

ROCKS and SOIL

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Rocks we will be studying



Slate

Slate is a hard and waterproof. It splits easily into thin sheets which is why it is good for putting on roofs



Marble

Marble has an attractive colour and can be easily cut and polished. Because of this, it is often used in buildings.



Chalk

Chalk wears away very easily which is why it is ideal for making sticks of chalk to write on blackboards!



Limestone

Limestone is also quite soft and can be easily carved or shaped. It is often used as a building material but is easily eroded by the rain.



Granite

Granite is very hard. It is often used to make steps and roads as it is a rock that doesn't wear away easily.



Pumice

Pumice is formed when volcanoes erupt. The little holes happen because bubbles of gas get trapped in the rock as it cools.

Slate



What I know about slate

Chalk



What I know about chalk

Limestone



What I know about Limestone

Marble



What I know about marble

Granite



What I know about granite

Testing some properties of the rocks

	Water soaks in (permeable) ✓ or ✕	Waterproof (impermeable) ✓ or ✕	Will split easily ✓ or ✕	Floats or Sinks	Hard or Soft
Chalk					
Granite					
Slate					
Marble					
Limestone					
Pumice					

Using information from the table

Name one rock that is impermeable (waterproof):.....

Name one rock that is permeable (water soaks into it)

Name a hard rock

Name a soft rock

Date.....

Investigating the hardness of a rock

What I am going to do:

I am going to try and scratch each rock using a finger nail, a 2p coin and an iron nail

I will put a tick in the empty box if the rock can be scratched

These are my results:

Type of rock	Finger nail	2p coin	Iron nail
Chalk			
Granite			
Sandstone			
Slate			
Marble			

This is my conclusion:

The hardest rock is

I know this because.....

The softest rock is

I know this because.....

What are rocks used for?

Type of rock	What it is used for	Reason
Slate Slate is a hard and waterproof. It splits easily into thin sheets		
Marble Marble has an attractive colour and can be easily cut and polished.		
Chalk Chalk is white and wears away very easily		
Limestone Limestone is quite soft and can be easily carved or shaped		
Granite Granite is very hard and doesn't wear away easily		

Used to make steps and roads

Splits easily and is waterproof

Making sticks of chalk for blackboards

Very hard

Make buildings look attractive

Very soft and white

Good for putting on roofs

Can be cut easily

Used as a building material

Looks pretty when polished

Use information in the table to answer the questions which follow

Type of rock	Texture	Waterproof or not
Chalk	Soft a crumbly	Water soaks in
Slate	Splits easily	Waterproof
Granite	Very hard	Waterproof
Marble	Hard	Waterproof

1. Which rock would be used to make roofs?

I put this answer because.....

2. Which rock is used to make roads?.....

I put this answer because

3. Name a rock that is impermeable:.....

4. Impermeable means

Use information in the table to answer the questions which follow

	Is scratched by A fingernail	Is scratched by a 2p coin	Is scratched by An iron nail
Chalk	yes	yes	yes
Granite	no	no	no
Slate	no	yes	yes
Marble	no	no	yes

3. Which is the hardest rock from those listed?

I put this answer because

4. Which is the softest rock from those listed in the table?

I put this answer because

Soils

- Soils are a mixture of tiny particles of rock, dead plants and animals, air and water.
- The best soil (called **loam**) is a mixture of sand, clay and humus. It is dark in colour and crumbly in texture
- Good soil often contains millions of tiny animals.

Words

Sandy soil: often very dry as water drains away quickly

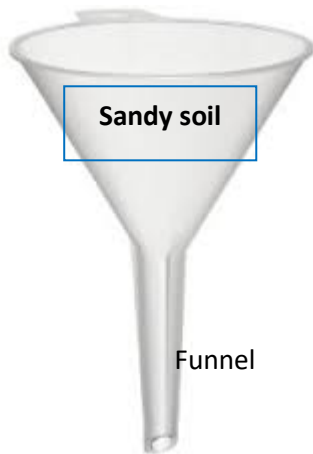
Clay soil: Easily gets water-logged as it doesn't drain

Humus: the name given to the dead plants found in soil
Humus provides food for the plants and helps keep the soil moist

Peat: has no rock particles at all. It is just rotting roots and leaves.

Investigating how easily water flows through different types of soil

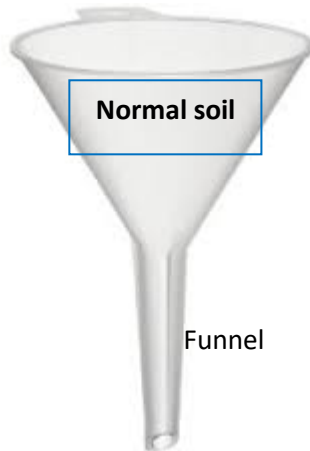
(testing the permeability of soil)



Funnel



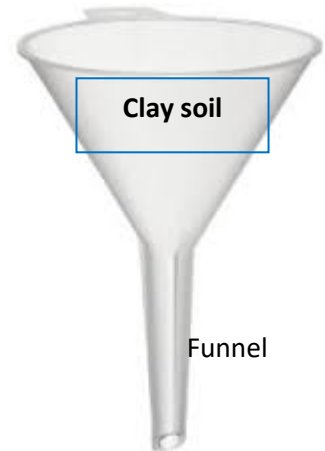
Beaker



Funnel



Beaker



Funnel



Beaker



Measuring cylinder



Timer

Apparatus we used

Funnels

Beakers

Measuring cylinder

Timer

Investigation:

Aim of the investigation

To find out which soil drains water the quickest

This is what am going to do:

I will have 3 funnels each containing different soil.

I will add 100ml of water to each.

I will measure the volume of water that drips through the soil in 5 minutes

I am going to keep these things the same for each experiment

Results

Type of soil	Volume of water that drips through in 5 minutes
Normal soil	
Sandy soil	
Clay soil	

This is my conclusion:

Word List

Permeable	Water will soak into it (the opposite of waterproof)
Impermeable	Waterproof. Water will not soak into it.
Porous	Full of tiny holes. A porous rock is usually permeable.
Loam	A well-balanced soil that contains lots of nutrients. It is the best soil for most plants. Loam contains some sand, some clay and some humus. It stays moist but still allows water to drain away.
Humus	Decaying plants and roots found in soil. Humus provides food for plants and also helps keep the soil moist.
Conclusion:	What you find out in an investigation