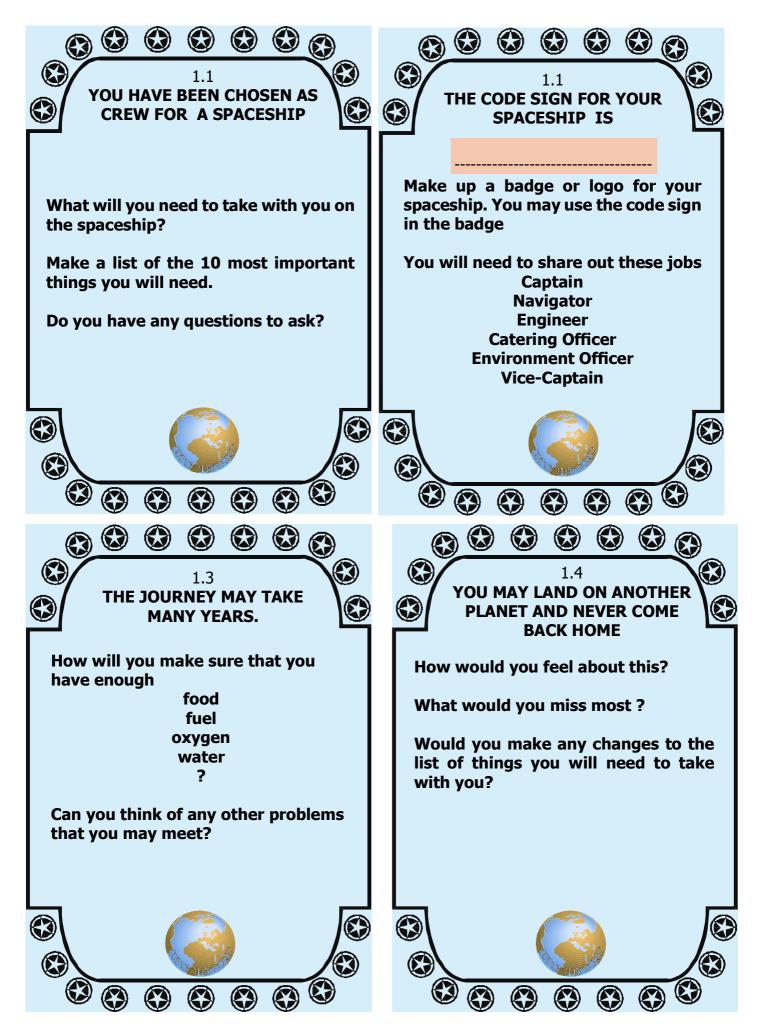
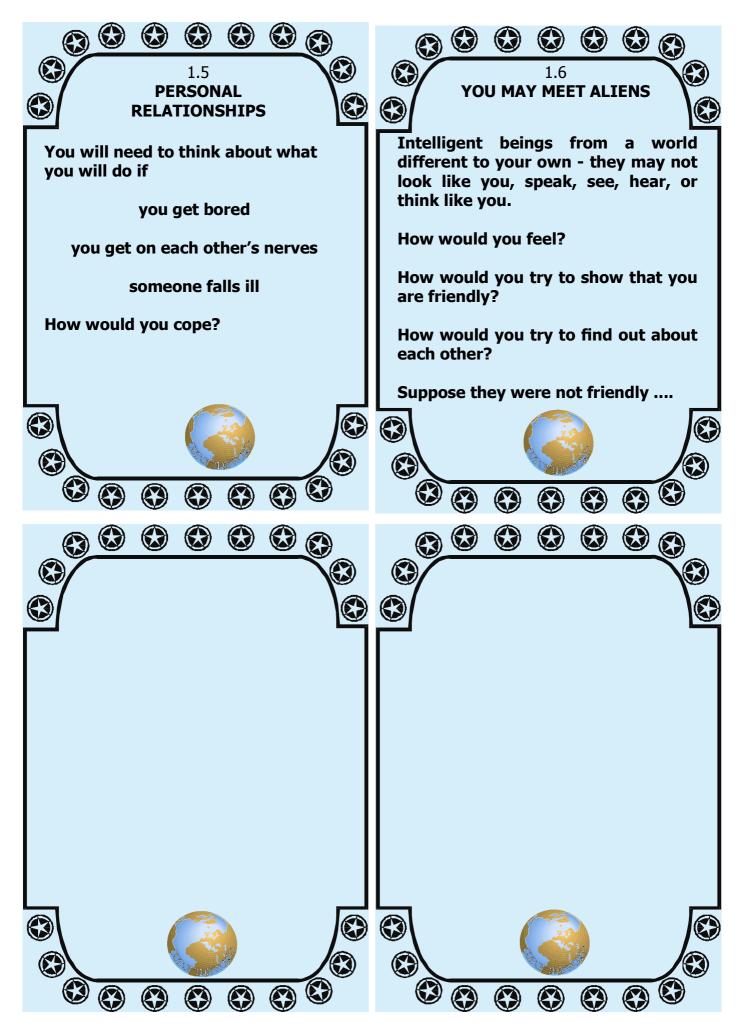
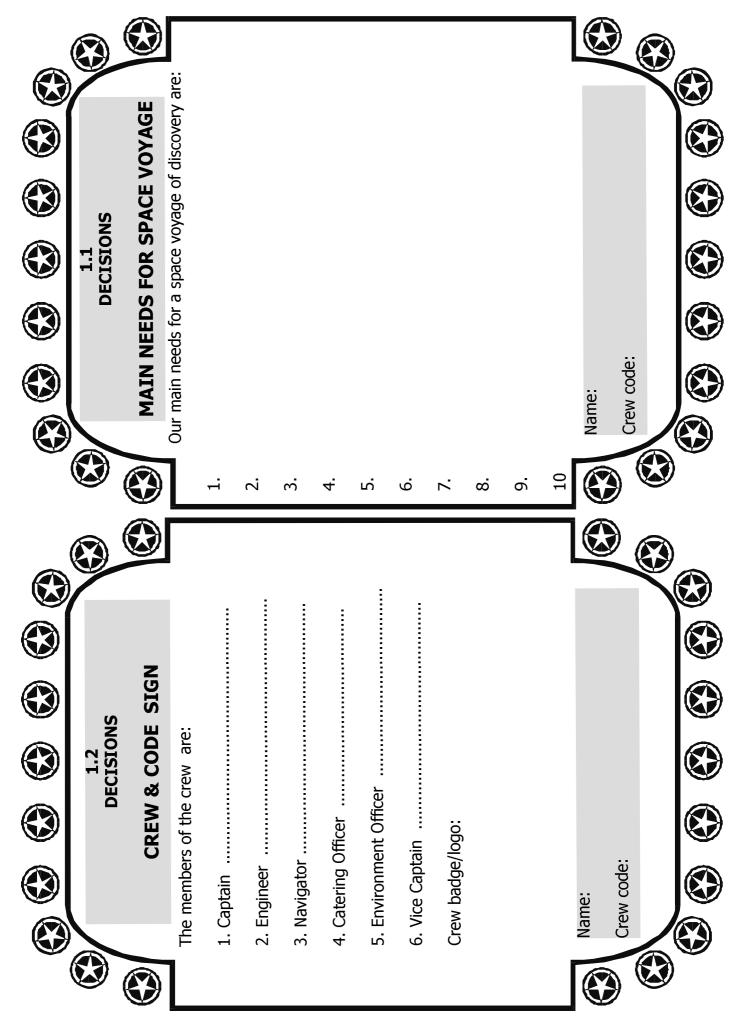
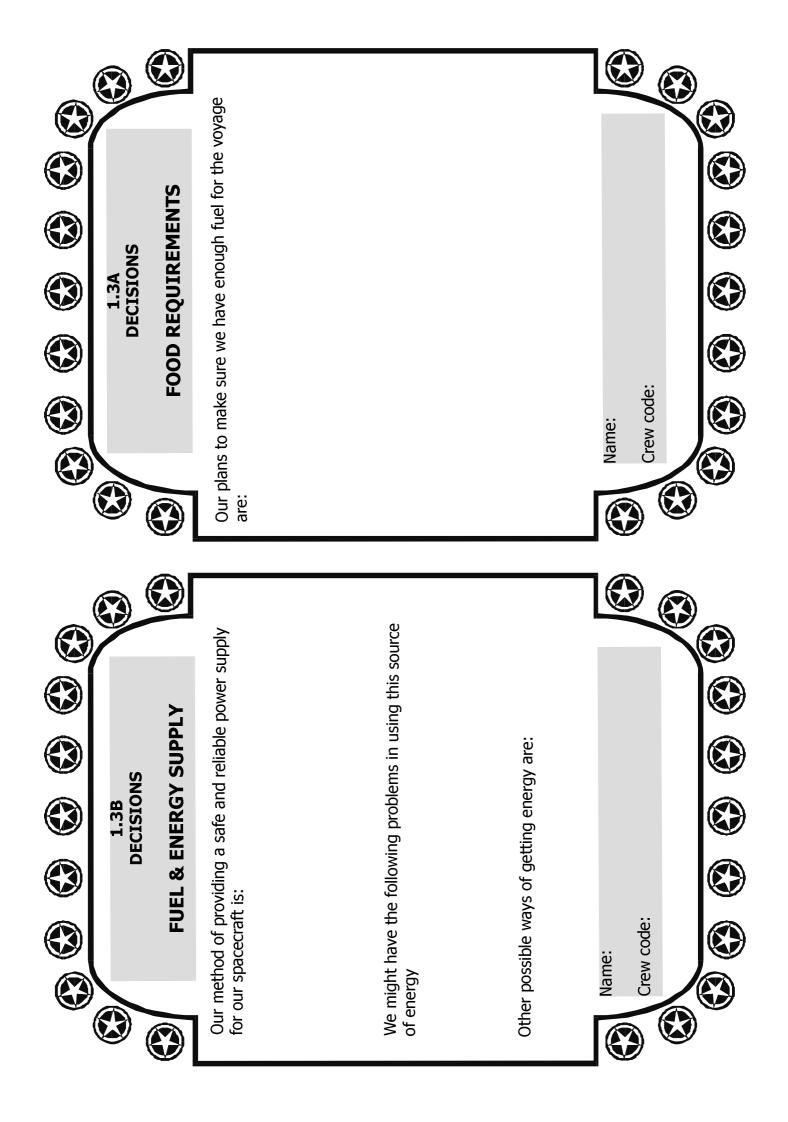
Out of this World Stage 1 Issue Cards sheet 1

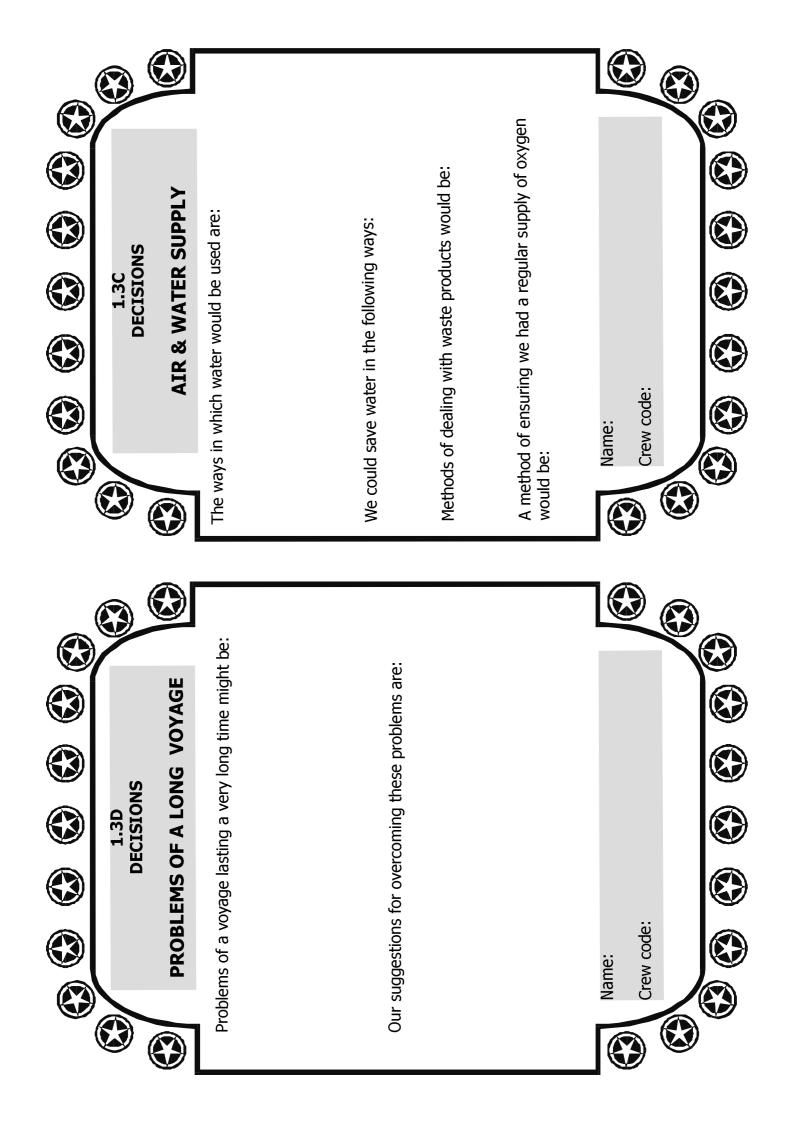


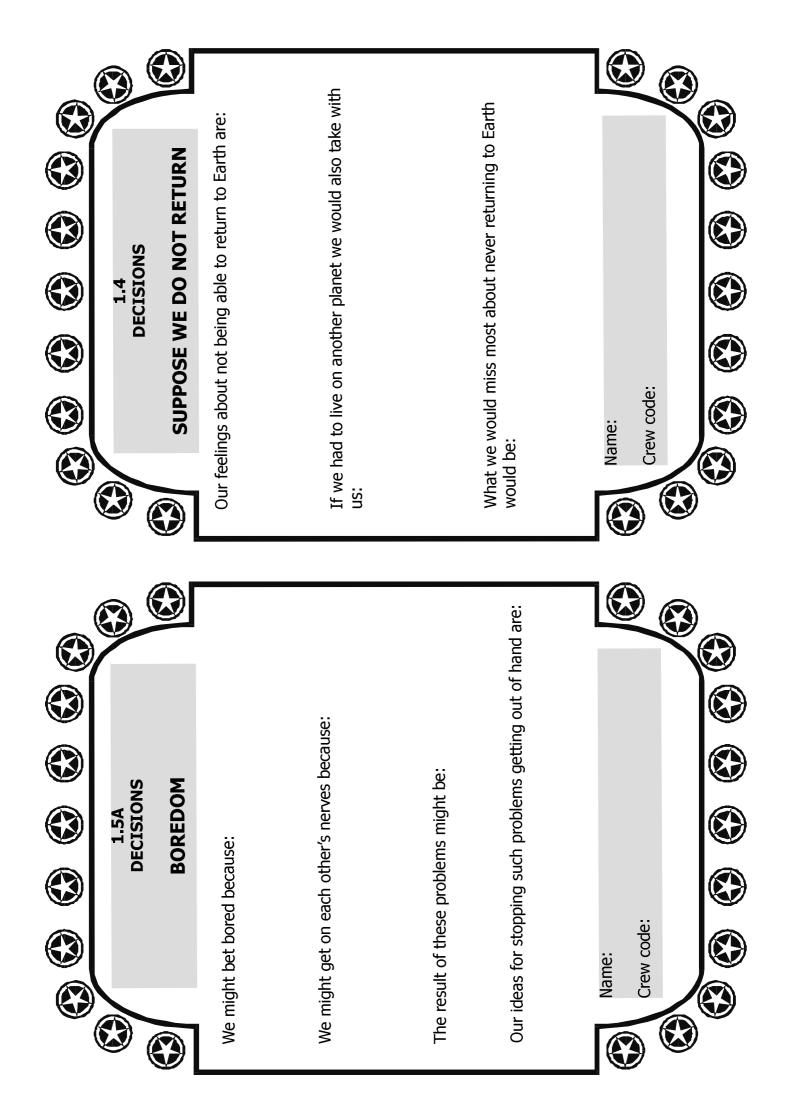
Out of this World Stage 1 Issue Cards sheet 2

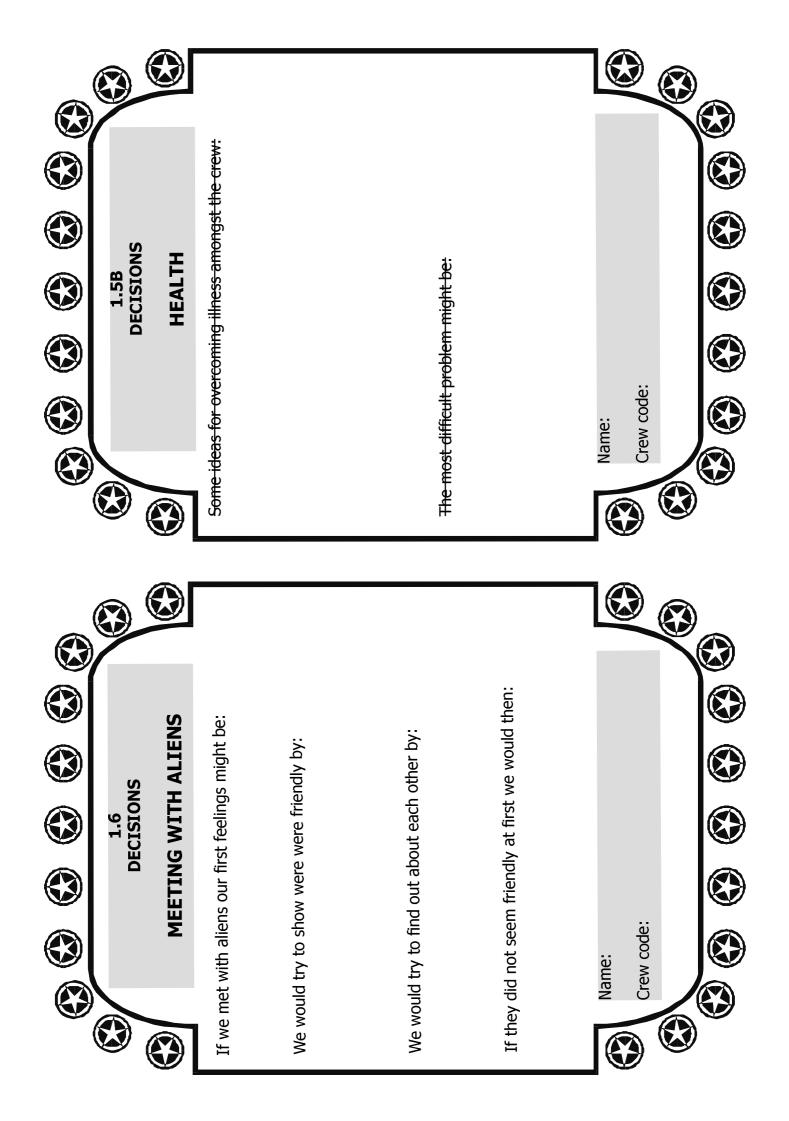














1. What is the average daily energy requirement for an active adult ?			
2. Roughly how many days can a person survive without food?			
3. Which product of the breakdown of food is expelled from the lungs ?			
4. Two food rich in carbohydrate are i ii			
5. Excess carbohydrate is stored in the body as			
6. Two food rich in protein are i ii			
7. In our diet we also require small amounts of i and ii			
8. Kwashiorkor is a disease caused by lack of			
9. Scurvy is a disease cased by lack of			
and it can be prevented by			
10. Rickets is a disease caused by lack of			
aand it can be prevented by			
11. Name three ways of preserving food i.			
ii iii			
12. Name two important food obtained from live animals i			
ii			
13. In order to produce one kilogram of meat, how much protein rich diet would have to be fed to			
i. a chicken ii. a sheep iii. a cow			
14. Cultivation of plants by nutrient solutions in the absence of soil is called			
15. Yeast is a micro-organism which converts			
into alcohol (ethanol), and			
16. A person who does not eat any kind of meat is known as a			
If they also do eat any animal product they are known as			

ENERGY QUESTIONNAIRE			
CREW CODE: NAME: SCORE:			
1. Name three different kinds of fossil fuels			
2. Which of these may run out during your lifetime?			
3. Which fossil fuel has reserves to last probably 200 years?			
4. Name two different fuels from the biomass			
Are they renewable or limited resources ?			
5. What else is needed for all of these fuels to burn?			
What 'greenhouse' gas is produced from the combustion?			
6. Describe in outline how electricity is produced from a fossil fuel at a power station			
7. In what way is a nuclear power station similar?			
In what way is a nuclear power station different?			
8. From what limited raw material is nuclear energy produced at present?			
9. In what kind of reactor can the life of this fuel be extended ?			
10. What environmental problems are associciated with nuclear energy ?			
11. Describe briefly three kinds of 'renewable' energy sources associated with water			
12. Describe two ways in which solar energy can be used directly			
13. What is meant by geothermal energy ?			
14. What problems could be associated with production of electricity from wind farms?			

AIR & WATER QUESTIONNAIRE			
CREW CODE:		SCORE:	
1. Name two gases which together make	up about 99% of air		
2. Which one of these gases is essential	to life, and for anything to burn	?	
What is the approximate percentage o	f this gas present in air?		
3. When this gas is used up in breathing same ?	and burning, how does the prop	orttion of this gas in air remain the	
4. Name two other gases which are prese	nt in clean, unpolluted air		
5. How does sulphuir dioxide get into th	e air ?		
Why is it regarded as a harmful polluta	ant ?		
6. How does carbon monoxide get into t	he air?		
Why is it regarded as a harmful pollut	ant ?		
7. What problems might be caused by ar			
8. W How would you test whether the at			
9. Of which two elements is water made			
10. How can water be formed from its ele	ements?		
11. How can water be split up into its ele	ements?		
12. In an average household, how much	water is generally used by each	person in a day?	
13. List three ways in which this water m			
14. What happens to most of this water a			
15. How long can a person survive witho	ut water?		
16. Apart from excretion, in what other	ways is water lost from our body	/ ?	

17. Explain briefly how water is purified on a large scale in nature

18. How can water be purified on a small scale in the laboratory ?
19. What are the two main processes in the large scale treatment of water to prevent pollution?

20. Describe in detail how impure or waste water is purified on a large scale for re-use in the mains water supply.

BASIC FOOD QUESTIONNAIRE Answers

- 1. Average daily energy requirements : 2.500 kcal (10,000 kJ) More for active man,
- 2. A person can survive 5 7 weeks without food, depending on initial health & condition.
- 3. Carbon dioxide explelled from lungs
- 4. Sugar, bread, potato are examples of carbohydrate rich foods
- 5. Excess carbonhydrate is stored in the body as fat
- 6. Protein rich foods include meat, eggs, cheese, soya
- 7. We also require small amounts of vitamins and minerals in our diet.
- 8. Kwashiorkor is a disease caused by lack of protein
- 9. Scurvy is caused by lack of vitamin C, and can be prevented by eating enough fresh fruit & vegetables
- 10. Rickets is caused by a lack of calcium or vitamin D and can be prevented by including milk or cheese, for example, in our diet.
- 11. Ways of preserving food include, canning, picklijng, freezing, salting, drying, radiating.
- 12. Milk and eggs are two foods obtained from live animals.
- 13. To produce 1 kg of meat one would need to feed a chicken 5 to 6 kg, a sheep or a cow 20 to 25 kg of protein rich food.
- 14. Cultivation of plants by nutrient solutions in the absence of soil is called hydroponics
- 15. Yeast converts sugar into alcohol & carbon dioxide .
- 16. A Vegetarian does not eat meat, a vegan does not eat any animal product.



- 1. Coil, oil & natural gas are fossil fuels
- 2, 3 Oil and natural gas reserves are far more limited than coal, which may last for 200 years or more.
- 4. Wood & alcohol are examples of biomass fuels.
- 5. Oxygen is needed for combustion. Carbon dioxide is produced when any of these fuels is burnt.
- 6. At a power station, fossil fuels are burnt to change water into steam, which drives the turbines.
- 7. Steam is produced by heating water from the energy of nuclear fission. Nothing is burnt.
- 8. Uranium is the 'fuel' for a nuclear power station.
- 9. The 'life' of the enriched uranium can be extended in a 'fast-breeder' reactor.
- 10. The waste from a nuclear power station remains radioactive for thousands of years. Safe disposal of radioactive waste is a problem. The possibility of radioactive material falling into the hands of terrorists also has to be considered a real threat.
- 11. Fast flowing water from rivers, or water stored in dams, and the ebb and flow of sea water in tides can all be used to drive turbines. Oscillation of water in the motion of waves can also be made to drive a turbine.
- 12. The sun's energy can be used to generate electricity from photovoltaic cells, or used to heat water .
- 13. Rocks deeper in the Earth's crust are hotter than at the surface. This geothermal energy can be use to heat water pumped down in pipes. (In volcanic areas, this energy appears at or close to the surface).
- 14. The wind is not always blowing, so other back up electricity generation will always be needed. The noise from very large rotating turbine blades may be a problem in an inhabited area. There is also concern about harm to birds.



- 1. Nitrogen and oxygen make up about 99% of air.
- 2. Oxgen, which makes up about 20% of air, is essential for life & combustion
- 3. Photosynthesis by plants & ozone in upper atmosphere help maintain the proportion of oxygen
- 4. other gases in clean air include carbon dioxide, water vapour, and the noble gases (argon, neon, etc).
- 5. Burning of sulphur impurities in coal and oil gives sulphur dioxide which causes acid rain.
- 6. Incomplete combustion of fuels can produce carbon dioxide, which is a poisonous gas.
- 7. Carbon dioxide can trap reflected infra-red rays from the sun, causing 'greenhouse' effect leading to global warming.
- 8. e.g. old method in mining see if a caged canary can survive. Perform a chemical analysis of the air.
- 9. Water is a compound of hydrogen and oxygen
- 10. Water is formed when hydrogen gas or an organic compound burns.
- 11. Water can be split into its elements by electrolysis (e.g. of acidified water).
- 12. Up to 30 gallons over 130 litres of water can be used by each member of a household.
- 13. Flushing a toilet, washing (self, clothes, dishes, car, etc.), cooking, drinking.
- 14. Most of this water ends up in the drains.
- 15. A person can only survive a few days without water.
- 16. Apart from going to the toilet, water is also lost from our body by perspiration and breathing.
- 17. Water can be purified by distillation.
- 18. In large scale water treatment, some form of filtration, and then treatment with chlorine are two key processes.
- 19. Diagrams of sewage works and description of processes are readily available.