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Resources Earths about Worksheet الملف

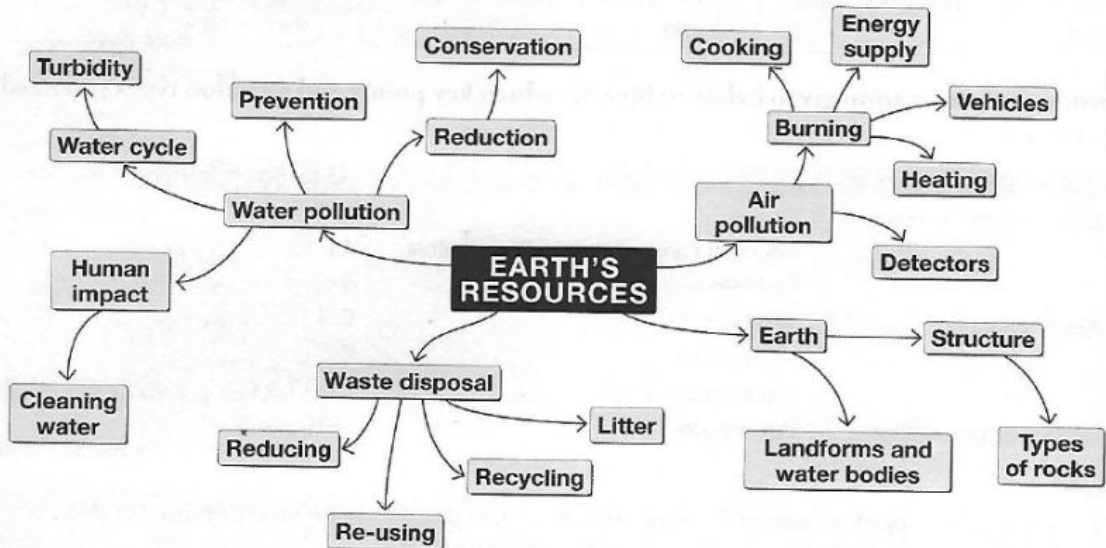
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# Topic 2: Earth's resources

## What you need to know and revise



**Using the concept map:** Study the concept map for this topic. Try covering up all the boxes linked to one of the boxes – for example, those linked to 'water pollution'. Then try to remember what the linked topics are.

### A Waste and recycling

In this topic you review how the Earth's resources are used but how they must be conserved. You should understand the difference between renewable and non-renewable resources and some of the ways that pollution can be prevented or reduced.

#### Resources and air

**1 Explain why the following resources are so important to humans and other living things.**

- a) Air \_\_\_\_\_
- b) Water \_\_\_\_\_
- c) Soil \_\_\_\_\_
- d) Rocks \_\_\_\_\_

Air is transparent but we can feel its effects.

**2 How does air slow down falling objects? Give an example.**

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**Disposal of solid waste**

**3 Which of the following are examples of solid waste? Circle the correct answers.**

- natural gas                      oil                      plastic bottles                      cardboard  
 drinking water                      old batteries                      waste food

**4 Copy and fill in the table about disposal of solid waste.**

Method	Advantages	Problems
a) Landfill		
b) Burning		
c) Burning to give energy		
d) Dumping into the sea		
e) Composting		

**Litter**

**5 Define litter.** \_\_\_\_\_

Litter looks unpleasant but it also damages habitats and wildlife.

**6 Give one example of how litter can impact on a habitat.**  
 \_\_\_\_\_

**Recycling and re-using objects and materials**

Some solid waste can be recycled.

**7 What does this mean?** \_\_\_\_\_

**8 Give two advantages of recycling materials.** \_\_\_\_\_  
 \_\_\_\_\_

Another way to prevent materials being thrown away is to re-use them.

**9 Describe an example of a material being re-used.** \_\_\_\_\_  
 \_\_\_\_\_

**B Air pollution**

**Burning and air pollution**

Substances burn to produce air pollution.

**1 Which gas is needed for things to burn?** \_\_\_\_\_

**2 Circle the examples of air pollution caused by burning.**

oil carbon dioxide carbon monoxide nitrogen  
 smoke water vapour iron sand

**3 Burning fuels causes air pollution. Write down four examples of these fuels.**

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**Detecting and investigating air pollution**

Air pollution can be detected in different ways.

**4 Explain one way in which we can detect air pollution.**

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In some places the air is very polluted. In other areas the air is clean.

**5 a) Give two reasons why air pollution in two different areas can be different.**

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**b) Can you name an area near to you where air pollution might be high? Can you say why?**

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**Cold and warm air**

When air is heated it expands and takes up more space. This means that the heated air rises. Cold air falls. The warm air above it acts like a lid.

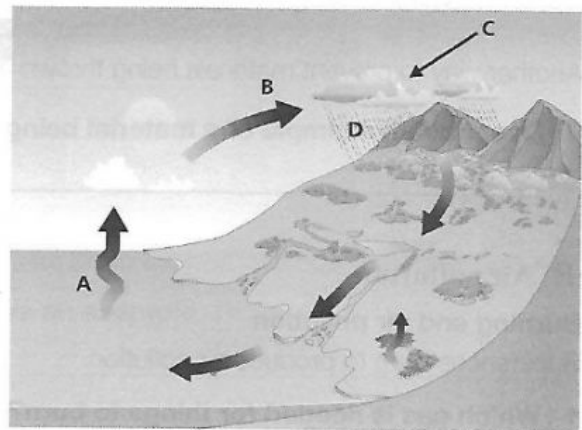
**6 Use these facts to explain how polluted air can sometimes be trapped in a low-lying area.**

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**C Water pollution**

**Water cycle**

Look at the diagram. (You saw this on page 11 when revising the weather.) Follow the cycle with your finger. Start with the sea and move your finger up as the water evaporates. Only the water vapour rises – any salts and solids are left in the sea. The rising air containing water vapour cools and clouds will form.



- 1 Explain the rest of the water cycle. Include the words 'condensation' and 'precipitation'.

The water cycle drives the weather on Earth. It also makes sure that water is not trapped in the sea as salty water. The water that falls as precipitation is fresh water.

- 2 List three sources of natural fresh water.

**Tip**

Make your own copy of important diagrams, e.g. the water cycle. Pin them up on a mirror or door. You can then keep looking at them and this will help you to learn them.

**Sources of water and hard and soft water**

As water flows through rocks it can pick up substances that make the water hard.

- 3 a) What is hard water?  
b) How does hard water lather with soap?

This hard water can leave a 'fur' or solid limescale on the heating elements in kettles and boilers.

- 4 Why might this be a problem?

In some areas, rainfall can be very low. This can cause a water shortage.

- 5 How can water shortages affect humans, other animals and plants?

**Human impact and reducing water pollution**

- 6 Human activity can pollute water.

Give four examples of this.

**7 Which of the following are ways that water pollution can be prevented or at least reduced? Circle the correct answers.**

- Recycle materials    Only throw solids into the sea    Reduce litter  
 Treat sewage before it reaches the sea    Burn less petrol and diesel  
 Use more landfill sites    Use fewer landfill sites

**Devices for detecting turbidity**

When water is polluted it is often more cloudy.

**8 What is this cloudiness called?** \_\_\_\_\_

**9 Describe a method for measuring how cloudy or clear water is.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Methods of cleaning polluted water**

The picture shows one way of cleaning some of the pollution from water.

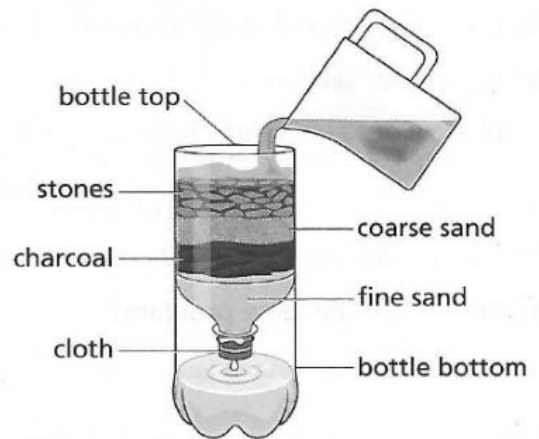
**10 Explain how this device works.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**11 Why would you never drink the water that passes through this device?**

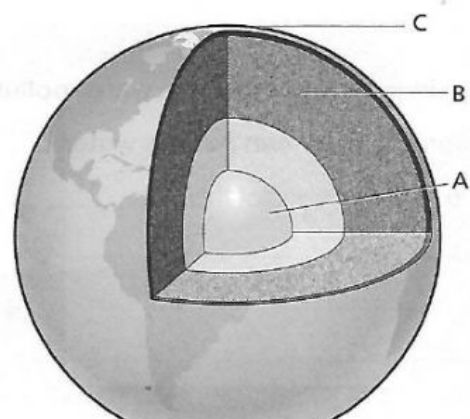
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**D The Earth**

**Structure of the Earth**

The Earth is not a solid ball.

**1 Label the layers of the Earth shown in the diagram.**



## Types of rocks

There are many different types of rock found on Earth.

### 2 Complete the table below.

Description	Name	Example
a) Formed from molten material that cools		
b) Formed from small particles of other rocks or dead animals that settle to form layers		
c) Formed from rocks that are changed by heating and/or squashing		

## Soil

Soil is a type of rock. Soil is vital for plant growth so we depend on soil for food.

### 3 Name three types of soil. \_\_\_\_\_

Soil contains a dark brown material made from dead animals and plants.

### 4 What is this material called? \_\_\_\_\_

Water passing through soil is called drainage.

### 5 Which type of soil allows water through it very slowly? \_\_\_\_\_

### 6 Describe how you could carry out an investigation to see which types of soil have the best drainage. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Soil can be washed or blown away. This happens most often on steep slopes.

### 7 Explain why. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### 8 Why is soil erosion such a problem? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Human activity can have a big effect on soil erosion.

**9 Explain how deforestation can make soil erosion worse.**

**Landforms and water bodies**

The Earth is split into landforms and water bodies.

**10 Tick the examples of landforms below and circle the examples of water bodies.**

mountains                      lakes                      rivers                      hills  
 canyons                      deserts                      ponds                      islands

**Check that you know what these words mean:**

air, water, soil, rocks, litter, waste, composting, recycling, re-using, reducing, landfill, pollution, fuels, hard water, drought, turbidity, mantle, crust, core, loam, erosion, landforms.

Answers to the overview section

- A** 1 a) Animals breathe in oxygen from the air to help them to break down food and plants take in carbon dioxide to help them to make food b) Animals and plants need to take in water to survive/helps to dissolve things and can be used for cleaning c) Soil holds plants in place and provides the water and nutrients plants need to grow. Without plants, the animals would die. d) Rocks provide solid land and humans use them for building and to extract valuable substances  
**2** Air hits the surface of the object and slows it down by air resistance, e.g. parachutes, falling seeds **3** Plastic bottles, cardboard, old batteries, waste food **4 a)** Landfill: removes waste from towns and cities/quick and convenient BUT can attract rats and flies and release poisons into water supplies **b)** Burning: quick and cheap BUT makes air pollution **c)** Burning to give energy: provides energy from waste/reduces the need for fossil fuels BUT produces air pollution/can be expensive **d)** Dumping into the sea: cheap and easy BUT creates pollution/damages habitats **e)** Composting: recycles plant materials/helps new plants to grow BUT can only be used for certain materials **5** Litter is solid waste that is left in the wrong place **6** Any of: trapping animals/choking animals/breaking down to give poisons **7** Broken down to be made into new materials and objects **8** Recycling uses less energy and raw materials than starting manufacture from scratch **9** Any examples: tins/cardboard boxes/bottles being used to store things
- B** 1 oxygen 2 carbon dioxide/carbon monoxide/smoke 3 Any four from coal and oil in power stations, petrol and diesel in vehicles, oil in ships, wood, gas and coal for cooking and heating 4 Using air filters, lifting pollution from surfaces using sticky tape and traps (e.g. Vaseline on paper) 5 a) Human activity can produce more pollution in some areas – near factories or where there is much traffic. High, windy areas have less air pollution than lower areas where pollution can be trapped. 6 If the polluted air is cold then it will fall into low areas. Any warm air will settle above it and prevent it from moving away.
- C** 1 The clouds cool and water vapour condenses into liquid water. This falls as precipitation – rain. The rain reaches the land and flows downhill in rivers and streams until it gathers in lakes or returns to the sea. 2 Any from streams, ponds, lakes, rivers 3 a) Water that has minerals dissolved in it b) Hard water does not lather with soap very well, a scum is formed 4 The heating elements will not be as efficient and in a boiler the pressure can build up and cause an explosion 5 Without water, animals and plants will die 6 Any four from: litter, sewage, chemicals from factories and farms, oil leaks and soil from eroded slopes 7 Recycle materials/Reduce litter/Treat sewage before it reaches the sea/Use fewer landfill sites 8 Turbidity 9 Use a black and white disk. This will be easy to see in clear water and will not be seen well in turbid or cloudy water. 10 As the polluted water passes through the filter, the larger particles will be trapped by the substances and filtered out 11 Not all of the polluting chemicals and germs will be removed
- D** 1 a) core b) mantle c) crust 2 a) igneous/granite, basalt b) sedimentary/ sandstone, shale, mudstone, limestone c) metamorphic/marble, slate, gneiss 3 clay, sandy, loam 4 humus 5 clay soil 6 Place the same amount of each soil sample into a filter funnel. Slowly add the same volume of water to each and time how long the water took to pass through the samples. 7 On the slope, gravity is helping the water and soil to flow/run downhill 8 It removes soil from where it is needed/can also run soil into area where it is harmful, e.g. over coral reefs 9 Tree roots help to hold soil together. Removing the trees makes the soil easier to move by wind or water. 10 Landforms: mountains, canyons, deserts, hills, islands/Waterbodies: lakes, rivers, ponds