

OUT OF THIS WORLD

TEACHERS' GUIDE : STAGE THREE

Notes not included in the original material are printed in green Links to material elsewhere in the pack are given in blue.

This stage offers considerable opportunity for diversity in method of use, depending, among other things, upon the time available, and the context in which the pack is used. Stage three may be sub-divided into three phases:

1. Establishment and consolidation of four separate groups, who are encouraged to develop their own corporate identity, and determine their own system of government, laws, and customs.
2. Interaction of the four groups to explore common interests and opportunities for co-operation, leading to an exchange of resources. It is expected that some conflict of interests will also arise. many concepts and issues are introduced in this phase, including interdependence and conflict resolution.
3. Debriefing, and discussion on the first two phases, leading to a consideration of probable and preferred futures at both personal and global levels. Finally, the usefulness of the 'Spaceship Earth' model is discussed.

The suggested method of use given below assumes a class size of at least sixteen students, but the materials can be used to stimulate discussion with much smaller groups, although role play exercises would then require some modification. As in the first two stages, teachers should feel free to select, adapt, or supplement OOTW material to suit their own specific requirements. suggestions are given for possible extension work. The numbers in the left hand column refer to specific 'discussion cards' and 'decision sheets'). Some topics may have been considered already in Stage One.

It would be impossible to explore all the suggestions for extension work and discussions within the context of this 'Out Of This World' exercise but it does provide the opportunity for cross-curricular links with Science, Humanities, Language and creative writing and drama

Starting Stage Three

If Stage Two has been completed, 'crews' which have landed successfully may have already received a card describing their landing site. In any case, remaining crews should have been 'rescued' and absorbed into one or more of the successful groups. The four resulting communities (identified as Delta, Theta, Epsilon & Omega) will not necessarily be equal in numbers, harmonious, nor homogeneous. Students should be encouraged to identify with their new group, and any element of discord within a group used as a basis for discussion of conflict resolution strategies. It is important that each community should be allocated a clearly defined 'territory' within the room.

It is suggested that re-usable materials, e.g. resource tokens, are printed on card and laminated. Three copies of Resource Sheet 1 and 10 copies of Resource Sheet 2 are recommended.

MATERIAL & PROCEDURE	NOTES & SUGGESTIONS FOR EXTENSION WORK
<p>3.1A LANDING SITE 3.1B SURVIVAL AT LANDING SITE</p> <p>Issue the specific 3.1A & 3.1B sheets to the 4 groups. Allow about 10 minutes for study of the sheet and group discussion. A note of responses to questions iii, vi, and vii can be made on the Mission Control Sheet for future reference.</p> <p>Further time may be allowed for integration, creative writing or art.</p>	<p>There is a different sheet for each of the four groups</p> <p>Students should be encouraged to think of themselves as ‘Deltans’, ‘Thetans’, ‘Epsilonians’ or ‘Omegans’. They could be asked to illustrate what they think their landing site would look like (from written description), or to design their own community badge, flag or coat of arms, or to write a poem or song about their community.</p> <p>Students could make a list of all things around them that they would be prepared to give up and still remain happy.</p> <p>Further work could include:</p> <ul style="list-style-type: none"> a) A study of similar geographical environments on Earth b) Project work on company logos, badges, national flags, etc. c) ‘Syndicated Science Fiction’ (whole class activity). One person starts a story about landing on a strange planet, and each person in turn adds the next part. (Variation of ‘fortunately/unfortunately’*) d) Selected Science Fiction about visiting other planets.
<p>3.2A DECISION MAKING & GOVERNMENT 3.2B OUR WAY OF MAKING DECISIONS</p> <p>Issue sheets 3.2A & 3.2B to each group. Allow about 10 minutes for group discussion and completion of 3.2B.</p> <p>Either visit each group or collect in their responses, and note down on the Mission Control Sheet the names of the members of each group and their ‘responsibilities’, if any, at this stage.</p> <p>As a whole class activity, ask one spokesperson from each group to describe their decision making process. This can lead to a full discussion on the need, or otherwise, for leaders and a system of government. It also leads into the next topic of Law & Order</p>	<p>‘Rescued’ crews are sometimes regarded as second-class members of the group; this can open the way for discussion and further work on the subject of prejudice, discrimination and apartheid.</p> <p>By requiring one person to fill in the sheet and/or speak on the behalf of the group, a leader of some kind should emerge. The leader will not necessarily have been a Captain of a spaceship.</p> <p>Extensions work could include:</p> <ul style="list-style-type: none"> a. Study of different systems of government. Can parallels be found to the students’ devised systems? b. Study of our own democratic system and/or political parties. This would be particularly appropriate if a General Election or Local Election were in the offing. c. Visit to local council meetings or Houses of Parliament. d. ‘Constituency’ game. This may help to focus on proportional representation versus simple majority form of voting.

<p>3.3A LAW AND ORDER 3.3B RULES OF THE COMMUNITY</p> <p>Issue sheets 3.3A & 3.3B to each group. Allow at least ten minutes for discussion, at first in pairs, and then within the whole group.</p> <p>An agreed set of rules for each group can then be written down on sheet 3.3B, or, better still, displayed on a large chart.</p> <p>Class discussion could then take the form of students visiting other communities where, in response to the visitors' questions, the hosts must explain and justify their rules.</p> <p>Whole class discussion on the main issues can then follow, if desired.</p>	<p>Working in pairs, students devise and rank 10 rules for the community, then share their ideas with another pair, to agree on a common ranking, and finally to agree on a list and ranking for the whole group.</p> <p>Discussion will probably raise such issues as corporal and capital punishment, human rights, treatment of minorities, dissidence and protest.</p> <p>Students should be encouraged to consider the fairness of their rules, and those of the other groups.</p> <p>Follow up work could include:</p> <ol style="list-style-type: none"> Study of our legal system, including our law making and law enforcement processes. Visits to local courts, and visits from police, JPs, etc., could be arranged. The work of Amnesty International, Minority Rights Groups, Commission for Racial Equality. Debate on corporal and/or capital punishment: 'An eye for an eye, and a tooth for a tooth' Consideration of other systems of justice, e.g. Sharia Law Consideration of the United Nations declaration of human rights. What do students regard as their rights? A new look at school rules; students could be asked to produce their own set of school rules, and suggestions for their enforcement. They could perhaps be given the opportunity to discuss their suggestions with the Headteacher.
<p>3.4A Δ,Θ,Σ,Ω TRADITIONS & WAY OF LIFE 3.4B Δ,Θ,Σ,Ω CUSTOMS & LANGUAGE</p> <p>Issue the appropriate sheets to the 4 separate communities, and impress upon them that they must not divulge the contents to anyone from another group.</p> <p>Keeping the groups separated as far as possible, allow about 15 minutes for groups to talk about and develop their role.</p> <p>No class discussion should take place until after the next exercise has been completed</p>	<p>These can be used in addition or instead of the general 3.4A & 3.4B above.</p> <p>Groups should have the opportunity to practice their 'customs', signs and 'language' out of sight and hearing of other groups if at all possible.</p> <p>The 'customs' suggested on the 3.4 sheets can be altered to take account of local situations that might cause difficulty or embarrassment, especially in schools with a multi-ethnic intake.</p> <p>There is always the possibility of a 'spy in the camp'. If this situation is encountered, it can lead to discussion of espionage in general, at some appropriate point.</p>

<p>3.5A THOUGHTS ON WHAT WE'VE 3.5B LEFT BEHIND</p> <p>Issue 3.5A & 3.5B to each group. Allow about 10 minutes for discussion and making of notes.</p> <p>Class discussion may take the form of a circle, in which each person is invited to contribute their own response to the question sheet 3.4B without comment.</p> <p>An open discussion on customs can then follow.</p>	<p>These can be used in addition or instead of the community specific 3.4 sheets below.</p> <p>Religious customs are likely feature largely in responses. It is most important that no-one is made to feel threatened or ridiculed on account of their personal or religious beliefs. Handle sensitively !</p> <p>There also needs to be great awareness of reluctance of any students to discuss their home environment and there should be the opportunity to 'opt out' of this exercise without recrimination. It is also possible that some disturbing information about a student's home life could emerge.</p> <p>If the community specific sheets 3.4 are not going to be used, the cross-cultural simulation Bafa Bafa could be employed at this stage.</p> <p>Possible extension work could include:</p> <ol style="list-style-type: none"> Read William Golding's 'Lord of the Flies'. Comparison of World Religions; commonality and differences in beliefs and rituals. Construction of a calendar of customs and important dates from different cultures – especially making use of personal experience of students in a multi-ethnic classroom. Opportunity for demonstration of, or participation in dance, music, and drama of different regions/countries or ethnic/religious groups. English customs could include Morris dancing and Mummers Plays. Research into local folklore and customs. <p>See also the next two sections below.</p>
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<p>3.6A EXPLORATION 3.6B SECRET REPORT</p> <p>Issue 3.6A to each group and allow about 5 minutes to read it through and talk about it. Remind groups to also look back at what they wrote on sheet 3.1B.</p> <p>The first ‘explorers’ visit their assigned community. Visitors and hosts try to find out as much as possible about each other while trying not to divulge all their community secrets. All must stay in role during visits, which should last about 5 minutes each.</p> <p>Issue 3.6B to each group when first visitors return to their own group. Allow about 5 minutes for discussion and note taking (on 3.6)</p> <p>The next visit to a different group then takes place, followed by return to home base for discussion and note taking as before..</p> <p>The third and final round of visits, reporting back and note taking then follows.</p> <p>Each group may then be asked to make up a large chart, showing their opinions and findings about the other groups. Alternatively, if each group is allocated a display board, comments from other groups can be pinned on the board of the group to which the remarks apply.</p> <p>It is important to follow this exercise with a debriefing session and whole class discussion about the feelings and issues raised.</p>	<p>Do not issue 3.6B yet.</p> <p>With younger children this exercise may require more structure and direction; a list of questions and/or more specific things to find out during visits could be arranged.</p> <p>A visiting schedule should be devised and displayed, e.g.</p> <p>1st visit $\Delta \rightarrow \theta, \theta \rightarrow \Sigma, \Sigma \rightarrow \Omega, \Omega \rightarrow \Delta$ 2nd visit $\Delta \rightarrow \Sigma, \Sigma \rightarrow \Delta, \theta \rightarrow \Omega, \Omega \rightarrow \theta$ 3rd visit $\Delta \rightarrow \Omega, \theta \rightarrow \Delta, \Sigma \rightarrow \theta, \Omega \rightarrow \Sigma$</p> <p>If the specific 3.4 role play sheets have been used, strong reactions can sometimes develop out of difficulties in communication between groups. These feelings can be brought out in subsequent class discussion.</p> <p>Reference can be made to the difficulty of communicating with aliens in Stage 1.</p> <p>Groups will need sheets 3.6 again during the trading game described below in 3.7</p> <p>Extension work could include:</p> <ol style="list-style-type: none"> Description of students’ own experiences in visiting strange places, e.g. a new school, unknown town, or foreign country. Non-verbal or limited vocabulary communication exercises e.g. Bafa Bafa, Strange Encounter, Word Wizard. Study of other means of communication e.g. sign language, braille, morse, semaphore, other alphabets and scripts (Cyrillic, Greek, Arabic, Chinese, etc), codes. Looking at other languages of the world. How ‘English’ is English? (See Word House game). Is there a universal language? There are many opportunities here to explore linguistic diversity within the classroom. Accuracy of transmission of verbal reports. Try ‘Chinese Whispers’ or ‘What’s in the Picture?’ games. Newspaper reporting: analysis of reports by different newspapers of the same event. Exercises on editing a newspaper *. This could lead into the whole area of bias, censorship, and influence of the media. See also ‘Galactic Times’ exercise suggested in Stage 1.
<p>3.7A SETTING UP TRADING LINKS</p> <p>Issue 3.7A to each group and allow about 5 minutes for roles to be assigned.</p> <p>Roles should also be recorded on the Mission Control Sheet.</p> <p>Issue blank trading/resource tokens on which each group can write down any natural resource they wish to trade.</p>	<p>This is the prelude to playing the trading game of 3.7</p> <p>It may be useful to remind groups to refer back to their ‘natural resources’ on 3.1A, and their responses on 3.1B.</p> <p>It is preferable if these preliminaries and the trading game itself can take place within one continuous session, or, if this is not possible, with the minimum break of continuity.</p> <p>Groups can be given different numbers of blank tokens.</p> <p>With large groups it is possible to ‘double up’ on roles, but it does not matter if some students do not have a specific role; jobs can be re-allocated during the game.</p>

<p>3.7B RULES FOR TRADING 3.7PM, 3.7TM, 3.7DTM, 3.7FM, ROLE CARDS, 3.8 PM, 3.8 TM, 3.8DTM, RECORD SHEETS, RESOURCE CARDS (I set), RESOURCE TOKENS. 3.7 RES</p> <p>Issue appropriate role cards and record sheets and rules for trading. Allow several minutes for students to study their role. Also issue guide to mineral resources (3.7 RES)</p> <p>Meanwhile, ensure that the room is suitably organised, with 4 distinct home bases clearly labelled with group symbol, a Trade Council table (+ 8 chairs)</p> <p>The Resource Tokens should be set out in separate piles on the Resource Bank Table.</p> <p>The Resource Cards should be divided either randomly, or, better, in a predetermined order into four piles (one for each group) on the resource Bank Table, and clearly labelled with the sign of the group for whom they are intended.</p>	<p>Standard and elementary versions are available for most of this material. Check through the material before playing the game.</p> <p>Simple badges showing role and group symbol will make identification easier during trading,</p> <p>A separate briefing by the teacher may be necessary with younger children for each of the main roles.</p> <p>If a teacher feels that the issues raised by any of the resource cards might prove to be too sensitive, then any such card can be removed before the start, provided that care is taken not to destroy the balance of the game.</p> <p>Predetermining the order and distribution of the Resource Cards allows for greater control of the progress of the game.</p> <p>One or two competent and responsible students could be invited to assist the Resource Bank Director (i.e. the teacher) to enable the teacher to sample what is happening elsewhere in the room.</p>
<p>THE TRADING GAME</p> <p>Call Trade Ministers to the Trade Council Table. They should bring with them their 'natural resource' trading tokens, record sheet, and rules. They can begin trading by offering to exchange these tokens.</p> <p>Call Deputy Trade Ministers to the Resource Bank and issue the first two Resource Cards from the respective piles. Remind DTMs to take these cards firstly to their home base for discussion, and then return to the bank to collect any tokens due. These tokens are given to the Trade Minister, with any briefing from the community as to their use.</p> <p>At regular intervals, issue further Resource Cards to the DTMs until all the cards have been given out.</p> <p>At least once during the game, call for all Ministers to their home base for a 'suspension of trading' and 'review of resources'. During one of these reviews, ministerial roles can be re-allocated, to give everyone a chance of holding a position of responsibility.</p> <p>If possible, keep a record of all cards and tokens issued.</p>	<p>Trading may get off to a slow start as students take time to become familiar with their roles. It may be worthwhile, after a few minutes of trading, just to remind students of their roles and responsibilities, and sort out any misunderstandings.</p> <p>Encourage students to keep, as far as possible, to their assigned roles and location. However, as the game develops and more students become more involved (and excited) some blurring of roles may be permitted, at the teacher's discretion.</p> <p>The time allocated for trading can vary considerably, but should be sufficient to allow students to get the feel of the exercise, and experience some of the dilemmas of decision making.</p> <p>To speed up, or simplify the game, some Resource Cards can be removed (with proviso already mentioned), or, alternatively, each group can be given 3 or 4 cards with which to start.</p> <p>A whistle or gong is useful for 'suspension of trading'.</p> <p>There are a number of other games and simulations available which demonstrate, often in a more symbolic way, the nature of trading, and related issues such as unequal distribution of resources, supply and demand, interdependence, etc. Such games include The Trading Game, The Global Cake.</p>

<p>3.9A, 3.9B. REVIEW OF RESOURCES</p> <p>Call for a final suspension of trading, and ask all groups to count up the tokens they hold.</p> <p>Each group can then be asked to prepare and read a report on their resources.</p> <p>Issue 3.9A and 3.9B to each group. Allow a further 10 minutes</p> <p>In whole class debriefing, ask each group to give their thoughts about the success, or otherwise, fairness, and problems of trading.</p> <p>Ask each group to say which two cards or topics they would like to discuss further, with brief reasons. Seek consensus among whole class and use class opinions as basis for follow up work.</p>	<p>Tokens and cards can be collected in as soon as they have been counted.</p> <p>Discussion can focus on whether the most successful group is the one that has acquired the most tokens, regardless of what they represent.</p> <p>If no clear consensus of topics for further discussion is forthcoming, an ‘auction’* of topics could be tried. The auction procedure could, with some modification, be used as an alternative to the trading game described here, with Resource Cards being auctioned.</p> <p>Suggestions for extension work on issues, themes and topics raised by the Resource Cards are given at the end of this Stage 3 Teacher’s Guide.</p>
<p>3.10A, 3.10B COOPERATION AND CONFLICT</p> <p>With the students still in the 4 groups, issue 3.10A and 3.10B, but ask each person to think of an example of ‘working well’ and to note it down.</p> <p>Ask each person to think of a conflict within the group, and how it was resolved.</p> <p>Allow a few minutes for the group to pool ideas to see if there is any general agreement within the group about ‘good times’ and ‘difficult times’. Each group should give a short report.</p> <p>Next, ask each group to pool their ideas on conflict within everyday life, and the means of resolution. The ideas can be displayed on a large sheet of paper, or each group can act out a short sketch showing a conflict and its resolution other than by fighting.</p> <p>Finally, ask the class as a whole to focus on why wars happen, and how the world might live in peace in the future. This can take the form of an open-ended discussion.</p>	<p>3.10B can be used for the whole group or for each individual to jot down their ideas.</p> <p>For younger children, each group could be given a ‘conflict’ scenario to act out to a satisfactory conclusion.</p> <p>Discussion and debate is likely to be lively and wide-ranging, but needs to be handled with care on account of the strong feelings that may arise, and the political implications. It is important to end on a positive note with at least some degree of optimism for the future.</p> <p>The theme of the future is taken up in the last part of Stage 3</p> <p>Possible extension work could include:</p> <ol style="list-style-type: none"> Use of one or more ‘co-operative exercises’ e.g. Putting The World Together, Blind Walk, Four Hands On Clay. Songs and poems about war and peace. Preparation of a time chart showing wars since the beginning of recorded history, perhaps illustrated with typical weapons. Consider the question, ‘Is war inevitable?’ and the role of the United Nations in peace-keeping. Images of violence in comics, novels, films, TV, and video games.

<p>3.11A CHOICE OF FUTURES 3.11B PERSONAL VIEW OF THE FUTURE</p> <p>Read out or issue 3.11A to everybody. Ask students to think about their aims in life, their preferred future, and then about ways of achieving these aims, together with possible obstacles to be overcome.</p> <p>In class discussion, consider ways in which one can affect one's own future, and ways of making other people sympathetic or appreciative of one's point of view.</p> <p>To bring out the global perspective, ask students to make a list of those people on whom they have depended to get into school that morning, (and perhaps who has depended on them). Follow this up by asking students to consider the source or country of origin of everything they have with them, including clothes, and everything they have used since waking up.</p> <p>Conclude with a discussion on what students would teach their children to prepare them for the future (or even how they would teach it !)</p>	<p>This can be treated as an exercise in individual thought and constructive 'day dreaming'. Students, in relaxed position and with eyes closed, could be taken on a mental journey.</p> <p>Alternatively, students could be asked to draw a map of their journey through life as they see it, and this could include the past as well as the future. They could be asked to explain the map to a friend. The teacher must judge, however, to what extent it would be acceptable to expose a student's personal feeling and background to a wider audience.</p> <p>This section can also provide a lead into what children see as their traditional gender role, and their rights. (See also 3.3).</p> <p>Possible extension work could include:</p> <ol style="list-style-type: none"> Ask each male student to complete the sentence 'If I had been born a girl....' and each female student to complete 'If I had been born a boy' anonymously on a slip of paper. Display the results on a large chart and discuss. Working in pairs or small groups, ask each student to supply (from their bag or pocket) a different article in their possession. Another student must then tell the 'history' of that article. Consideration of an individual's rights and responsibilities within society. 'Plugging into the World' exercise. Exercises on talking people round to a particular point of view, e.g. Power of Persuasion, Balloon Debate. Get students to write a self-description set 20 or 30 years in the future.
<p>3.12A, 3.12B SEEING INTO THE FUTURE</p> <p>If it has not already happened, introduce students to the concept of 'Spaceship Earth' – that they are already on a spaceship with over four thousand million other crew members. Allow time for discussion.</p> <p>Issue or read out 3.12A and 3.12B (working in pairs or small groups). Allow about ten minutes for discussion before opening up to a whole class debate.</p>	<p>This section brings us full circle back to our starting point of 'science fiction' and 'science fact'</p> <p>Opportunities for extension work could include:</p> <ol style="list-style-type: none"> Examination, comparison, and 'testing' of horoscopes in different daily newspapers over a period of a week or so, to see if 'predictions' come true. Birth signs exercise Critical analysis of a science fiction book or film. Ask students to make their own predictions for tomorrow, next week, next month, next year, or some time hence. Taking the future for granted: what things do we assume will happen because we have come to expect them to happen? (e.g. will the sun rise in the East tomorrow? Has it always risen in the East?) Make a list or a further study of people whose job it is to predict the future, e.g. weather forecasters, 'bookies', astrologers.

SUGGESTIONS FOR EXTENSION WORK AND FURTHER DISCUSSION ARISING FROM RESOURCE CARDS

INVENTION, SOMETHING NEW	<p>Look at important inventors and inventions throughout history. What is a 'useful' invention? Discuss advantages and disadvantages of specific inventions. Speculate on future inventions. What inventions would we be happy to 'un-invent' or do without?</p>
INVASION	<p>Reactions to an impending invasion from aliens from space. Consideration of invasions of the British Isles – Romans, Vikings, Normans, etc. Effect on language, culture, environment, population. 20th Century invasions. H.G. Wells 'War of the Worlds' Ample scope for creative writing and role play.</p>
ELECTRICITY	<p>What is electricity? How is electricity generated? How we rely on electricity. Could we make do with less? Visit to a power station</p>
OIL, NATURAL GAS	<p>How oil and gas are formed. Searching and drilling for oil. Working on an oil rig. How oil is transported. How oil is refined. How oil is used - fuel, plastics, other petrochemicals. World reserves. Will oil run out? Are there alternatives? World economy and oil.</p>
COAL	<p>How coal is formed. History of coal mining in the U.K. World reserves of coal. Chemicals from coal.</p>
URANIUM	<p>Extraction and processing of uranium. Nuclear fission and nuclear fusion. What is radioactivity? Nuclear power stations at home and abroad. Peaceful uses of radioactivity. The nuclear deterrent versus disarmament debate.</p>
ALTERNATIVE ENERGY	<p>Renewable energy sources Green energy Reduction in greenhouse gas emissions</p>
SOLAR POWER	<p>Solar panels Solar stills Solar cells Nuclear fusion – the sun's power source. The solar system Using the sun to tell the time.</p>
WAVE POWER, TIDAL POWER	<p>What causes tides? What causes waves? Destructive power of tsunamis Tidal barrage – ecological implications. Ecology of the sea shore. Experiments with ripple tanks.</p>
BIOFUELS	<p>Anaerobic fermentation Methane from landfill sites. The carbon and nitrogen cycles. Fuel crops versus food crops. Fermentation and distillation of sugar</p>

WATER POWER	<p>Making a model water mill Overshot & undershot mills Visit to a local working water mill. Hydroelectric power in the U.K. Pump storage schemes. Implications for wildlife, population and leisure.</p>
WIND POWER	<p>Making a model wind mill. Historical use of wind power. Modern wind turbines & wind farms Measuring wind speed – the Beaufort Scale</p>
GEOTHERMAL ENERGY	<p>Geysers and thermal springs. Where does the heat come from? Volcanoes. Study of some common igneous rocks. Tapping 'hot rocks' for energy supply..</p>
LIMESTONE	<p>How limestone is formed. Studying & collecting fossils. Limestone scenery, caves. Quarrying & uses of limestone Study of local building materials. Sedimentary rocks.</p>
SANDSTONE	<p>How sandstone is formed. Types of sandstone. Porosity – use as 'reservoir' rock. Uses of sandstone</p>
ROCK SALT	<p>Purification of salt. Salt in our diet. Salt as a preservative. Uses of salt and chemicals from salt including chlorine and caustic soda Salt mines</p>
DIAMOND	<p>Introduction to gemstones. Comparing hardness of rocks and minerals. Moh's scale. Non-gemstone use of diamond. Diamond mining. Optical properties of diamond.</p>
GOLD	<p>Symbols of wealth. Money, gold standards, gold reserves. The search for gold – gold mining, panning, the 'Gold Rush'. Commercial uses of gold.</p>
COPPER ORE, COPPER METAL	<p>Occurrence and extraction of copper. The Bronze Age. Comparison of copper, brass and bronze. World reserves of copper, copper mining. Uses of copper.</p>
IRON ORE, IRON, STEEL	<p>Study of some iron ores. Abundance of iron in the Earth. The Iron Age. Iron in the industrial revolution. The iron & steel industry in Britain. How a blast furnace works. Rusting of iron and its prevention. Magnetism.</p>
ALUMINIUM, BAUXITE	<p>Occurrence and extraction of aluminium Uses of aluminium</p>

WILDLIFE	<p>Wildlife conservation Endangered species Use of animals for food, clothing, luxury goods, research, transport, sport Vivisection Factory farming Hunting Pets</p>
HUMANOID, LABOUR	<p>Exploitation of people and animals Human rights and animal rights The slave trade – historical and present day. Implication of large reserve of unpaid/low paid labour Attitudes towards 'aliens' Superior/inferior culture attitudes Robots. In modern society. Portrayal of 'extra-terrestrials' and robots in science fiction</p>
TRADING & UNEMPLOYMENT	<p>Local employment prospects Links with local industry & Chamber of Commerce. Role of Trade Unions, Governments and Multinational Business The European Union (Common Market). World Trade, Recession, Gross National Product Tariffs, trade barriers, import & export restrictions. Advertising. Price wars. Inflation. Social welfare.</p>
FEEDING THE WORLD	<p>Nutrition and diet World food production and distribution. Famine & malnutrition. International aid. Cash crops versus food crops. Subsistence, intensive, factory, organic farming methods. New food sources – bacterial culture, hydroponics, genetically modified crops & animals. Population control. Contraception – religious, social & moral issues. Euthanasia World population trends.</p>
MEDICAL MOSS, LEAF OF LIFE	<p>Implications for population growth.(As above) History of modern medicine. Alternative medicine & other systems of holistic care. National Health Service versus Private Healthcare The pharmaceutical industry.</p>
HAPPINESS HERB	<p>Social & moral issues of drugs Drug use and abuse. Soft and hard drugs Tobacco and alcohol Penalties for drug and alcohol abuse.</p>
POISON PLANT	<p>Recognition of common poisonous plants Natural plant pesticides. Synthetic pesticides – benefits and dangers. Case study - DDT. Residues in food chain – effect on wildlife. Rachel Carson's 'Silent Spring'. Alternative methods of pest control. Genetic engineering.</p>

ACID RAIN, WATER	<p>The water cycle. Drought. Domestic and industrial use of water. Water pollution. Eutrophication. Sewage treatment. Visit to sewage works. Conservation and storage of water. Problems of acid rain.</p>
SUPER TREES	<p>Types of trees – conifer, broad leaf deciduous. Work of the Forestry Commission. Tree disease – the elm and the ash. Tropical rain forests – exploitations and conservation. Demand for timber - building, fuel, paper. Paper making and recycling.</p>
NATURAL DISASTERS FLOOD, FIRE, EARTHQUAKE, ERUPTION, TYPHOON	<p>Use of topical news items. Case study of specific disasters. International response to disasters. Extreme weather and global warming – the debate. Earthquake belts. Richter scale. Man-made disasters – Chernobyl, Bhopal, Aberfan, etc.</p>