

OUT OF THIS WORLD

TEACHERS' GUIDE : STAGE ONE

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

It is not envisaged that any one teacher would have the inclination, let alone the time, to develop all the possible lines of enquiry which OOTW may initiate. Suggestions are given, however, for possible extension work at various levels, to assist teachers in adapting the OOTW approach to their particular requirements.

It is recommended that students' materials which can be re-used are printed out on card and laminated.

MATERIAL & PROCEDURE	NOTES & SUGGESTIONS FOR EXTENSION WORK
MISSION CONTROL SHEET	Provided to enable the teacher to keep a record of the compositions, decisions and progress of the different crews throughout all 3 stages. There is space for recording marks given for any oral or written work in Stage 1
<p>STARTING THE COURSE Refer to students' experience of space-age science fiction in comics, novels, TV and films, and computer games</p> <p>Remind them that they were born into the space age but only sixty years ago space travel was still fantasy, and a hundred years ago powered flight was in its infancy</p>	<p>Discussion can focus on to what extent science fiction is fantasy or a vision of the future.</p> <p>Encourage reading of science fiction by 'Scientific' authors e.g. Isaac Asimov, Arthur C Clarke, H.G. Wells, Jules Verne.</p> <p>The theme of science fiction is taken up again at the end of Stage 3, where more ideas for extension work can be found.</p>
<p>1.1 YOU HAVE BEEN CHOSEN.... ESSENTIAL REQUIREMENTS 1.2 CREW CODES & RESPONSIBILITIES</p> <p>Divide class into no more than 8 small groups (6 or 7 is best), with 3 to 6 children (5 works best) in each group.</p> <p>Issue card 1.1 and allow about 5 min. for brainstorming of what they will need for the journey. Tell each group, that they can ask one question of Mission Control (i.e. the teacher).</p> <p>Before class discussion on 1.1, issue cards 1.2, with a different crew code for each group. Encourage crews to make up a badge or logo based on the crew code. They can also speculate on the meaning of the letters, although correct meaning should not be divulged until the end of the course, if at all.</p> <p>Allocate crew responsibilities, or, better still, allow students to decide which role they will take within their group. In small groups some doubling up of roles may be necessary; key roles are Captain, Engineer, Catering Officer.</p> <p>After several minutes, collect decision sheets 1.2 and use them to fill out Mission Control Sheet.</p>	<p>Group composition can be predetermined or 'free choice'. Issue of badges or playing 'Going Spotty' can be used to achieve predetermined groups in apparently random manner.</p> <p>Decision sheet 1.1, or a large flip chart can be used for recording suggestions.</p> <p>It is useful for each group, or crew, to be given or asked to make a folder in which to keep loose sheets of paper. The folder can be decorated with the Crew Code.</p> <p>The crew codes are as follows (if less than 8 groups use them in order):</p> <p>TWLNR Teaching for a World of Limited Natural Resources UNREF Understanding that the Natural Resources of the Earth are Finite SUWLR Sensible Use of the World's Limited Resources PFSRW Project on Saving the Natural Resources of our World ALWNR Appreciation of the Limit of the World's Natural Resources LWFNR Living in a World of Finite Natural Resources EPFNR Earth as a Planet of Finite Natural Resources FNRPE Finite Natural Resources of the Earth.</p> <p>Credit can be given for the most appropriate or amusing suggestions</p> <p>There is no need to stick to these codes, which were tied in to the computer programme. Other crew codes could be devised.</p>

<p>CLASS DISCUSSION</p> <p>Either ask students to display a chart of their basic requirements for the space voyage (+ crew badge) and allow them to look at and discuss each other's charts, or record each group's list on a display board for all to see.</p> <p>Common needs should be identified & discussed. Encourage students to ask those in other groups to justify the inclusion of unusual, controversial or bizarre items in their list.</p> <p>It should be possible to identify air, water, food & fuel as having high priority across the class generally.</p> <p>Allow each group to put one question to Mission Control. try to give a straight answer without disclosing the concept of 'Spaceship Earth' at this stage. Some of the questions may be answered by subsequent discussion cards in Stage 1.</p>	<p>Some suggestions are likely to be flippant (e.g. Hitchhikers Guide to the Galaxy', 'Loo roll'), but in general all comments should be treated seriously, since a valid suggestion is usually implied (e.g. Navigational Aids, 'Hygiene'). Any class clowns may thus be prepared to make further more carefully considered suggestions.</p> <p>If demands to know 'what it's all about' become irresistible, the 'Spaceship Specifications' sheet can be used at any time, though it is best left until the end of Stage 3.</p> <p>To counter the question, 'Why are we doing this, we're not going on a spaceship?' the following points could be used:</p> <ol style="list-style-type: none"> Don't underestimate the advance of technology. Non-specialists have already been included in Space Shuttle crews. The idea of establishing a permanent, manned settlement on the Moon or Mars is already being seriously considered. Earth's very existence has been threatened in the past by the close approach of comets, asteroids, etc. When such a threat occurs again, escape from the Earth (for a chosen few) may be the only option for survival of the human race. It is also possible that nuclear conflict, biological or chemical warfare, or global pollution or warming could render our planet uninhabitable. <p>Extension work could include:</p> <ol style="list-style-type: none"> project on the history of space travel. Origin of the Earth and of life on Earth. The Solar System, galaxies and the universe. Production (by the whole class or a group) of the 'Galactic Times' newspaper, with articles, poems, science fiction features, interviews at the launch pad, etc. This could be an on-going feature. Discussion and follow-up work on our perception of basic needs compared to people elsewhere, especially in the 3rd World. How far are these needs being met?
<p>1.3 THE JOURNEY MAY TAKE YEARS 1.4 WE MAY NEVER COME HOME DECISION SHEETS 1.3 A, B, C, D, 1.4</p> <p>Issue 1.3 to each group. Allow a few minutes for discussion then give out 1.4, and allow another 5 minutes.</p> <p>The decision sheets can be used for students' responses if desired, but some form of class discussion should follow.</p> <p>Encourage students to talk about how much, and in what form food and fuel should be taken. Try to get them to develop the idea of renewable and sustainable resources – a self-contained ecosystem, with all waste being recycled.</p>	<p>The theme of self-sufficiency is taken up again in Stage 3.</p> <p>Students are often initially revolted at the thought of recycling human waste. Follow-up work & discussion on water purification and sewage treatment should bring the subject into perspective. A visit to a major water treatment works could be arranged.</p> <p>Questions of health, life, death, and reproduction may well arise. Any of these could form the basis for extension work.</p> <p>Further extension work could include consideration of the problems of prolonged space travel for humans. (Suspended animation is one suggestion in Arthur C. Clarke's '2001')</p>

<p>THE WORLD FOOD PROBLEM BASIC FOOD QUESTIONNAIRE</p>	<p>A set of OHP transparencies was prepared to accompany a commentary on the world food problem. These transparencies are not available.</p> <p>The food questionnaire is based on the commentary, and is aimed at 13/14 yr old students. There is plenty of scope for co-operation with Biology and Food Science colleagues.</p>
<p>A QUESTION OF ENERGY</p>	<p>The question sheet is again most appropriate for the middle secondary years. Consideration of the most suitable form of energy for a spaceship can lead into the whole spectrum of energy production. While the approach can be largely factual, the opportunity for discussion on the merits, or otherwise, of nuclear power, alternative green energy sources, and the limited nature of fossil fuels should not be ignored. A wealth of material is available on the internet for these topics. The question of bias in such material can also form the basis for discussion.</p>
<p>QUESTION: AIR & WATER</p>	<p>The question sheet is designed for secondary pupils and has a bias towards science. From a consideration of air and water as essentials for life, a more detailed treatment could focus on the causes and effects of pollution, and ways of tackling the problems. As well as looking at international issues such as global warming, carbon dioxide emissions, acid rain and nuclear waste, attention should be given to local issues such as factory effluent, holiday beaches, slurry discharge, traffic fumes, aircraft noise, etc. provision and consumption of fresh water, and treatment of used water could form the basis of a local project. A mock public enquiry is one possible way of focussing on local issues.</p>
<p>1.5 PERSONAL PROBLEMS, BOREDOM, HEALTH, CONFLICT</p> <p>Issue 1.5 and decision sheets, if required. Allow sufficient time for discussion within groups before some form of whole class discussion.</p> <p>Alternatively, discussion on these topics may follow on directly from 1.3 & 1.4 without use of further prompt cards.</p>	<p>The question of boredom could form the starting point for further work on a whole range of social issues, such as use of leisure time, mindless vandalism, enforced leisure through unemployment, school or job dissatisfaction, provision (or lack) of recreational facilities.</p> <p>If students have been allowed to determine their own groupings in Stage 1, relationships within a group should be reasonably harmonious, but in Stages 2 & 3 some random mixing or integration of groups will probably occur. Some consideration of conflict resolution or avoidance strategies, possibly involving role play, may be appropriate at this point.</p> <p>If health & medical care has not already been discussed, provision of health care in Britain and abroad, spare part surgery, alternative health care, etc. are some topics which could be pursued.</p>

<p>1.6 YOU MAY MEET ALIENS</p> <p>The possibility of meeting strange creatures may have arisen already. Card 1.6 considers this question in more detail.</p> <p>Issue 1.6, and decision sheets if required. Allow 10 minutes for group discussion. Tell students that they will be expected to present their responses and to explain and justify their views.</p> <p>Discuss the question of communication between beings of different language, culture and appearance. Ask whether there is such a thing as a 'Universal Language'. Point out that even among Earthlings, signs and gestures vary greatly in different countries.</p>	<p>There is often a tacit assumption that aliens will be humanoid in appearance, but this not a prerequisite for intelligence.</p> <p>Responses usually fall into 3 broad categories:</p> <ul style="list-style-type: none"> a) friendly/trusting b) cautious/fearful c) warlike/threatening <p>There is opportunity for further investigation of attitudes to the strange and unfamiliar. Each group could be asked to act out a particular attitude.</p> <p>Parallels can be drawn with an isolated community coming into contact for the first time with travellers/explorers from a different, possibly more advanced civilisation. Neither party is likely to be unaffected by the encounter; exchange of material benefits, artefacts, technology, disease, exploitation, assimilation, subjugation, domination, and even extermination are issues which could be raised.</p> <p>There are obvious links with attitudes toward different ethnic, religious and national groups in general. Teachers should be aware of the sensitive nature of such issues, particularly in relationship to the composition of their class. Stereotyping, prejudice and racism are lines of enquiry which could be followed up.</p> <p>There is plenty of scope for other games and simulations on attitudes to aliens e.g. Bafa Bafa, Word Wizard, Split Images, & Strange Encounter. The crews could be asked to draw a map of the Planet Earth to show where it is in the Solar System, where they live, what it's like and why they left it. They could be asked to imagine what an intelligent alien might make of our way of life, or of a sport such as cricket or football. They could also consider how they might adapt the game for a planet of lower or higher gravity than Earth.</p>
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A Mission Control Sheet was included in the original pack but it is recommended that persons using this pack devise their own way of recording the progress of groups and individuals during the simulation, appropriate to the age and numbers of students involved.