion and enquiry. They can raise complex issues in more direct ways than stories; they are more entertaining than text books and they stand as exemplars of good conversation. Characters in dialogues may support their arguments with reasons and show a willingness to have their assumptions questioned.

The advantages of dialogues

The written dialogue form, with its tradition of stylistic variety, merits greater attention in educational contexts. The lists below outline three ways that dialogues can be useful to teachers who want to stimulate questioning, good conversation and critical thinking.

As models for good thinking and conversation, dialogues can:

- show how and why characters (who are not necessarily labelled as intellectuals) enter into a dialogue
- show what sorts of problems can stimulate enquiry
- present a model of mental energy and intellectual vigour
- present the development of human thought as a drama
- promote a medium for understanding how to disagree and what disagreeing means
- present a model for comparing the relative merits of contrary or contested ideas, *ie* examining assumptions, asking for reasons and clarification
- encourage a second look at ideas that are often taken for granted
- present a model for discussion that moves in a context of reasonableness and goodwill

As models for a thoughtful stance towards truth, dialogues can:

- show characters who care about ethics, truth and argument
- provide a strategy for developing a thoughtful approach to received ideas, opinions and information
- acknowledge the problem that there is often no consensus of opinion about important issues
- encourage the idea that knowledge can be tentative and hypothetical, subject to modification and requiring of reflection

As texts that challenge readers, dialogues can:

- challenge readers to weigh opinions, adopt resolutions, and make judgements – in other words, to perform the continuous activity of critical thinking
- present an open ending that can develop further in the minds of readers. In doing so dialogues challenge readers into uneasiness and responsibility about what to think
- demand greater reader participation than treatises or essays
- invite readers to reconsider their own opinions through engaging with the voices in the text
- induce reflection on experience on the basis of examples
- encourage an awareness of possible others inside and outside ourselves

Reader's theatre

Classic Reader's Theatre is defined as minimal theatre to support literature and reading. There are many styles of Readers' Theatre, but nearly all share these traits:

- No full memorization. Scripts are held during performance.
- No full stage sets or costumes. If used at all, they are suggestive.
- Narration and dialogue provide a framework for performance.

Reader's Theatre was developed, and is most often used, to present adaptations of existing stories in dramatic script form. The simplicity of Reader's Theatre for teachers and learners has made it a popular activity.

Reader's Theatre can be performed at the front of the class or for special events. Sometimes there is no formal performance and Reader's Theatre is limited to class script-reading. In this case it is used simply as a way to vary classroom practice. If performances are undertaken, the following arrangements are common:

- Readers are arranged in a row or semicircle, sitting on high stools or standing.
- Scripts, in ring binder folders, are often set on music stands or held in one hand.
- Readers look straight out toward the audience or at an angle, rather than looking at each other. A variation is that narrators look at the audience and characters often look at each other.
- Though readers don't need to memorize, they should know their lines and cues well enough to look up from their scripts about half the time. When they do look down, it's only with the eyes, keeping the head straight up.

Almost any story can be scripted for Reader's Theatre and there are generally two types of roles: *narrators* who tell the story and *characters* who are in the story and speak for themselves. There are often two narrators to break up the script.

Reader's theatre and dialogues of ideas

Reader's Theatre can be adapted to provide lively and engaging classroom dialogues of ideas. The script included here has a new group of fictional child characters (the enquirers).

They act as representatives of the Reader's Theatre audience; but they don't play a passive role. They make scripted interruptions to ask questions or make their own observations. Historical characters are also brought back from the dead to reply to some of their questions.

Using reader's theatre dialogues

It's quite easy to use Reader's Theatre scripts with a group. Here is just one arrangement that a teacher might adopt to stimulate classroom enquiry:

Step 1: Duplicate the dialogue scripts for all readers in the group.

Step 2: Ask readers to read silently through the dialogue. (This can be missed out or the leader can read the dialogue through once.)

Step 3: Gather all the readers, including the leader, into a circle.

Step 4: Begin by asking one reader to start with the first reader's part in the script. The next person on the left reads the second reader's part, and so on. No individual reading parts are assigned at this point. Each reader reads in turn around the circle. Leaders can join in on the reading too.

Step 5: Review meanings and pronunciations of any difficult words.

Step 6: When readers in the circle have completed the story, ask them to read it again with a few volunteers taking individual parts. End there or go to step 7.

Step 7: The volunteers take the script home to rehearse for the following session when they perform the dialogue at the front of the group if they feel confident. The leader can help with rehearsal to enhance the performance.

If the script is being used to stimulate discussion, then step 6 would be a good place to stop. The group would then be asked to suggest questions for their own discussion. The next session could start with a performance from the volunteers (step 7) and lead into discussion of the group's own questions selected from the previous session. After the group have discussed issues raised from their own questions, the dialogue could be performed again on a later occasion, this time to a wider audience of peers or parents. Children could read out summaries of their own questions and discussions as an epilogue to the performance. This last kind of event wouldn't happen very often but it would make an effective presentation of the kind of work done and confirm that young people are capable of thinking well about complex and controversial issues.

Focus on causes

The question 'why?'

When people ask the question 'why?' they are asking for reasons or causes. Replies to questions beginning 'why?' often have the word 'because' in them.

A reason is usually thought of as part or all of an explanation of why someone (an agent) behaved as they did:

Q. 'Why are you smiling?'

A. 'Because I remember a funny joke.'

A cause is usually thought of as part or all of an explanation of why something (an effect) happened.

Q. 'Why did John fall on his way to school?'

A. 'He stepped on a banana skin.'

We often speak of causes 'making' other things happen.

Thinking about causes

Philosophers and others have asked many questions about causes but they haven't always agreed on their answers. Here is a selection of popular ideas from the last 200 years or so:

- First we should say that there can be **more than one** cause. John slipped on a banana. He might also have been clumsy and couldn't stop himself falling.

- A cause cannot come **after** an effect. It usually comes **before**. A banana skin had to be there before John could slip on it.

- We should think about two kinds of things: **conditions** and **causes**. Conditions are all those things that an effect couldn't have happened without. 'Bananas are sold in shops' is a condition. John wouldn't have slipped on one if they weren't. But is banana selling a cause of his slipping? No, because a cause must have a stronger connection. Plenty of bananas are sold that don't cause accidents so the connection between banana selling and slipping isn't strong.

- Causes are things that fit in with **patterns**. People who buy bananas normally don't fall over. People who step on them often do. There is a pattern.

- In science, things are most often chosen as causes if scientists can **repeat** the causes and effects – all other things being equal. If the same weight was put on a banana skin and given the same kind of push, would it always slip?

- Not everything can be repeated in an experiment. But we can guess that causes are things that could be changed or could have been different. They might be **out of the ordinary**. So John walked to school every day but he didn't fall over. Then one day he did something different – he stepped on a banana skin. The different thing is likely to be the cause.

- Causes are often the **last things** that happen before the effect. Ask what John did just before he fell.

- First look at the conditions and then use your judgement to choose the ones that seem **most likely** to have caused the effect.

- Some causes can seem more important if they are things that people do **deliberately**. If John slipped on a banana skin we could say the banana skin caused him to fall. If Peter threw it in John's way deliberately, we would say the most important cause was that Peter threw it.

Activity

Understanding causes

The above notes on different kinds of causes can be used for a collaborative activity. Each note is printed on a card. The cards should be distributed amongst the group. Volunteers read out one card each. After every card is read, any other member of the group can ask a question about anything that puzzles them on the card. Other members or the group leader try to answer all the questions. Before moving on to the next card, the group tries to think up other examples, apart from the banana one, of the idea about causes that is explained on the card. An extension to this involves grouping these examples into themes such as: causes from history, causes from science or causes from everyday life.

First we should say that there can be **more than one** cause. John slipped on a banana. He might also have been clumsy and couldn't stop himself falling.

A cause cannot come **after** an effect. It usually comes **before**. A banana skin had to be there before John could slip on it.

We should think about two kinds of things: **conditions** and **causes**. Conditions are all those things that an effect couldn't have happened without. 'Bananas are sold in shops' is a condition. John wouldn't have slipped on one if they weren't. But is banana selling a cause of his slipping? No, because a cause must have a stronger connection.

Causes are things that fit in with **patterns**. People who buy bananas normally don't fall over. People who step on them often do. There is a pattern.

In science, things are most often chosen as causes if scientists can **repeat** the causes and effects – all other things being equal. If the same weight was put on a banana skin and given the same kind of push, would it always slip?

Not everything can be repeated in an experiment. But we can guess that causes are things that could be changed or could have been different. They might be **out of the ordinary**. So John walked to school every day but he didn't fall over. Then one day he did something different – he stepped on a banana skin. The different thing is likely to be the cause.

Causes are often the **last things** that happen before the effect. Ask what John did just before he fell.

First look at the conditions and then use your judgement to choose the ones that seem **most likely** to have caused the effect.

Some causes can seem more important if they are things that people do **deliberately**. If John slipped on a banana skin we could say the banana skin caused him to fall. If Peter threw it in John's way deliberately, we would say the most important cause was that Peter threw it.

Activities

Considering causes

A list of possible causes for sheep catching anthrax, taken from the reader's theatre dialogue, are printed below. They can be used for two activities which will encourage the group to analyse different kinds of causes and to consider what are causes and what aren't.

What are causes and what aren't?

Groups of 3 are created. The list of possible causes are photocopied and cut up so they can be moved around on a table top. Each group is asked arrange the possible causes under 3 headings:

- Most likely group of causes (arranged in order of importance)
- Not causes but conditions
- Neither causes nor conditions

There should be plenty of opportunities for group members to talk and change their minds on the strength of good suggestions from others supported by reasons. Final conclusions and reasons should be shared by all groups.

Kinds of causes and conditions

Groups of 3 are created. The following question is read aloud: 'What caused Anthrax to kill so many sheep before Louis Pasteur discovered his vaccine?' The list of possible causes are photocopied and cut up so they can be moved around on a table top. Each group is asked to arrange the possible causes and conditions under 7 new headings:

- Things that could fit in with patterns of similar causes and effects
- Things that could be tested in an experiment
- Things that were 'out of the ordinary'
- Things that happened just before the sheep became ill
- Things that were done deliberately by humans
- Things that could be changed
- Things that had to exist for the effect to happen at all
- Problem pile (for things that don't fit anywhere else)

Group members might want to put some items under two headings. A challenge would be to arrange the headings so that some items can be placed between headings.

There should be plenty of opportunities for group members to talk and change their minds on the strength of good suggestions from others supported by reasons. Final conclusions and reasons should be shared by all groups.

This activity could be repeated using effects and possible causes of the group's own choosing.

Headings for activity 1

Not causes but conditions

Most likely group of causes (arranged in order of importance)	Neither causes nor conditions

Headings for activity 2

Things that could fit in with patterns of similar causes and effects

Things that could be tested in an experiment	Things that were 'out of the ordinary'

Things that happened just before the effect	Things that were done deliberately by humans

Things that could be changed	Things that had to exist for the effect to happen at all

Problem pile

—————————————————

Sheep were herded too closely together

—————————————————

Farmers buried diseased sheep in the same field as live ones

—————————————————

The sheep were not healthy

—————————————————

Living things exist

—————————————————

The earth exists

—————————————————

Pasteur injected some sheep with anthrax

—————————————————

Sheep were not vaccinated

—————————————————

Farmers didn't care for their sheep

—————————————————

Worms carried blood from dead animals to live ones

—————————————————

Sheep had cuts and scratches

—————————————————

Sheeps' arteries and veins got blocked

—————————————————

Anthrax was a killer disease

—————————————————

—————————————————

Anthrax bacteria existed

—————————————————

Grass existed

—————————————————

Worms ate dead animals

—————————————————

Anthrax bacteria multiplied very quickly

—————————————————

Sheep were killed for humans to eat

—————————————————

Sheeps' veins were not big enough

—————————————————

Anthrax bacteria got into the sheeps' bloodstream

—————————————————

Sheep have wool

—————————————————

Farmers lost money when sheep died

—————————————————

Sheep ate infected grass

—————————————————

Blood travelled around sheep's bodies

—————————————————

Some animal had anthrax in the first place

—————————————————

Hidden gold

Theories and predictions

1. What is the difference between saying, 'I have a theory about what happened,' and saying, 'I have an explanation for what happened'?

2. Are all explanations true? How would you know if an explanation was true?

3. Are all theories true? How would you know if a theory was true?

4. Can you have theories about what is happening as well as what has happened?

5. Can you have a theory about something that will happen?

6. If so, would it be the same as a prediction, or rather different?

7. Are all our expectations in life based on theories?

8. What exactly is a theory, then?

9. What famous scientific theories have you heard of? Can you explain any of them?

10. What would life be like if we couldn't predict anything?

'Might' and 'will'

Choose either 'might' or 'will' to fill the space in each of the following sentences. After the word 'because', give your reason

1. The sun … rise tomorrow. I think this because …

2. If I smoke cigarettes I … get cancer. I think this because …

3. If I inhale flu germs I … get flu. I think this because …

4. If I go to bed late I … feel tired the next day. I think this because …

5. There … be vaccines and cures for all serious diseases some day. I think this because …

Now, every time you wrote the word *might* in the above exercise, do you think that *might* means *not very likely*, *likely* or *very likely* in that sentence? Explain your ideas.

Disease and health

1. When we say someone is healthy, do we just mean that they are not suffering from any disease?

2. If someone has a rash could they be suffering from a disease? Could they not be suffering from a disease?

3. What do we mean when we say that something is a symptom of a disease? (Can you give examples?)

4. How many diseases can you name? Can you name a symptom for each one?

5. Is fidgeting a disease? Is lack of concentration a disease?

6. How do we decide what is a disease and what is not?

7. People sometimes blame disease or bad health on poor diet. Can you give examples of what they mean?

8. Is there such a thing as 'emotional' health? If so, try to explain what it is, and how to keep healthy in this way.

Pets and pests

1. Rabbits that people keep at home are labelled pets, but those that run wild and eat farmers' crops are called pests. Are these rabbits different?

2. Could any animal be kept as a pet? Could a slug?

3. If not, how do we 'draw the line', *ie* decide when an animal is a pet and when it is not?

4. Are all animals a pest to someone/thing or another?

5. Some parents sometimes affectionately call their children 'my pet'. Do they mean what they say?

6. Could the whole idea of our having pets be an insult to animals? Or is it a good way of encouraging our friendliness towards them?

7. In what ways are animals in zoos like pets, and in what ways are they different? (Do you think their keepers regard them as pets?)

8. If you keep pestering someone, could that make you a pest? Could children often be regarded as pests to adults?

9. Do you think the farmers should have shot the rabbits that ate their crops, or trapped them, or gone ahead with the plan to kill them with cholera? Or none of these?

10. Is anyone ever justified in killing another person to protect their property? (Try to think of different stories where this question might be asked.)

11. Could humans ever be regarded as pests to other species?

12. If aliens were to 'conquer' the world, might they end up keeping humans as pets? Or might they try to exterminate them as pests?

Slaves and bosses

1. What does it mean when we say someone was 'born into slavery'?

2. How do you think most slaves became slaves in times past?

3. Why do you think it took until the 19th century for slavery to be abolished in Britain?

4. Are there still people who own slaves in other parts of the world today?

5. Can you see any justification for slavery in the present, or even in the past?

6. Do you think some bosses in this country might treat their workers like slaves, even though they do not own them? In what ways might they do so?

7. Is treating someone like a slave just the same as treating them like an animal?

8. Can a person be a slave to someone even if that person does not own them?

9. Could anyone prefer to be a 'slave' of this sort rather than live in another way or place?

10. Is it possible that some farmers treat their animals with more respect than they treat other people?

11. What does it mean to treat someone with respect?

Heroes and villains

Note. To avoid a gender bias, this exercise alternates between the words 'heroes' and the word 'heroines'.

1. Can people be heroines permanently, or are they just heroic occasionally?

2. Could someone be a hero to some people and a villain to others?

3. Do villains only exist in made-up stories or in real life too?

4. What is the youngest age a heroine could be?

5. What is the youngest age a villain could be?

6. Can people grow into being villains, and grow out of it?

Question chains

Do scientists have a special way of thinking?

This question chain starts by exploring what we mean by 'scientist' and the related concept of 'knowledge'. It then explores whether there are different 'ways' of thinking. Finally it focuses on whether there might, indeed, be a way of thinking that is special to scientists.

1. The word 'science' comes from the Latin *scio*, meaning 'I know'. If you know just anything, does that make you a scientist?

2. If not, then is there any one thing you need to know in order to be a scientist?

3. If so, is knowing that one thing enough to make you a scientist?

4. One idea about the sort of knowledge that makes a person a scientist is that it is knowledge about 'how things work'. Does this match with your idea of a scientist?

5. Car mechanics know how to fix an engine. Does that make them scientists?

6. People say there is a 'science' of animal behaviour. What do they mean by this?

7. Is there a 'science' of human behaviour? If so, would an historian be such a scientist? Could a poet or novelist be such a scientist?

8. If two people agree a lot of the time, might they have a similar way of thinking? If two people disagree a lot of the time, might they have different ways of thinking?

9. Could every person's way of thinking be just a little different from everyone else's?

10. Could all humans share a way of thinking that would be different from the way of thinking that creatures from another planet might share?

11. How might a biologist set about developing their knowledge of biology? Would any special way or ways of thinking be involved?

12. Might the same be true of a chemist in regard to chemistry?

13. What kinds of thinking might all scientists share in their quest for scientific knowledge?

14. Could we say that thinking in any of these ways makes a person a scientist? Or would they need to think in all of these ways?

Should scientists ever stop seeking more knowledge?

This question chain starts by examining some of the areas of knowledge that scientists have opened up, and some of the benefits they seem to have provided. Then it looks into the relationship between knowledge and power. This leads into a wider enquiry about whether the power involved in having knowledge may be misused.

1. Do you think that the discovery by some of our ancestors of how to make fire was a 'scientific' discovery? (If so, can you explain what made it scientific?)

2. If we take a scientific theory to be an explanation about how things happen, would the idea of using fire to make metal count as a scientific theory?

3. Once people learnt how to make metals or glass deliberately, what sorts of benefits did they get from such knowledge?

4. Was the invention of the wheel a 'scientific' invention? If so, what benefits resulted from that?

5. Can you think of any other major scientific discoveries or inventions before the 'steam' age? How did any of these benefit human beings?

6. The use of steam to power machines was one of the main features of the so-called 'Industrial Revolution' of two to three hundred years ago. What makes something 'industrial'? What makes something a 'revolution'?

7. It could also be said that there has been a medical revolution in the last two to three hundred years. Can you think of some of the discoveries or inventions to do with medicine that have changed people's lives for the better?

8. Were there perhaps some changes brought about by either the industrial or the medical revolution that were not so good for some people?

9. Is it true, on the whole, to say that it is better to know something than not to know it?

10. Suppose you were one of the scientists working nearly a hundred years ago who realised in theory that an atomic bomb could be made. Would you have been happy to keep doing experiments to learn more about atomic power?

11. Some scientists are trying to produce more or better food by experimenting with the genetic nature of crops, but other people are concerned that the experiments may lead to unexpected disasters. Obviously the scientists should be very careful. Do you think they should refuse to work for companies which may be rushing their research in order to make profits?

How do people make up their minds?

This question chain does not attempt to explore the deep motives or even brain mechanisms that might underlie many choices that people make. Rather, it explores the different situations in which people make decisions, and the outside pressures and influences upon them at such times. It ends by focusing on the extent to which humans may decide freely and/ or rationally (*ie* with good reasons).

1. How many times a day do you 'make up your mind' – too many to count, lots and lots, quite often or hardly ever? (Try to give examples to support your decision.)

2. Did you find it hard to make up your mind in answer to question 1?

3. Do you always realise when you are making up your mind?

4. Are there some times when you are more aware of making up your mind than others? If so, can you give examples?

5. When you make up your mind are you always deciding between just two things?

6. When you make up your mind between two things, are there normally just two reasons to weigh up, one for each choice? If not, try to use examples to show a variety of reasons.

7. Would you like to go through most days without having to make any decisions?

8. How often do other people force decisions on you?

9. How often do you feel events are outside of your control?

10. Do the reasons or interests of other people affect your decisions more often than not?

11. Do you find it easier or more difficult to make up your own mind when you have friends around advising you?

12. Is making up your own mind the same as thinking for yourself?

13. Does thinking for yourself mean that you never take advice?

14. Does thinking for yourself mean you don't have to listen to people you disagree with?

15. Is it reasonable to allow your feelings to count sometimes as reasons? Can you give examples/reasons for your answer? Do any feelings come into your answer this time?

*Do animals have
consciences?*

In this question chain there is a preliminary enquiry as to where we might draw the line between 'animals' and other creatures that do not have 'animal-like' qualities, such as worms. Then, of course, there has to be an investigation of what would count as a conscience. Finally, there is an attempt to see if the concepts of 'animal' and 'conscience' match in any way.

1. Would you agree that humans are animals? If so, what characteristics do we have that make us animals? If not, why not?

2. What characteristics do dogs and horses have that make us class them as animals? Do elephants have such characteristics?

3. Are there some creatures that share some characteristics with animals but not enough to be called animals? Is a worm such a creature? Is a spider?

4. Are there any characteristics that are shared by all animals? If so, what are they? If not, how can we decide whether a creature is an animal?

5. When people say something like 'My conscience told me to do it', does it follow that they see their decision as involving some intelligence?

6. Do animals have this kind of intelligence? Do they have any kind of intelligence?

7. If you say someone did something out of a 'guilty conscience', does it follow that you see their decision as involving some feeling?

8. Can a person have a conscience without having a sense of right and wrong?

9. People sometimes describe a dog as looking guilty. Can you describe in other words how humans – or dogs – actually look when they are looking guilty?

10. Do you think dogs might be intelligent enough to wish they had not done something?

11. Do you think that when a dog is described as looking guilty it might be feeling bad about itself?

12. Would you go so far as to suppose that a dog that looks guilty, feels bad and wishes it had not done something is also displaying a sense of right and wrong?

13. What exactly is a sense of right and wrong?

What is it to treat someone like a human being?

In this chain the central concept is that of a human being, which is examined alongside that of a person. Once some criteria for these concepts have been established, the question moves to whether those concepts/criteria have built into them some expectations of treatment and behaviour.

1. The advice to treat others as you would wish them to treat you looks as if it applies only to other people. Why, for example, would it seem inappropriate to apply it to crocodiles?

2. Would the same reasons make it inappropriate to apply it to certain people who might seem very 'abnormal', such as psychopaths?

3. Are there some people who, for some reasons, appear 'less than human'?

4. If so, then what are the qualities that we expect in other humans (apart from having recognisably human bodies) that make them specially human?

5. Do people have to have all, or just most, of those qualities to qualify as human? Do they have to have them to perfection, or just enough?

6. When people ask or demand that they are treated 'like a human being' is this the same as asking to be treated 'as a person'?

7. Is treating someone kindly a case of treating them as a person? If so, is treating a cat kindly a case of treating them as a person?

8. Is treating someone with respect a case of treating them like a human being or as a person? Could you treat a gorilla with respect and yet not be treating them like a human being/ person?

9. What exactly is respect when shown to another human? Is it the same as respect for any another creature?

10. Does every human, simply as a human, have a right to other people's respect?

11. Does every creature, simply as a creature, have a right to people's respect?

12. Does a psychopath, as a creature, have a right to any respect? Would that have to be the same as the respect due to a 'normal' human, or could it be different?

13. Is the respect owed to children the same as the respect owed to grown ups? If so, why? If not, why not?

Is what is 'natural' necessarily good?

This question chain arises because it is sometimes said or thought that a particular action or behaviour is wrong because it is 'unnatural'. But this begs the question as to what counts as natural. If everything that happens happens because of some law of nature, then it would appear that everything is 'natural'. If that is the case, then we need some other way of distinguishing what is right from what is wrong.

1. In what ways do plants 'use' soil? Would you say these ways were entirely natural?

2. Are GM (genetically modified) plants entirely natural? If not, is that necessarily a bad thing?

3. Do animals use plants other than for eating? If so, please give examples.

4. Is it natural for animals that eat plants to do so? Is there any way of telling that it is natural, other than observing that it is what they do?

5. Is it equally natural for animals that eat other animals to do so?

6. Could there be any way of telling whether humans are natural plant-eaters or natural meat-eaters? (Could we be both?)

7. If it is possible for humans to survive without eating animals, could we say that it is perfectly natural for them to do so?

8. Tom says that it is natural for humans to 'use' animals. How many other uses do we have for animals, other than eating them? Are some of these uses more natural than others? If you think so, what makes you think so?

9. Some people seem to love some animals more than they love most humans. Is this natural? Would it be natural for a human to love some animals more than any humans?

10. Just because someone likes something unusual, does it mean their likes are unnatural?

11. Do you think that everything you like or do comes naturally to you? If so, and if you occasionally do something bad, does it follow that some natural things are not good?

12. If so, could it be the case that some good things are not necessarily natural?

13. If so, is it wrong ever to argue that something is right because it is natural and wrong because it is not?

14. Could it be said that everything that happens happens because of some natural law? If so, does that mean that everything is natural? If so, can we find another way of distinguishing what is right from what is wrong?

How much power do and should children have?

This chain firstly questions whether we are able to draw a clear line between children and non-children. It then investigates whether power is a simple thing that you either have or do not have, or whether there are different sorts of power. Finally, of course, it looks to see what sort of power children may have.

1. Do children become adults as soon as they reach secondary school?

2. Do children become adults as soon as they are able to have children of their own?

3. Do children become adults as soon as they are capable of looking after children of their own? When might that be? (Try to explain what is involved.)

4. Are there times when adults behave like children? Can you give examples of such behaviour? And are there examples of children behaving like adults?

5. Some people say that 'there is a child in every adult'. What do they mean and would you agree?

6. Could there also be some sense in saying that there is an adult in every child?

7. Would it be fair to say that babies have power to make their parents attend to them, *eg* by crying? Do older children have the same power? Could such power be used badly?

8. Do older children have other ways/powers of getting their parents – or their peers – to do things for them? Is there necessarily anything wrong with this? Could there be something wrong sometimes?

9. Is the power to get other people to do something for you a different sort of power from the power to do something for yourself? Are there any other sorts of power you might have?

10. Is the power to think well equally as important as the power to move well?

11. Is the power to think for yourself equally as important as the power to change other people's thinking?

12. Do you think children have enough say in their lives, *ie* in the decisions about what they do?

13. Would children have more say/power if they had more money? Would that be such a good thing?

14. Could children be given more power in any other way that might be a good thing?

Games

Beginnings and ends

Introduction

It was Winston Churchill who said of the battle for Egypt in the Second World War: 'This is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.' Churchill did have a clever way with words – but is it in fact possible to pick out ends of beginnings or beginnings of ends? Club members might like to discuss this question, and perhaps produce examples of their own, before playing the following game, which suggests that sentences, at least, can have ends of beginnings and beginnings of ends.

Procedure

In an even number of pairs or of small groups, members should make up half-a-dozen sentences, each consisting of two clear parts – a subject phrase (what the sentence is *about*) that begins the sentence, and a predicate (what is being said about the subject) that ends it. For example, in the sentence, 'A man with a large red nose jumped onto a sled drawn by two sweaty reindeer', the subject is 'A man with a large red nose' and the predicate is 'jumped onto a sled drawn by two sweaty reindeer'.

Having made up their sentences, the pairs or groups write each of them in large capital letters onto a sheet of A3, which will then be cut up into 4 parts – the beginning of the beginning of the sentence, the end of the beginning, the beginning of the end, and the end of the end. For example, the sentence above could be cut up into these parts: (a) A man (b) with a large red nose (c) jumped onto a sled (d) drawn by two sweaty reindeer.

When this has been done for the half-dozen sentences, there should be 24 parts altogether, which should be jumbled up and exchanged with the jumbled parts from another pair or group. Each party to the exchange then races the other one to see which of them can assemble the others' sentences correctly.

Notes

1. Instead of writing each sentence onto a sheet of A3, members may write the four parts directly onto separate pieces of paper, A5 or perhaps A4.

2. If there is some concern in advance as to whether parties will be honest about what their original sentences were, they should write them all down on a single sheet and give them to the organiser before exchanging their part sentences with each other.

Chains of events

Introduction

Club members may be familiar with the story about the old woman who swallowed a fly, and then swallowed a spider to catch the fly, and swallowed a bird to catch the spider, to catch the fly, *etc*. That is one sort of chain of events that we might observe around us, to do with *human intentions and purposes*. Another might simply be one event leading to another, which in turn leads to another, and so on – what might be called a sequence of *natural consequences*. The following game challenges members to use their creative imagination and produce chains of each sort.

Procedure

1. Members should pair up. One of each pair then starts writing on an A4 sheet a *human intention chain* by completing the statement: 'I know a woman who went to the shops to buy a ....' The other in the pair starts a *natural consequences chain* by completing the statement 'the other day I saw an accident which resulted in ...' When both statements have been completed, the sheets are swopped and each member writes the next link in the other's chain, *eg* 'She bought a ... in order to ...' or 'This in turn resulted in ...' Members should be encouraged to vary the way they express further links in the chain so that the whole 'story' sounds reasonably convincing.

2. When the chains have reached an agreed length, say 8 links, they could be collected and one of them drawn at random for a further stage: the organiser would read out the final link in the chain and members invited to guess what the previous link was. ('Owners' of the chain should remain silent until various guesses have been made.) And so on, backwards in that chain. Or other chains could be drawn at random.

Activities

Different kind of questions

Introduction

It is hoped that by now club members have become used to making up questions of their own, and not just in response to the stimulus at the start of each unit. Every discussion should itself stimulate questions as it goes along – questions that members may put to others or just ponder about in their own minds. Moreover, if members are indeed developing enquiring minds, they should be finding opportunities to ask questions about almost any subject – in school or out of school.

What the club may not have spent much time thinking about is the question of whether there are different kinds of questions that can be asked. We do not mean by this anything as trivial as to whether some questions are long and some short, or some in English and some in French – that's obvious. It may also be pretty obvious that some questions are better for certain purposes than others. For example, if you are lost and want to get home, the question 'Which direction is north?' may be a better one than 'What's that big building on the hill?' (But it may not be better. Why?)

What the following exercise focuses on are some basic distinctions between questions that roughly correspond to distinctions between areas of human interest; but it also requires club members to consider the differences between questions of fact, opinion, meaning and value.

Procedure

For each of the questions below, members are asked (individually, in pairs, in small groups or as a whole group) to assign whichever of the following codes seem appropriate.

Codes

- F = Fact
- O = Opinion
- M = Meaning
- V = Value
- N = Numerical/mathematical
- G = Geographical
- H = Historical
- S = Scientific
- P = Philosophical
- A = Artistic

More than one code may be assigned to one question. For example, the question, Was King John a bad king? might be assigned H (Historical), V (Value), M (Meaning) and, perhaps, either F or O, depending on whether there were an indisputable meaning to the expression 'bad king'.

Note to the organiser	The codes given are not supposed to be all that there could be – perhaps members could find others just as suitable. Also, there may well be genuine differences of opinion as to which codes are appropriate to particular questions – it is part of the purpose of the exercise to raise awareness of the complexity, and at times the ambiguity, of questions. These points should be explained to the members before they embark on the exercise.

1. How many species of spider are there in the world?

2. Should there be a capital city of the United Nations?

3. Where can you find the world's most beautiful diamond?

4. Why do so many boys like football?

5. How did Scott manage to reach the South Pole without motor engines?

6. When is the government going to do something about poverty?

7. Are the tropical rain forests likely to disappear altogether?

8. Who is responsible for this mix-up?

9. Can computers actually compose symphonies?

10. What sort of question is this?

How many sciences are there?

The question for this exercise may be a bit like that old saying, How long is a piece of string? – it could be as long as you like; and there could, perhaps, be as many sciences as you like. For example, there could be a science of pig-keeping, and a science of pigeon-keeping, and a science of almost any human activity, let alone almost any part of the complex universe in which we live. However, there are a few sciences that seem more general and more generally recognised than others – the obvious ones being physics, chemistry and biology. This exercise encourages members to explore the range of established sciences more thoroughly, especially those whose names end with the Greek suffix *logy*, meaning 'the study of'.

Procedure

1. Individually or in pairs, small groups or as a whole group, pair off the following sciences with their correct definitions from the list below. Guesses should be taken when knowledge is lacking!

pharmacology	*ecology*	*dermatology*
toxicology	*tidology*	*archaeology*
geology	*osteology*	*algology*
museology	*fungology*	*pathology*
ornithology	*microbiology*	*heliology*
epidemiology	*opthalmology*	*entomology*
seismology	*cosmology*	*zoology*
hydrology	*meteorology*	

The science/study of:

ancient times	*the environment*	*animals*
earth's crust	*bones*	*diseases*
epidemics	*microbes*	*the sun*
poisons	*fungi*	*birds*
tides	*earthquakes*	*the universe*
water	*the weather*	*skin*
insects	*museums*	*drugs*
eyes	*seaweeds*	

2. See if you can find out what name is given to the science of each of the following:

nerves	*bodyworks*	*minerals*
spiders		

THE
Philosophy
F I L E S

Does what is wrong change with the times?

Starting points	Digging deeper

Philosophers have always tried to examine what people have considered to be wrong and then to draw out whether there is any continuing standard by which things may be judged wrong – or right.

1. Do you think most people have always thought that murder is wrong?

2. Do you think that even murderers think that murder is wrong, but convince themselves that what they are doing is not 'really' murder?

3. If a police sniper kills a maniac who seems likely to shoot a number of innocent people, is the sniper a murderer? If not, why not?

4. Suppose we defined murder as killing for wrong reasons, do you think most people have always agreed what counts as wrong reasons?

5. Nowadays most people think that keeping and using other people as slaves is wrong, whereas two centuries ago it was hard to convince people of this. Would you say we 'know better' now, or just that the fashion has changed? If the latter, do you think that the fashion among humans could ever change back?

6. What reasons do people put forward nowadays for holding that slavery is wrong?

7. Do those same reasons rule out other actions as wrong? If so, try to give examples.

Socrates thought that if a person did something wrong it must be because they did not know it was wrong. (*NB* This is not the same as saying they did not know it was counted as wrong, but rather that they did not know or understand why it was wrong.) So, he thought, if only wrongdoers were better educated, they would see the wrongness of their ways and start doing the right thing.

1. Do you agree that some wrong is done out of ignorance?

2. Would you go so far as to say that a lot of wrong is done out of ignorance? Or even that all wrong is done out of ignorance?

3. What kind of education might do away with that kind of ignorance?

4. Are there some kinds of wrongdoing that no kind of education could avoid? Give examples.

5. Are there any kinds of education that could cause wrongdoings?

Starting points	Digging deeper
Another theory about wrong-doing, from **Aristotle**, is that it arises out of weakness of will: people know they should not do something, but they cannot avoid the temptation.	1. Do you imagine that most slave-owners 'fell into temptation' in this way, or had they convinced themselves that what they were doing was perfectly all right? 2. What reasons might they have put forward for holding that slavery was not wrong?
Another philosopher, **Immanuel Kant**, held that it was a universal rule that you should not treat other people *only* as a means to your own ends/purposes. This is a bit like the 'golden rule' of most religions, that you should not treat other people differently from how you would wish them to treat you.	1. Would you agree this is a basic rule that people have always felt, and will always feel, should not be broken? 2. Could how you would wish to be treated change with the times or with your age? 3. Could you ever imagine people would want to be treated badly by others? 4. If you 'used' people for your own ends or purposes but did not treat them badly, would that be alright?

*Logic***works**

A short course in logic

The practice of thinking logically – or at least of not thinking illogically – has been crucial in people's everyday lives for longer than there have been philosophers. And it is sure to remain so.

At its most elementary, logical thinking is just 'straight' thinking – thinking, that is, which enables us to order our thoughts to make sense of world around us.

But it does not follow from this that logic is an inflexible tool for reaching dull conclusions. Properly conceived, it is a tool for celebrating the flexibility and complexity of the world. Of course, that very complexity and flexibility can make abiding by the rules of logic rather tricky. But there are simple mistakes that people regularly make in their thinking.

This short course focuses on some of these traps as well as trying to develop a sense of fascination, if not fun, in organising our conceptual 'map' of the world.

It can be dipped into to give variety to your philosophy sessions. However, it does need to be followed pretty much in the order given.

How to use Logicworks
The introductions to the main parts of this course and to the exercises are written for the organiser. They should be adapted to make short presentations to students followed by tasks contained in the exercises. These could be photocopied or written up on the board by the organiser.

It is often best for the organiser to help the students through the tasks using illustrations on the board and checking for agreement and disagreement within the group. In this way the exercises can become enjoyable collaborative efforts. This pattern of short presentations using examples followed by collaborative work is recommended as a good way to teach basic logic.

When the pattern is established, individual students could present their solutions to the group at the board and ask for comments, thereby taking over some of the role of the organiser.

History
The ancestor of our English word *logic* is an ancient Greek word *logos*, which is sometimes translated as 'reasoning' and sometimes simply as 'word'.

Not all reasoning is in words, of course. We only have to think of making models to realise this. When we figure out which piece goes where, we are surely reasoning – but with pictures in our minds rather than with words.

On the other hand, if we have a reason for thinking something or doing something, then words are a most valuable tool for explaining, *ie* making plain, our reason to others or even to ourselves.

If, indeed, you need to convince other people that your reason is a good one, then words seem almost essential. That was certainly the view of some of the ancient Greeks. They employed special teachers to teach them or their children the art of logic – how to reason well with words.

Logic and education

One of the most famous Greek philosophers, *Aristotle*, (384 – 322 BC) actually published some rules of logic that were part of formal education right up till the 19th century.

Logic is no longer taught as a subject in schools. Part of the reason for this may be that in the 19th and 20th century other subjects, such as science and geography, grew very quickly and logic was squeezed out.

Yet at the very time when Aristotle's rules were going out of fashion, Edward Venn, an English clergyman, devised a way of picturing them that made them much easier to understand and also made it obvious why logical thinking is still fundamental to good thinking.

It is not just that logical thinking is straight thinking that avoids bad mistakes of reasoning. It is also because Aristotle's rules of logic reflect the variety of relationships between the categories we use to order our thinking about the complex world in which we live. These relationships are effectively mapped out by *Venn Diagrams*, which therefore play a major part in this short course in logic.

Part A: Avoiding the mistake of rash reversing

One of the easiest mistakes to make is thinking we can 'reverse' a sentence when in fact it cannot be done. A simple example would be the following:

1. *If you have a cold, then you have a runny nose.*

This argument seems sound enough. Experience tells us that colds are generally accompanied by runny noses. Indeed, this is so common that if a person did not have a runny nose we would doubt whether they had a proper cold.

This connection between colds and runny noses is so strong in our minds, however, that we can easily try to reverse the argument as follows:

2. *If John has a runny nose, then he must have a cold.*

If people see someone with a runny nose they do, in fact, often jump to the conclusion that they have a cold. But this is not necessarily a correct conclusion. A runny nose can also be due to hay fever, for example, or to cold of another sort – cold weather. It is simply mistaken always to suppose that the reverse of a true argument is itself true. Arguments like this do not have to be expressed in the form of *If… then*. They could take the form:

3. *You have a cold. So (or Therefore) you have a runny nose.*

Or they could take the form used by Aristotle when he was drawing up his 'rules of logic':

4. *All people who have colds are people who have runny noses.*

This may seem a rather long-winded way of saying

5. *Everyone who has a cold has a runny nose.*

It has been found, however, that putting the argument in the Aristotelian form, *All … are …*, is a good way of clarifying the categories or sets of things (or people) in the argument. Moreover, since the 19th century, thanks to the English clergyman *Edward Venn*, we have been able to show the argument in a diagram that we may describe as 'the fried egg':

Note Here it is very clear that the set of people who get a cold forms a subset of the set of people who get a runny nose but not vice-versa. The relationship between the sets is not reversible. In 'fried egg' terms, the white surrounds the yolk; the yolk does not surround the white!

People with runny noses

People with colds
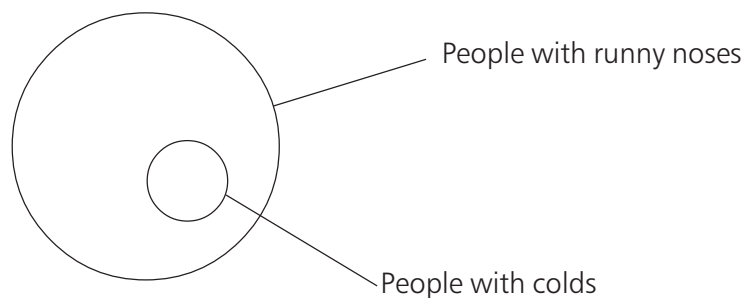
Before we move to some more challenging examples, here are two exercises to help your class become familiar with putting arguments into Aristotelian form, and sketching the Venn Diagram that represents them.

Exercise A1: Getting our thoughts in order

On a piece of paper each member should 'translate' each of the following arguments into the form *All … are …,* and then sketch a Venn diagram to represent the argument, labelling the circles clearly.

For example, *Everyone born in England is entitled to a British passport* translates into *All people born in England are people who are entitled to a British passport* and is represented by the diagram

Note It might seem unnecessary to repeat the word 'people' in this example, but strictly they form part of the label for the second set. If you can find a shorter way of labelling the same set, so much the better. For example, instead of *people entitled to a British passport* you could say *British passport-holders*.

People who are entitled to a British passport

People born in England
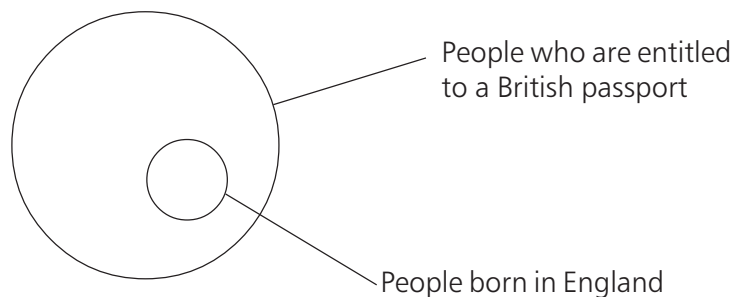
Now try these statements

You may alter the following statements however you like, provided you keep the sense the same and end up with the correct form, *All … are …* You may even draw and label the diagram first if that helps you get the correct form clear in your mind. Compare answers to see if there are any interesting differences.

1. Doctors are trained in the art of healing.
2. Every breed of dog is descended from wolves.
3. Any friend of yours is a friend of mine.
4. The UN soldiers were targets for militiamen.
5. Everyone in the new shopping mall had a smile on their faces.
6. If you have won a lottery prize you must have bought a ticket.
7. Those who have bought a ticket may now take their seats.
8. This is a meteorite. So it must have come from outer space.
9. Anyone entering this area is putting themselves at risk.
10. Since you are a member of the club, you are entitled to enter free.
11. They are all hungry because they have not eaten for days.

Reverse the arguments in your minds or on paper, just to check that they are not reversible. This would prove particularly useful in preparation for the next section, which deals with a special sort of sentence that is, in fact, reversible.

Part B: Getting our definitions clear

Some statements beginning with *all* are reversible. Here are some examples:

1. *All oaks are trees that grow from acorns* – which is true. The reverse of this is: *All trees that grow from acorns are oaks* – which is also true.

2. *All insects have six legs* – which is true. As in some cases above, this one has to have a little translation before it can be reversed: *All insects are creatures that have six legs.* The reverse, then, is: *All creatures that have six legs are insects* – which remains true.

What is it about these statements that makes them reversible? You can probably figure this out for yourselves, but in short the answer is that they are both **definitions**.

What are definitions?

It is worth just spending a little while considering what makes them work as definitions. Notice that they both have the same structure: *All x's are y's that …* Logicians or mathematicians would express this in the form *the set of x's is a subset of the set of y's.* But there are other equally good ways of saying this: *an x is a sort of y*, for example, or *if it's an x, then it must be a y.*

Of course, if this was all that were being said, then it could be represented by the fried egg diagram, just like the previous examples.

Distinguishing features

What makes the definitions special is the extra bit, beginning *'that…'* This is the part that says what is special about the x's (oaks or insects, in our examples) that distinguishes, *ie* separates, them from other y's (trees or creatures).

Oaks are trees distinguished by the fact that they grow from acorns (no other trees do that). Insects are creatures distinguished by the fact that they have six legs. Any other creature that has them must also be an insect.

Two final points before developing your understanding in the next exercise. One is that the extra bit does not have to start with *'that …'* You can express the *distinguishing factor* however you like. A common way of doing this is to describe the special function or job of the thing being defined – for example: *Thermometers are instruments for measuring temperatures.*

The second point is that your definition must be wide enough to include all x's, but not so wide that it includes other things that are not x's. For example, *All beers are drinks that are made from hops* is too narrow a definition, because it does not include beers made from other plants, such as ginger beer.

On the other hand *All beers are drinks made from plants* is too wide, because it would include squashes and other drinks made from fruit, including wine. It is not so easy to define things accurately as you might think. (How exactly would you define beer?) But, of course, if we are not clear in our definitions, we are not likely to be clear in our reasoning.

Exercise B1: Definitions

Individually, or in small groups, see if you can complete the following definitions. When you are satisfied with your efforts, compare them with other people's. Be critical of each other (in a friendly way)! If you think hard you may be able to give examples to show that certain definitions are too narrow, or too wide. You should also aim for definitions that are not too long.

1. All wristwatches are timepieces that ...

2. All giraffes are animals that ...

3. All hammers are tools for ...

4. All cameras are machines for ...

5. All fish are creatures ... (with?)

6. All magazines are ...

7. All fruits ...

8. All nurses ...

9. All sports ...

## Part C: Avoiding the mistake of not looking for alternatives

We have already noted that it was a mistake to reverse sentences such as *All p's are q's* or *If p, then q* unless they are definitions. In this section we note another common mistake, which is really just a development of the one above. It is to jump from the *All p's are q's* to the conclusion that if something is not a case of p, then it is not a case of q.

An example is needed to bring this to life. Suppose someone said *All food that has passed the sell-by date is risky to eat*, and then you picked up some food that was not past the sell-by date. You might reason to yourself that it was not risky to eat. Would this be sound reasoning?

It would not! Going past the sell-by date is not the only thing that could make food risky to eat. Leaving it open to the flies is one amongst a number of other alternatives that could make it risky.

Your mistake in reasoning would have been that you assumed the reverse of the sentence was true, namely, that if the food was risky, then it would have passed the sell-by date. Because it hadn't passed that date, you felt safe to eat it.

The following picture may make the mistake of logic even clearer. The inner circle (labelled P) represents food that is past its sell-by date, and the outer circle (labelled Q) represents food that is risky to eat. The crosses represent examples of food that is not past the sell-by date (P) but is risky to eat. (Q). How many such examples can your group think of, apart from food that is left open to the flies?

Food risky to eat (Q)

Food past sell-by date (P)
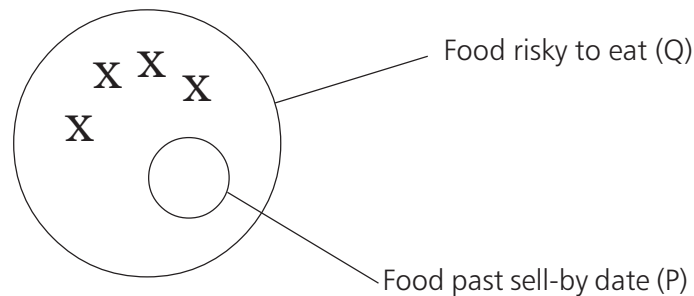
The effort to picture the sets as a Venn diagram is one way of taking care to think the situation through. Another way is just to pause and check if there is an **alternative** to your immediate way of thinking. For example, you could ask: 'Are there any other reasons why food could be risky to eat?'

Yet another way is to become more alert to the difference between the use of the word *if* and the expression *if and only if*, as in the next exercise.

Exercise C1: Sorting 'only' from 'not only'

Introduction

Firstly, let's look again at that key sentence, *All x's are y's*. We know very well now that, except in definitions, it does not follow that *all y's are x's*. Another simple way of proving the point is to agree that *all x's are y's* but to say that *not only x's are y's*. For example, all oaks are trees, **but not only** oaks are trees – there are plenty of other (alternative) trees.

Compare this case with that of a definition, such as *All MP's are entitled to vote in the House of Commons*. It happens that the only people who are entitled to vote in the House of Commons are MP's. So, to be clear in our thinking, we should use the expression *All **and only** MP's are entitled to vote in the House of Commons*.

Procedure

Individually or in pairs, rewrite the following sentences, adding either *and only* or *but not only* as appropriate. Wherever you add *but not only*, give one or two alternative examples.

1. All food that has passed the sell-by date is risky to eat.
2. All Olympic medal winners deserve praise.
3. All parents have children.
4. All hospitals are places where the sick are nursed.
5. All puppies are baby dogs.
6. All people who read daily newspapers are literate.
7. All robbers are thieves.

If you finish before others, you might go a step further and translate the same sentences into the form: *If x, then y*. Then check that the *and only* sentences translated into *If and only if x, then y*.

Part D: Avoiding the error of over-generalisation

The previous sections looked mainly at sentences beginning (or translating into) *All x's* … These are called 'universal' sentences because they refer to all members of a set or 'universe'. They are important as they form the basis of how we classify or order the world about us, but they are certainly not the only sort of sentences there are.

Using the word 'some'

In our ordinary conversations, we more often speak of **some** members of a class than all. And in our ordinary judgements we normally distinguish some members of a class from others. For example, we might say: *Some programmes on TV are awful* – from which we would normally conclude that some are not. Such a judgement can also be represented in a Venn Diagram, (which we call 'the butterfly') as follows:

Programmes on TV   Things that are awful
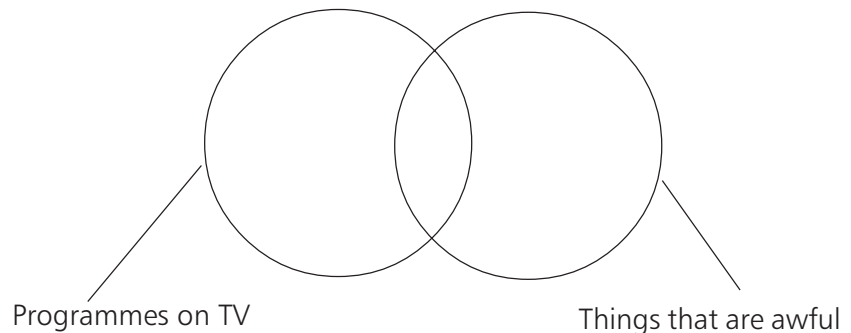
Unfortunately people are not always so careful and balanced in their judgements. Most of them have a tendency to over-generalise.

Over-generalising

An over-generalisation is when something maybe true once, or on **some** occasions, but we judge it to happen more often, or more generally, than it does. We may even go so far as to say that it is true **all** the time.

For example, we may get fed up with the rain and say, 'It's always raining'. Or we read headlines about teenage pregnancies and on that basis alone think that they are more frequent than ever. Or we have an awkward experience with some people from a particular group and form a bad opinion of all people in that group.

Prejudice and stereotyping

This last example would be a case of prejudice or stereotyping. These words are commonly known, though their origins may not be. Prejudice means judging in advance or too quickly, and stereotyping means taking someone or something to be typical when it is not. That is exactly what we mean by 'over-generalising'.

Well, how often it happens in your own mind is for you to judge! But the following exercise is designed to show how easy it is to fall into the trap.

Exercise D1: Keeping generalisations in check

Divide into smaller groups of three or four people. Each group considers one of the following examples and decides how much over-generalisation is going on. They should also:

- consider whether the generalisation is totally unjustified or reasonably understandable
- try to come up with similar examples from their own experience
- share experiences with the whole group
- discuss how people could be educated to avoid bad over-generalisation

Over-generalisation?

1. A head teacher hears a loud noise coming from a classroom and tells the whole class off.
2. A disc-jockey hears a loud record by a new group and assumes they are a heavy rock band.
3. A famous football team is reported to have had a drunken party, and the coach says, 'They're just young men. What do you expect?'
4. You offer to do the washing-up one day when you have nothing better to do. From then on you are expected to help out every day.
5. There is a bad-tempered atmosphere in the shop one morning. 'I'm not going there again,' says one of the customers on leaving.
6. A train is late and a businessman misses a vital connection. He decides to go back to driving everywhere.
7. You go shopping on a Saturday morning and have a hard time with the crowds. You conclude that the world is getting overpopulated.
8. Two different neighbours win some money on the lottery. You try to persuade your parents that buying a ticket next day would be a good bet.
9. A friend of yours gets a low score in a maths test and says, 'I'm useless at maths. I should just give up.'

Exercise D2: Making 'some' more precise

There is a large range of words and phrases that cover the gap between *all* on the one hand and *no* or *none* on the other. The more familiar we are with these words, the easier it should be to express our generalisations accurately.

Procedure

The organiser should start off by drawing a tall vertical line on the board and putting markers (horizontal lines) at the top, bottom and middle. Next to these markers should be entered the words *all*, *half* and *no/none* respectively. The remaining words or phrases below should either be written separately on the board or photocopied for each member.

The exercise can continue as a whole group activity or in small groups or as individuals, the business being to enter all the words or phrases at their appropriate level on the 'ladder'. If there is some doubt as to where a word should go, it should be set aside for later whole group discussion.

All ——

Half ——

No/none ——

a few	not many	lots of
most of	the majority of	one
thousands	millions	all but one of
several	a fraction of	very few
next to none	almost all	virtually all
certain of	a small number of	a large majority of
more than one	not a few	a large number of
precious few	one or two	a couple of
a handful of	almost none	a minority of
loads of	a small minority of	a quantity of
the vast majority of		

Part E: Avoiding the mistake of class confusion

There are some basic categories we use to sort out the many 'things' in our world. Animals, vegetables and minerals are three of these main categories, but there are many categories of abstract (untouchable) things as well, like colours, sounds and tastes, for example, or numbers, decisions or promises. Many of these categories are quite separate from each other and we do not confuse them. Animals and vegetables are a clear example. The relationship between these two categories is simply expressed by the sentence, *No animals are vegetables*, and it can be shown by a diagram that we may call the 'binoculars'.
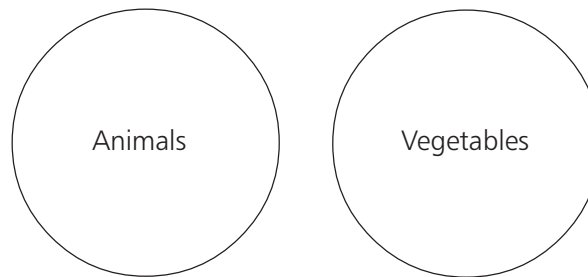

It is obvious from this diagram that sentences of the form *No x's are y's* are reversible: if no animals are vegetables, it must equally be true that no vegetables are animals. You probably realised in the last section on generalisations that the same is true of categories that overlap, expressed in the form, *Some x's are y's*. If some Scotsmen are film stars, for example, it is equally true that some film stars are Scotsmen.

As a matter of fact, categories overlap more often than not, and this can lead us into confusion. That, in turn, can lead to other mistakes in our reasoning. Consider, for example, how the categories of drugs and medicines overlap. Are all medicines drugs? If we thought so, we might make the mistake of banning all medicines. Or perhaps all drugs are medicines? In that case we might be tempted to legalise all drugs. But if neither of these is true, then we clearly have to face the question: When is a drug a medicine and when is it not?

Logical thinking does not necessarily lead to agreement in answering such questions, but it does discipline us into treating the question in a systematic, *ie* ordered, way. The following exercises practise this discipline.

Exercise E1: Making the boundaries more precise

This exercise can be done individually or in small groups or as a whole group. For each of the pairs of sets or categories below a 'butterfly' diagram should be drawn to represent the relationship between the two sets, and the set names should be written on the outside, and the numbers 1, 2 and 3 on the inside, as in the example below.

Scotsmen   Film stars

1   3   2
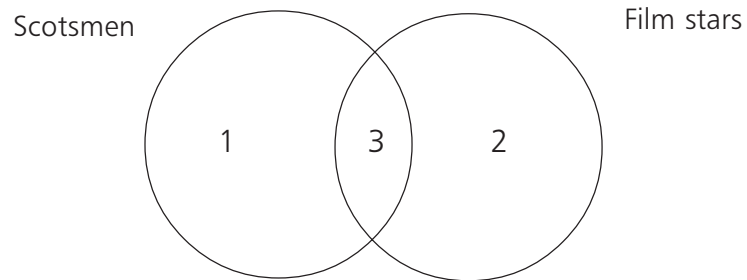
Under each diagram a specific example for each area of the diagram should be written, as follows:

1 – a member of set 1 that is not a member of set 2 (for example, Gordon Brown, who is a Scotsman but not a film star)

2 – a member of set 2 that is not a member of set 1 (for example, Julia Roberts, who is a film star but not a Scotsman)

3 – a member of set 1 that is also a member of set 2 (for example, Sean Connery, who is both a Scotsman and a film star) If it turns out that there is no example for 3, then the diagram should be redrawn in 'binoculars' form.

Pairs of sets/categories

singers, songwriters

TV presenters, women

paints, oils

foods, drinks

soldiers, sailors

buildings, homes

musical instruments, industrial waste

sports persons, Americans

sports players, professionals

games, jobs

vegetables, fruits

wild animals, domestic animals

knives, weapons

Part F: Coping with complexity

Aristotle started his investigation of logical thinking by observing that most basic arguments have three parts. They consist, in his words, of a couple of *premisses*, or basic statements, which are put together to make a *conclusion*. (You could say it's like 'putting two and two together to make four'.)

Of course, people's conclusions are not always correct, and Aristotle observed that this might be for one of two reasons: either one of their premisses is incorrect, or the person's reasoning is incorrect (or, in his words, *invalid*).

Premisses and conclusions

Here is an example of an argument based on an incorrect or false premiss:

Premiss 1 *My newspaper today said that some extraterrestrials have landed.*

Premiss 2 *Everything you read in the newspapers is true.*

Conclusion *It must be true that some extraterrestrials have landed.*

Explanation

We probably do suppose that newspapers give us the truth most of the time, but hardly anyone thinks they give the truth all the time. So, the argument above does not persuade us, because we doubt the premiss: *Everything you read in the newspapers is true.* We should note, however, that the first premiss might be true. And some might even argue that the conclusion is also true. The point is that to prove it they would have to do more than just quote the newspapers. Some other, correct, premiss or evidence would be needed.

Note It would be useful to demonstrate this in an active way with a group by asking them whether the conclusion might ever be true and, if so, what alternative premisses or evidence would be more convincing.

Making sure your premisses are correct is obviously important. But what interested Aristotle even more was making sure that the reasoning was also correct. For he noticed that even if you had two correct premisses, you might still have a false conclusion – if the conclusion did not 'follow' from the premisses. For example:
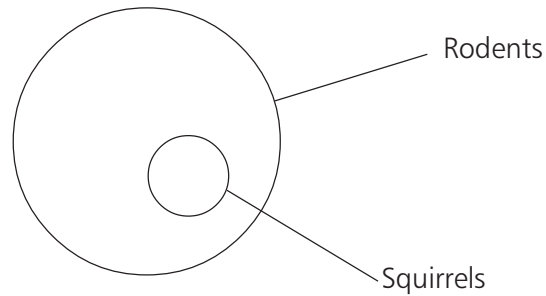
Premiss 1 *All squirrels are rodents*

Premiss 2 *All rodents are mammals*
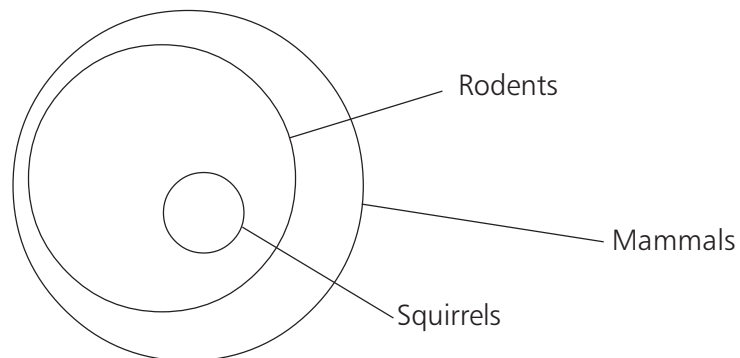
Conclusion *So all mammals are squirrels*

Here, the two premisses are both correct, but the conclusion is (obviously) false. It certainly does not follow from the premisses. Anyone who put this argument would have confused the categories involved – squirrels, rodents and mammals. On the other hand, the conclusion *All squirrels are mammals* would not only be true but would also be a valid conclusion because it follows from the premisses. The categories would have been properly sorted out.

In most simple cases like the ones above, people can see which conclusions follow from which premisses and which do not, without knowing Aristotle's rules. But for centuries Aristotle's rules seemed the best way of sorting out more complicated arguments and categories: thousands of students learnt them and no doubt their thinking was sharpened as a result.

Today, thankfully, we do not have to learn a lot of rules in order to think as clearly and sharply as Aristotle and his students. The 'logical' relationships between categories, which form the basis of much argument, are more simply shown by Venn diagrams. The diagram to represent the first premiss, *All squirrels are rodents,* is this:

When the second premiss, *All rodents are mammals*, is added we get the following picture:

From this it can be seen at a glance that it would be correct to conclude that *All squirrels are mammals*, and incorrect to conclude that *All mammals are squirrels.*

Exercise F1: Gaps in the arguments

Use your common sense to work out what would replace the dots (...) in each of the following arguments. (But also sketch a Venn diagram to see if that helps you think it out.)

Premiss 1 *All his friends are rap fans*
Premiss 2 *All rap fans are word-lovers*
Conclusion *So all his friends are ...*

Premiss 1 *All squares are rectangles*
Premiss 2 *All ... are quadrilaterals*
Conclusion *So all ... are quadrilaterals*

Premiss 1 *All ostriches are ...*
Premiss 2 *All birds are egg-layers*
Conclusion *So all ... are egg-layers*

Premiss 1 *All ... are bops*
Premiss 2 *All bops are ...*
Conclusion *So all bips are bups*

Premiss 1 *All students in this class are people who plan to be doctors*
Premiss 2 *All people who plan to be doctors are persons who like to heal the sick*
Conclusion *So ...*

**Premiss 1** *All films shown before 9pm. are supposed to be suitable for family viewing*
Premiss 2 *All films that are supposed to be suitable for family viewing are films without violence*
Conclusion *So ...*

Exercise F2: Finding more logical relationships

Introduction

In exercise F1, the relationship between all the sets involved is the same as the one between squirrels, rodents and mammals. But there are other relationships between three sets – for example:
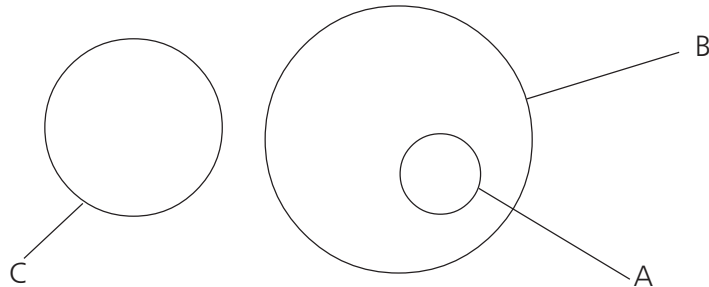
The valid argument that this diagram represents is:

Premiss   *All A's are B's*

Premiss   *No B's are C's*

Conclusion *So no A's are C's*

See if you can draw another diagram to represent the following valid argument.

Premiss   *Some F's are G's*

Premiss   *All G's are H's*

Conclusion *So Some F's are H's*

If you compare your diagram with other people's you may notice that there are two possible diagrams to represent the two premisses here.

Explanation Strictly, you could argue that only the second diagram correctly represents the full argument, because the conclusion is only that some F's are H's, not that all of them are. But other people might argue that if you draw all F's as H's, then certainly it would be true that some F's are H's - so that diagram is not incorrect after all.

In the end, that discussion is not as important as realising that you cannot actually conclude that all F's are H's from the original two premisses. The reason for that is because the two premisses guarantee only that all the F's that are G's are also H's. This is not the same as simply saying that all the F's are H's.

1

2
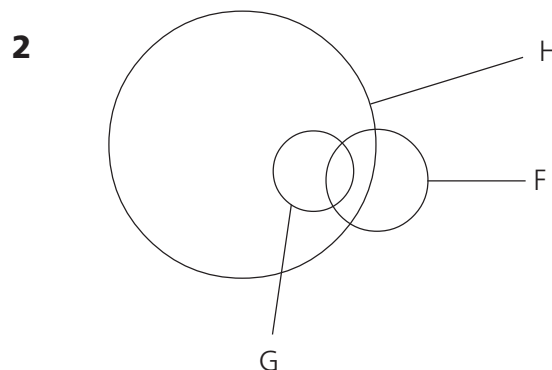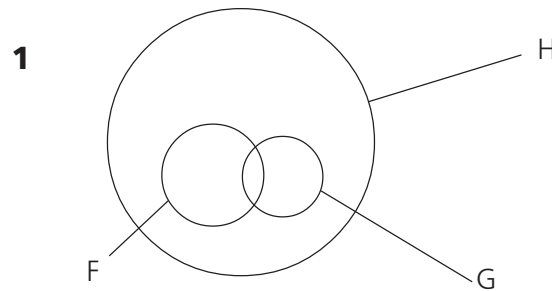
When logical argument gets to this point, of rearranging letters and circles, some people become more fascinated by it, whilst others recoil in horror. It has to be admitted that the following exercise is more likely to appeal to the former group! But before others turn off completely, it may be worth their reading at least the next couple of paragraphs.

Logical relationships in life

As humans grow older, not only does their range of experiences grow, but so does their range of ideas. Already by the age of 10 most humans carry in their minds thousands of ideas, most of which are related to each other in very simple ways. Like the circles in Venn diagrams, two ideas can be quite different from each other (binocular-style), or similar in some ways and different in others (butterfly-style), or almost exactly the same (fried egg-style).

256 combinations of arguments

If we only ever discussed two ideas at a time, we might rarely disagree with each other, since the relationship between the two ideas could be sorted out in just such simple ways. But the moment we bring a third idea into the argument, things can get complicated very quickly. We won't go into the mathematics of it now but, believe it or not, there are 256 different possible arguments involving just three different ideas and the basic words 'all', 'some', and 'no' – of which only 19 turn out to be 'sound' or valid arguments. It was to separate the 19 from the other 237 that Aristotle made up his rules.

Fortunately, there are not 256 combinations of circles representing those arguments! There are in fact only 13 different 3-circle relationships. Practice in examining these relationships will stand learners in good stead for dealing with arguments in the future. They do not need to struggle through the rules. Just trying to be clear about the relationships between ideas will improve their chances of arguing well.

Procedure

Taking a pencil and some blank sheets of A4 paper, spend 5 minutes doing small freehand sketches of as many different 3-circle combinations as you can think of similar to the ones on page 136.

When you have drawn as many as you can, compare with your neighbour to see if you have all 13 different 3-circle relationships between you. If you have a little time to spare you might even try and bring the diagrams to life with examples of sets that fit them.

Question chain *Is all reasoning logical? Is all logic reasonable?*

1. When you reason about what to have for lunch, or what to do with your friends, do you ever use the words 'all', 'some' or 'no/none'? If so, give examples.

2. If you are discussing with your parents which film to see, do you use classification words such as 'thriller', 'action', 'romance' or 'comedy'? If so, do you make judgements about members of these classes/sets, with words such as 'most' and 'least' or 'good' and 'useless'?

3. Can you give examples of judgements about sets as a whole rather than about just individuals in sets? Do you think most of your judgements are about individuals rather than sets?

4. Is your judgement affected at all by knowing that each individual is a member of one set or another, *eg* the set of boys, or teachers, or postmen, or apes, or spiders?

5. Can you reason about anything without taking account of sets?

6. What do people usually mean when they say that someone's reasoning is 'illogical'?

7. If we say something is reasonable, do we mean that there are good reasons for it?

8. What do we mean by saying that a person is reasonable?

9. Is having an irregular heartbeat a good reason for going to the doctor? If so, what makes it a good reason?

11. If you have a good reason for going to the doctor, is it 'logical' to do so?

12. If someone reached a 'logical' conclusion but based on a bad reason, would we say that they were being illogical, or just unreasonable?

13. Is there any important difference between saying that a course of action is reasonable and saying that it is logical?

Activity

Judging good reasons

In pairs or small groups decide whether the following reasons are good, bad or 'not sure'.

1. Abraham decides to go to the city *because* he wants to get away from it all.

2. Brenda decides to become a vegetarian *because* her best friend is a vegetarian.

3. Colin decides to go to a football match *because* his friends are all going.

4. Dot decides to stay in bed *because* it is raining.

5. Elijah decides to help wash up *because* he needs some more pocket-money.

6. Frances decides to scream *because* she feels like it.

7. Gurinda decides to have day's silence *because* he doesn't feel like talking when he wakes.

8. Hannah decides to have a day's silence *because* she wants to do something for deaf people.

9. Ian decides to stop this working with others *because* he thinks you don't have to have a good reason for everything.

10. Jessica decides to tell Ian off *because* she thinks that's not his real reason.

Activity

Explanation. Role-play in twos or threes can be a good way to practice logic. One person takes the role of the 'subject' – the person who makes a logical mistake. Another tries to explain the error. The subject should not understand the mistake too quickly but instead try to push the explainer into several different explaining strategies. Venn diagrams may even need to be drawn! Here are some scenarios to try out, though it is worthwhile challenging groups to make up their own based on parts of this logic course.

Logic role-play

1. A parent wants his daughter to be a nurse but the daughter is not keen. To back up his argument, the parent says: 'Nurses are caring and I know that you are caring. So you should be a nurse – you have the most important quality to be successful.'

2. A boy has a bicycle accident and is taken to hospital. A few weeks later he is fully recovered but doesn't remember what happened to cause the accident. He says to his father: 'I can't understand it. You keep telling me that bicycles with faulty brakes are dangerous. But I checked the brakes before I set off. I really did!'

3. John and Mary are disagreeing about whether lying is always wrong. Paul says: 'Arguments are conflicts and conflict is wrong so I think arguing is wrong. You should stop the argument. Anyway, arguments never get people anywhere.' Mary disagrees. What would she say to Paul about his argument?

*News***wise**

Scientists read the book of life

Steve Williams and Roger Sutcliffe

An old nursery rhyme told us that girls were made from 'sugar and spice and all things nice'. Boys were made from 'slugs and snails and puppy dogs' tails'. But scientists have been working out how humans are really put together. We grow from a single cell into a body containing millions of cells. And why do we grow to be humans rather than puppies? The answer lies in our genes.

Genes are tiny sections of DNA, a chemical that is found in every living cell. DNA can be pictured as a ladder, with genes being like the rungs of the ladder. Every gene has its own special part to play in making different cells. It is the whole pattern of our genes – called the human genome – that makes us the way we are.

Now two teams of scientists have made a first 'map' of this pattern, using 3 billion letters to label the bits of it. Their work has been hailed around the world as a 'magnificent achievement.' Bill Clinton, the US President said, 'This is without a doubt, the most important, most wondrous map ever produced by humankind.'

All humans share 99.9% of the bits of the human genome. This means we are much more similar than we are different. All our differences are caused by a tiny proportion of genes.

Those differences include getting serious illnesses like cancer that attack some people and not others. Scientists are confident that knowing more about our genetic map will lead to new treatments for such diseases.

John Harris, a genetic scientist, also believes that we can live longer if we pay attention to our genes. Ageing happens because the cells that make up our bodies cannot repair themselves as we get older. Genes control the repair of cells. Therefore, it should be possible to change the way our genes work so they repair cells better.

Dr. Harris said, 'In the past 50 years, average life span has increased from 46 to 64 years. We could double that. Eventually, people could live for 1,200 years.' But he also warned that if people lived a lot longer, then societies would have to face many new kinds of problems that we can only begin to imagine.

For one thing, treatments for ageing or illness could be very expensive. Only wealthy people living in rich countries may be able to afford them. Some scientists think that more lives would be saved or improved around the world if money for genetic research were spent on simpler things like making sure everyone has clean water.

Scientists also disagree about who should own knowledge about human genes. Two teams worked on decoding the human genome. One, led by Dr. John Sulston, believes that 'the map of life' should be shown to anyone who wants to read it. The other, led by Dr. Craig Venter, thinks that companies should be able to sell their knowledge to cover the costs of their research – and to earn some profit.

Claiming ownership of genetic knowledge will not be easy, however. Lord Sainsbury the British Minister for Science said, 'You shouldn't be able to patent a discovery, only an invention. Dr. Venter would have to prove that his team has invented something.' At the moment both teams are willing to share. In the future – who knows?

Steve Williams and Roger Sutcliffe

An old nursery rhyme told us that girls were made from 'sugar and spice and all things nice'. Boys were made from 'slugs and snails and puppy dogs' tails'. But scientists have been working out how humans are really put together. We grow from a single cell into a body containing millions of cells. And why do we grow to be humans rather than puppies? The answer lies in our genes.

Genes are tiny sections of DNA, a chemical that is found in every living cell. DNA can be pictured as a ladder, with genes being like the rungs of the ladder. Every gene has its own special part to play in making different cells. It is the whole pattern of our genes – called the human genome – that makes us the way we are.

Now two teams of scientists have made a first 'map' of this pattern, using 3 billion letters to label the bits of it. Their work has been hailed around the world as a 'magnificent achievement.' Bill Clinton, the US President said, 'This is without a doubt, the most important, most wondrous map ever produced by humankind.'

All humans share 99.9% of the bits of the human genome. This means we are much more similar than we are different. All our differences are caused by a tiny proportion of genes.

Those differences include getting serious illnesses like cancer that attack some people and not others. Scientists are confident that knowing more about our genetic map will lead to new treatments for such diseases.

John Harris, a genetic scientist, also believes that we can live longer if we pay atten-tion to our genes. Ageing happens because the cells that make up our bodies cannot repair themselves as we get older. Genes control the repair of cells. Therefore, it should be possible to change the way our genes work so they repair cells better.

Dr. Harris said, 'In the past 50 years, average life span has increased from 46 to 64 years. We could double that. Eventually, people could live for 1,200 years.' But he also warned that if people lived a lot longer, then societies would have to face many new kinds of problems that we can only begin to imagine.

For one thing, treatments for ageing or illness could be very expensive. Only wealthy people living in rich countries may be able to afford them. Some scientists think that more lives would be saved or improved around the world if money for genetic research were spent on simpler things like making sure everyone has clean water.

Scientists also disagree about who should own knowledge about human genes. Two teams worked on decoding the human genome. One, led by Dr. John Sulston, believes that 'the map of life' should be shown to anyone who wants to read it. The other, led by Dr. Craig Venter, thinks that companies should be able to sell their knowledge to cover the costs of their research – and to earn some profit.

Claiming ownership of genetic knowledge will not be easy, however. Lord Sainsbury the British Minister for Science said, 'You shouldn't be able to patent a discovery, only an invention. Dr. Venter would have to prove that his team has invented something.' At the moment both teams are willing to share. In the future – who knows?

Newswise headlines

Before reading

Study these possible headlines for the story you are going to read. They could all fit the story but they highlight different parts. Try to predict what the story will be about. Write down your ideas or tell them to others.

Scientists read the book of life

Scientists rewrite the book of life

Who owns the book of life?

Genes could make us live for 1,200 years

All human life is here

We are more similar than we think

Secrets of life sold for profit

End of cancer in sight

Girls are not made of sugar and spice

People are more similar than different

After reading the story without a headline

Read the list of possible headlines again. Choose 3 that you think should be used.

Then choose one of the three that expresses your attitude to the story. Think carefully before you choose and take notice of even small differences. Write down the reasons for your choice or tell them to others.

Do you think the writer chose the same headline as you? Why or why not?

Activities

Hotlines

Imagine you have been given the task of interviewing Craig Venter. Talk with your neighbour or in small groups about what questions you might ask him and select one or two that you would recommend to the whole group.

When all recommended questions have been put on a board, the whole group should try to agree on the order of questions for an interviewer's clipboard.

Finally, speak or write possible replies by the character for each question. If you choose to speak the replies, you could take turns in the 'hot-seat' to answer each question. Follow-up questions might then be allowed.

Think before you vote

All of the questions in the list below could be answered with a 'yes' or 'no' straight away. Voting is a way of collecting yes and no answers from a group of people to find the most popular choices. As a whole group, you can vote on each question from the list below but do one or both of these things first:

- Choose any questions that you think are interesting and give your reasons why. Discuss some of those reasons with others.

- Think of any 'questions behind the questions'. For example question 4 asks, 'Are the differences between people more important than the similarities?' A question behind this question could be, 'What kind of differences and similarities are there between people?'. Collect your questions and talk over interesting ones. Try making a *question web* (see p59)

Voting questions

1. Can scientists tell us more about what makes us human than we can tell ourselves?

2. Was the mapping of the human genome a more magnificent achievement than the Apollo mission to the moon?

3. Is the map of the human genome a more wondrous map than the astronomers' map of the universe?

4. Are the differences between people more important than the similarities?

5. Would you like to live for 1,200 years if you were one of only a few people to do so?

6. Do you think money should be spent on clean water for more people before it is spent on researching the genome?

7. Do you think the human genome is the sort of knowledge that is too important to be 'owned' by just a few people?

Key sentences, key questions

Read the story carefully in pairs

- Underline in red the sentences that give you information that is important to the story.

- Underline in blue the sentences that make you think, or interest you in some way.

Pick out one or two of the underlined (key) sentences to ask questions about. Try to make the questions good ones for discussion. Share the questions with the rest of the class.

Then discuss the questions in small groups (with a report back) or as a whole class.

Sample key sentences

Here are some sample sentences to try out if you find it hard to find your own. The whole group should choose some to ask questions about. Write the questions down for all to see.

Discuss the questions in small groups (with a report back) or as a whole class.

1. Scientists have been working out how humans are really put together.

2. The answer lies in our genes.

3. It is the whole pattern of our genes – called the human genome – that makes us the way we are.

4. Two teams of scientists have made a first 'map' of this pattern, using 3 billion letters to label the bits of it.

5. Their work has been hailed around the world as a 'magnificent achievement'.

6. All humans share 99.9% of the bits of the human genome.

7. This means we are much more similar than we are different.

8. Ageing happens because the cells that make up our bodies cannot repair themselves as we get older.

9. In the past 50 years, average life span has increased from 46 years to 64.

10. Eventually, people could live for 1,200 years.

11. If people lived a lot longer, then societies would have to face many new kinds of problems that we can only begin to imagine.

12. For one thing, treatments for ageing or illness could be very expensive.

13. Scientists also disagree about who should own knowledge about human genes.

14. 'You shouldn't be able to patent a discovery, only an invention.'

Hidden gold

Girls and boys

1. Is it possible for girls to talk about boys without being unfair to them? If so, how?

2. Is it possible for boys to talk about girls without being unfair to them? If so, how?

3. Is it possible for girls and boys to talk about girls and boys without upsetting each other? If so, how?

4. Does a girl/boy like what they like because they are a girl/boy, or because they are a unique person?

5. Is part of what makes you a person the feeling that you are a boy or a girl? (What is it to feel that you are a boy or a girl?)

6. Is part of what makes a person unique the fact that they don't always like what the other members of their family/ school/sex like? (Is it a good thing that people don't all like the same things?)

7. Do you think it's true that most girls like some things that most boys don't like, and vice-versa? Even if that is true, would there be anything wrong with liking different things from what most of your sex likes?

Maps and patterns

1. What do we mean by a pattern on a curtain?

2. What do we mean by a frost pattern on the window?

3. Can you think of any other patterns?

4. Do all patterns have something in common? Do they have to be 'regular'?

5. People talk about patterns of behaviour. What might those be?

6. Is a geographical map a pattern of some sort?

7. If there were no geographical maps, what would the effects be?

8. Are there any 'real' maps apart from geographical ones?

9. A book is made up of thousands, maybe millions, of letters in various sequences or order, that are translated into meaningful ideas by anyone who can read the 'code'. The human genome consists of 4 letters (representing 4 different substances) repeated in different sequences nearly a billion times. Could it, then, be described as the 'book' of human life?

'Magnificent'

1. Some buildings are described as 'magnificent'. What qualities makes them magnificent?

2. Some sportspeople are described as 'magnificent'. What qualities do they have?

3. What makes an achievement magnificent?

4. Can something be magnificent even if humans have nothing to do with it?

5. How would you define 'magnificence'?

Wondering about wonders

The word 'wonderful' can be used both for human achievements and for 'natural' wonders, such as the *Grand Canyon*. As a whole group, discuss and decide on 5 or 10 of the most wonderful human achievements known to you. (You might do some research about this first, looking up the *Seven Wonders of the Ancient World*, for example, but noting that there have been many equally, or more, wonderful achievements since then.) Then see if you can agree a similar list of wonders of nature. (These may be very large things, such as the universe itself, but they may also be very small, such as a heart or brain.)

Finding problems and facing problems

1. If a flood were about to hit your town but you did not know it, would you say it was a problem for you?

2. Is something only a problem if it is recognised as such?

3. Can you imagine something to be a problem in the future but it turns out not to be? (Try to give examples.)

4. Can you imagine something to be a problem in the present, but in fact it is not? (Give examples again.)

5. Are some people better at finding problems than others? If so, why/how?

6. Are some people better at facing problems than others? If so, why/how?

7. What does it really mean to 'face' a problem?

8. What is needed to face up to a problem, apart from courage?

9. Do you need to appreciate the exact size of a problem in order to face it properly?

10. What sort of problems do you imagine might arise if people began to live much longer?

11. How might society either prevent them or overcome them?

Saving lives and improving lives

Note. The last question may not have a simple answer. It might improve older people's lives if scientists could come up with cures for such diseases of old age as arthritis. But in doing that they might extend life even further and possibly create other problems in the long run.

1. Could someone have their life saved but find that it is worse than it was before? (Try to give some examples.)

2. No one wants an illness, but does it follow from this that all people who are ill are more unhappy than people who are not ill?

3. In general would you say that a short, happy life would be better than a long, unhappy one?

4. Why is clean water so essential for improving life as well as saving it?

5. What else would you say is essential for avoiding a life of too much hardship and ill health?

6. Do you think the scientists should concentrate on improving life for the many, and not on lengthening life for the few?

Lines of reasoning

Reasoning might be defined as the thinking that leads to conclusions. It may be very precise, as in mathematical reasoning: *if a = b and b = c, the conclusion is a = c*. Or it may be more 'loose', as in practical reasoning. For example, you enjoyed going to town yesterday and you are bored today, so you conclude, or decide, that you should go to town again today. This conclusion is not as foolproof as the mathematical one, because you might go to town today and still be bored. Can you think of reasons why this could be so?

Lots of people's reasons for believing or doing something may appear good enough at first sight, but not so good on *second thoughts*. Here are some lines of reasoning from the story that may need *second thoughts*. If you follow up the question(s) attached you may be able to reason rather better yourselves.

1. **Reason**(ing): We grow from a single cell into a body containing millions of cells. We know the genes in our cells control their growth.

   Conclusion: (Therefore) We know how humans are really put together.

   Questions: If you know what something is made up of, does it follow that you know how the ingredients are put together? Could we know that genes control how our cells grow, but still not know how they control the growth? Could we know how they controlled it, but still not know why it works that way?

2. **Reason**(ing): All humans share 99.9% of the bits of the human genome.

   Conclusion: (Therefore) This means we are much more similar than we are different.

   Questions: Might some differences be very important? If so, in what way? Could the differences between humans turn out to be much more important than the similarities? (But what would count as important? And why?)

3. **Reason**(ing): Genes control the repair of cells.

   Conclusion: (Therefore) It should be possible to change the way our genes work so they repair cells better.

   Questions: Could we change the way our genes work without understanding how they work in the first place? Even if we did understand how they worked, might it be impossible to change it? Could most things be changed if only we knew how they worked?

4. **Reason**(ing): In the past 50 years, average life span has increased from 46 to 64 years.

   Conclusion: (Therefore) We could double that.

   Questions: What reasons might there be for the increase in life span in last fifty years? Do those reasons have anything to do with genetic engineering? Might it be reasonable to predict that life span will continue to increase on the basis of the increase in the past 50 years? Is Dr. Harris predicting an increase on the basis of evidence from genetic experiments? How might a genetic scientist 'experiment' in regard to ageing?

5. **Reason**(ing): Treatments for ageing or illness could be very expensive.

   Conclusion: (Therefore) Only wealthy people living in rich countries may be able to afford it.

   Questions: Just because something could happen, does it mean it will happen? How could we tell whether new treatments for ageing or illness will actually be expensive? Are there wealthy people in poor countries? Are there poor people in wealthy countries who already have expensive treatments? If so, how does this happen? (Who pays for it?)

6. **Reason**(ing): If money for genetic research were spent on simpler things like making sure everyone has clean water …

   Conclusion: (Then) more lives would be saved or improved.

   Questions: Where would money for genetic research come from anyway, if not from companies selling their knowledge for profit? If it were to come from governments of rich countries, why should they consider spending it on improving water in poor countries? Is making sure everyone has clean water really a simple thing? If not, why not? Could saving more lives in poor countries lead to other problems, similar to those of extending the lives of people in rich countries?

7. **Reason**(ing): If anyone wants to read the 'map of life'…

   Conclusion: (Then) it should be shown to them.

   Questions: Normally do we agree that just because someone wants to do something they should be allowed to do so? Normally do we agree that scientific information should be available to anyone who wants to read it? If not, when do we disagree, and why? Are there some pieces of scientific information that we feel ought to be available to everyone, and if so, why? Could 'the map of life' be just such information?

8. **Reason**(ing): Research into the human genome cost money.

   Conclusion: (Therefore) The research companies should be able to sell their knowledge about it.

   Questions: Could the company have done its research so far without money? If not, then would it not already have been paid for its work? If so, why should it want to be paid again? If so, should it have embarked on the project without already finding a source of money? Should this sort of research be funded only by governments, who might be better able to judge whether it is worth the money needed? If so, does the same argument apply to research into all drugs for curing disease? If not, why not?

9. **Reason**(ing): You shouldn't be able to patent a discovery, only an invention.

   Conclusion: (Therefore) Dr. Venter should prove that his team has invented something.

   Questions: If you 'discover' that two ingredients make a tasty drink, is that not also an invention? Could it be argued that some discoveries take either so much time or expense that they should be patented, even if they are not regarded as inventions? Is it possible to prove that an idea is your own in the same way that you can prove that a physical invention is yours?

Question chains

What difference does a person's sex make, and when should it make no difference?

Note. The first half of this question probably demands more of a scientific answer than the second. If this is not obvious to the members of the club, it could be worth first exploring what we mean by a scientific answer – and what other sorts of answers there could be. Then, secondly, they could conduct a systematic research or review of the scientific differences between the sexes

---

Research/review. The most obvious differences between females and males are the physical ones; and among these, the differences on the outsides of their bodies are more obvious than the ones inside their bodies. They could even be ignored for the purposes of this investigation, though there might be some value in attempting to discuss the practical consequences of males having penises and females having breasts, for example, or of the fact that, in general, women (though not girls up to a certain age) are smaller than men.

If that subject is too tricky, however, the members could move straight on to research or review of the 'inner' or less obvious physical differences. This could begin at the beginning, by establishing how the genes determine whether an embryo is male or female, and at what point the sex of the embryo can be observed. Then, is there any difference in the way the embryo interacts with his/her mother?

There is no need, of course, to get too technical about this. The purpose of the investigation is simply to discover some of the physical differences that have been well-established through scientific research, such as between male and female hormones, or muscle structure, and perhaps brain structure.

Some of these differences translate directly into different potentials – for example, (in general) weight-lifting or language-processing – but of course this is where the subject matter can get especially tricky: general observations can all too easily be seen as implying judgements about the individual, physically or even morally.

This, then, might be the point at which to move discussion towards the second half of the question. The fact is that everybody is different from everybody else: some are stronger than others and some speak more fluently than others. The following question chain might be helpful.

1. If dogs are generally bigger than cats, does it follow that all dogs are bigger than all cats? If girls are generally quicker at learning words than boys, does it follow that all girls are quicker than all boys?

2. If boys are generally quicker at running than girls, does that give them much of an advantage in everyday life? Is it often an important difference to be able to run faster?

3. Recently in the UK girls have had better exam results, on the whole, than boys – but before then it was the other way round. Could this just be chance, or might there be other explanations?

4. Even if it could be shown that girls' brains in some way (and on the whole) make them better at exams, would that give them much of an advantage in their future lives? What other things are important for 'doing well' in later life?

5. What exactly do we mean by 'doing well' in life?

6. Girls' brains also produce the hormones that sometimes result in headaches, physical discomfort or even mood swings. Similarly, boys' hormones may be connected with getting aggressive. Should they be shown sympathy for such things, or should they be expected to 'control' their moods?

7. Is it really possible to control a mood? If so, how?

8. Perhaps the biggest difference between the sexes is that most women have babies, and no men do. Does the possibility/ idea of having babies make a difference to women/girls from quite an early age? If so, what difference(s)?

9. Does the fact that they will never bear babies make a difference to the way that men think and behave?

10. Perhaps a lot of women want to spend a lot of time bringing up their babies, but should all women be expected to do so? (This is a tricky question and needs very careful thinking.)

11. Could a single father bring up a baby just as well as a single mother? (Try to give plenty of reasons for your view.)

12. If a lone father were with his baby on a ferry that was sinking, would he be entitled to get into a lifeboat for 'women and children only'?

Are maps more wondrous than the things they map?

1. If you had a 'wonderful' holiday near the sea, and another holiday in the 'wonderful world of Disney', would there be anything in common to the wonderfulness?

Before proceeding with the question chain, members might do some research into the so-called seven wonders of the world; and perhaps put forward suggestions for modern wonders of the world. They could even distinguish between natural wonders and human-made wonders.

2. Do you wonder more at a huge thing such as the sun, or at a tiny thing such as humming-bird?

3. When you see a picture of the earth taken from space, do you wonder more at the space around the planet, or at the planet itself or that humans are able to photograph it?

4. In pairs or small groups, share your answers to the following questions, and then compare your answers with those of the whole group: What is the most wondrous sight you have seen directly yourself on this planet? What made it wondrous for you?

5. Does something have to be seen for it to be wondrous?

6. Can an idea be wondrous?

7. Suppose visitors from outer space landed in this country centuries in the future, and found no remains of human beings, except a map clearly showing the coastline of the country. Which would they regard as more wondrous, the country or the map?

8. Why might they regard the map as wondrous?

9. What is it that makes the human genome 'map' wondrous?

10. Would you say the human brain is the most wondrous thing on earth?

11. Could there be anything more wondrous than the universe itself?

Would it really be a problem if people lived longer?

1. The average age of people in the UK today is above 70. Does it surprise you that 100 years ago it was much closer to 50? Can you think of reasons for this increase?

2. Do the reasons you put forward suggest that people used to lead harder lives as well as shorter ones?

3. Is a hard life necessarily a miserable one? Is a 'soft' or comfortable life necessarily a happy one?

Research/review. Genetic research promises to reduce or eliminate the effects of ageing in the future, but at the moment people living into their 80's begin to suffer from various problems to do with ageing. Make a list of some of the main diseases or other effects that old age might bring. Then make a table of the practical problems that such effects have for old people, and also the practical problems they might have for other people, including society as a whole.

4. If you could choose to die painlessly at age 60 or painfully at age 80, which would you choose and why? (If your answer 'depends', try to say what it depends on.)

Suppose that scientists could extend everybody's life to 100 years or more, without the effects of ageing...

5. Would you think it right and fair for people to have to work beyond the present retiring age of 60?

6. Would you expect most people to live with each other (as partners) right through to 100? If not, would they mostly split up and live alone, or find another partner to live with?

7. Is there a limit to improving the quality of human life?

Can knowledge be owned?

1. Was there a time/place in which no one owned any land? If so, did anyone own anything then?

2. Who said who could own land in the first place?

3. Do animals own any land? Do birds own their nests?

4. Should water be free to everyone? If so, who should pay for it to be brought to places that are short of it?

5. If not, should it be owned by only some people, or by everyone?

7. Does anyone own the air you breathe? If the air were so polluted that humans had to live in big glass houses, could air become something that was owned?

8. How much of your knowledge comes from other people, and how much is yours without any help from others?

9. There is a saying, 'Knowledge is power'. What is meant by this?

10. Does all of your own knowledge give you power? Which bits of your knowledge would seem to give you most power?

11. Do you mind paying money for books or other ways of increasing your knowledge?

12. Are you normally willing to share ideas of your own freely with others?

13. Do you have, or can you imagine having, ideas that you would wish to sell? If so, are there different ways of selling them?

14. Do you think that the scientists who worked out the human genome are entitled to try and sell their knowledge, or do you agree that the 'map of life' should be free to anyone who wants to read it? (Try to give your reasons.)

Focus on wealth and health

Should the rich be taxed to provide better health care for the poor?

Note. The word 'wealth' comes from the old word *weal*, meaning 'good' – which would seem to give it a wider meaning than its regular use. Wealth, in other words, may be more than just physical 'goods' that can be bought and sold. Does it include health, then? Many people might think so, and some would even say that health is the greatest of goods. But because it is not such a material thing, there are some tricky questions surrounding what it is, and how it is connected to other, more obvious, forms of wealth.

1. Is health just the absence of disease, or is it something more like general fitness? (What counts as a disease, anyway? Is a sore foot a disease?)

2. The word 'health' is of course connected with the word 'heal', and the original meaning of healing was 'making whole'. In what way might an unhealthy person be thought to be not 'whole'?

3. If a person is missing someone they love, are they unwhole? If so, are they unhealthy?

4. We measure ordinary wealth by money – how much it costs. Is it possible to measure a person's physical health?

5. What do we mean by 'mental' health? Is it possible to measure it?

6. On the whole, poorer people seem to have more health problems than better-off people. What might be some of the reasons for this? (Think of poor people in this country, as well as in much poorer ones.)

7. If a baby is born into a poor family, and is more likely to suffer ill health through childhood than richer children, would it be fair to expect richer parents to contribute some money towards the health of the poorer children? If so, why?

8. What, if anything, can be expected of the poor baby's family in respect of the baby's health?

9. In effect, of course, richer people in the UK do pay more towards the NHS and general health care than poorer people. But is there a limit to the amount they should be expected to pay for others' health care, including poor people in the rest of the world? How can you decide a 'fair' amount?

10. Once people have paid a 'fair' share of taxes, should they be allowed to spend the rest of their money how they like – including on expensive treatments to keep them healthier and 'younger'?

11. Is there a limit to the improvements that can be made to people's health?

This question of how best to use tax money on the NHS and general health care is also raised in connection with medicines. Recently a drugs company was licensed to sell a 'shyness' pill to doctors in the NHS. The pill was called 'Seroxat' and has been found to reduce people's anxiety and lack of social confidence. But some people argued that there were other, more important, things that doctors should be spending their money on.

11. If someone is shy, does that mean they are 'unhealthy'?

12. Can a person be unhealthily shy? If so, how would you recognise this?

13. If Seroxat is able to make people more confident in general, why shouldn't it be made available for anyone – not just extremely shy people?

14. What if the drugs companies produced a 'happiness' pill with no bad physical side effects? Would it be good to make that available for doctors to prescribe?

15. Would a person with a life's supply of happiness pills be better off than an Olympic Gold medallist?

Games and activities

Problem-finding and problem-solving

Procedure. Each member of the group should be asked to think for a while and write down two or three sentences beginning 'The problem with ...... is ....' (*eg* 'The problem with cars is that they are noisy,' or, 'The problem with holidays is having to pack for them). Members should then work in pairs to choose the most interesting example from each other's list. These examples will then be written on the board for all to see.

The pairs will next see how many of the problems on the board they can provide a solution for. After 5 minutes or so, everybody's solutions can be compared and, if desired, points can be given for solutions.

Note. This activity might benefit from a short discussion before it begins on the question of what a problem is, and how some people seem to be better at finding problems than others. Is it because they are more observant, or less easily satisfied, or what?

Discovery and Invention

Procedure. Members should split into two groups and be given the following list of items to decide whether each of them was a discovery or an invention.

> Salt, glass, fire, cooking, electricity, electric light bulbs, sand, silicon chips, printing, wheels, steam power, steam irons, the North Pole, the human genome, penicillin, vaccines, Coca Cola, tea

Note. The results could be discussed but no points awarded since in some cases it is hard, if not impossible, to give a straight answer. (Members will discover this by discussion. If the leader wants to make the discussion more lively, they could insist that for the purposes of the activity each team produces an unequivocal answer, *ie* not a 'could be either' answer.)

Development. Once it has been established that some cases are hard to tell, the teams could be challenged to come up with 10 other examples of their own that are equally hard to tell. Then a further discussion could take place in an attempt to give criteria or a definition for what counts as a discovery and what counts as an invention.

Human nature

THE
Philosophy
F I L E S

Starting points	Digging deeper

We humans share 99.9% of our genes with each other, but we also share 98% of our genes with chimpanzees. These facts may well leave us wondering whether we are much closer to chimpanzees than we might think 'at first sight'.

Individually, or in small groups, try to list 5 of the most important similarities between chimpanzees and humans. Then try to list 5 of the most important differences between them. Be ready to justify your choices to others in whole group discussion. (You should be asking yourself what counts as an important similarity or difference.)

Such discussion can provide a foundation for the following enquiries, which all relate to a basic question that people have asked down the ages: 'What is it to be human?' Or, as it is sometimes expressed: 'What is human nature?'

One view of humans is that there is nothing very special about them: they are animals like any other ones, subject to the same 'laws of nature'. That is a view expressed by a French philosopher, **Voltaire** (1694 – 1778): 'It would be very singular that all nature and all the stars should obey eternal laws, and that there should be one little animal five feet tall which, despite these laws, could always act as suited its own caprice or fancy.'

1. Is it human nature to want to defend your family, or is it just animal nature? If it is just animal nature, can we judge it to be right or wrong?

2. Is it human nature or animal nature to want to defend your territory and your property?

3. Do you think that animals do everything according to 'instinct'? If so, is that the same as saying that their genes 'programme' them to behave the way they do?

4. How much of what you do, day to day, is done on instinct? Is the rest of what you do programmed by your genes in some way, or not at all?

5. If something is programmed by your genes, would that count as basic to your nature? (Try to give several examples.)

6. How much of human behaviour do you think is programmed by our genes? Would all those things count as basic to human nature?

7. Do you think there are things you do that are not programmed by your genes?

8. Even if you were programmed by your genes to be inventive, would it make sense to say your inventions were programmed? If not, why not?

Starting points	Digging deeper

Joseph Butler (1692 – 1752), an English philosopher living at the same time as Voltaire, seemed to hold a slightly different view: 'From his make, constitution, or nature, man is … a law unto himself.' But he went on to say that 'He hath the rule of right within.' By 'the rule of right' Butler meant something like 'conscience', and he thought it was given specially to human beings by God.

1. Some people think that what makes humans quite different from animals is that we use language. If language enables us to have ideas of our own, does it follow that these ideas are free from the laws of nature?
2. Do you think some other animals might have enough language to make them have ideas of their own?
3. Conscience is sometimes referred to as a 'voice within', or even as the 'voice of reason'. In what ways does conscience seem like a voice?
4. If conscience is a bit like a voice, could it possibly come from a being other than a human? Where else could it come from?
5. Could language itself have conscience built into it?

People sometimes say that 'conscience dictates' – as if it gave them no choice. But most people think they can choose between doing as their conscience 'tells' them or doing otherwise. The question of how much we are 'free' to choose has a long history. In ancient Greece and Rome, for example, both **Epicureans** and **Stoics** thought our choices and actions were determined by inevitable causes. More recently, though, people calling themselves existentialists have agreed with **Jean-Paul Sartre** (1905 – 1980) that 'Man is nothing else but what he makes of himself'.

1. When you choose between different flavours of drink, for example, would you say that is a free choice, or one which is determined by the way your body is?
2. If you hear the 'voice of conscience' but decide to do otherwise, do you feel you are acting freely, or that you are just being driven by other 'voices' or desires?
3. If you know someone very well, are you able to predict some of their choices?
4. Just because you can predict someone else's behaviour, does that mean they could not have behaved differently?
5. If you make a decision that you know will change your life enormously, is that a case of taking your life into your own hands?
6. What is meant by the expression 'making something of yourself'?
7. Do you think you can change your character, similar to how you can change your mind?

Starting points

Digging deeper

Whether humans can determine their own futures may be a question that, in the end, we prefer to set aside. We can still be left facing a question about humans that arises in a different way from Butler's belief that they have a 'built-in' conscience. It is whether human beings are 'naturally' good. Socrates said, optimistically, 'To prefer evil to good is not in human nature.' The Scotsman **David Hume** (1711 – 1776) believed that 'all men are similar in their feelings and operations', of which he reckoned that sympathy was the 'chief source of moral distinctions'.

1. When people do very cruel, or even wicked, things, do you think something may have gone wrong with their 'programming'? Or do you think that we might all be programmed to do similarly wicked things if certain circumstances arise?

2. Many people might say that we all have the potential for both good and bad, but what sorts of circumstances bring out the best or worst in us?

3. Do you think that even the most cruel of humans have some good inside them? And that even the kindest of humans have some bad inside them?

4. When you try to decide what is right or wrong, do you ever let sympathy into your reckoning? Should you always allow sympathy in? (Try to think of various examples.)

5. Could being sympathetic to someone be bad for them, or does it depend on how you express your sympathy?

6. Might it be possible to make yourself have better feelings? If so, could you make your feelings so consistently good that you would become an altogether good person?

The questions of whether humans can make free choices and whether humans are naturally good come together in a rather pressing way when we consider how to treat people who have behaved badly. Could even 'good' people be driven to commit a crime by circumstances beyond their control, or should they always be held responsible for their actions? **G.I. Gurdjieff** (1866 – 1949) expresses the thought in a dramatic way: 'Man is a machine ... but when a machine knows itself it is then no longer a machine, at least, not such a machine as it was before. It already begins to be responsible for its actions.'

1. In what ways does it seem okay to think of a person as a machine?

2. Are there ways in which it seems quite wrong to think of people as machines?

3. In what sense do you 'know' yourself?

4. Is there a difference between feeling responsible and being responsible?

5. If someone gets drunk and commits an offence, are they held responsible for their offence? If so, why?

6. Would it be better to say they are being held responsible for getting drunk rather than for the offence itself? If not, why not?

7. Is it unfair to hold a person responsible for something they did not intend to do?

8. If a criminal has a personality disorder which they cannot change of their own will, should they still be punished for their crime?

9. If our behaviour can be affected by drugs, can we still be held responsible for our actions?

10. If it were possible to stop a criminal from offending again by giving them a harmless drug, would that be better than sending them to prison?