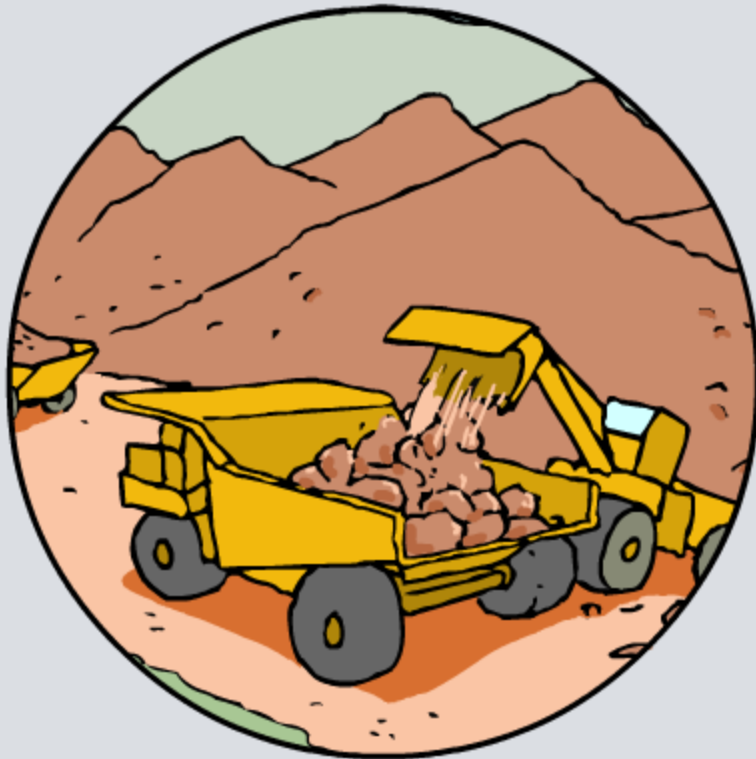
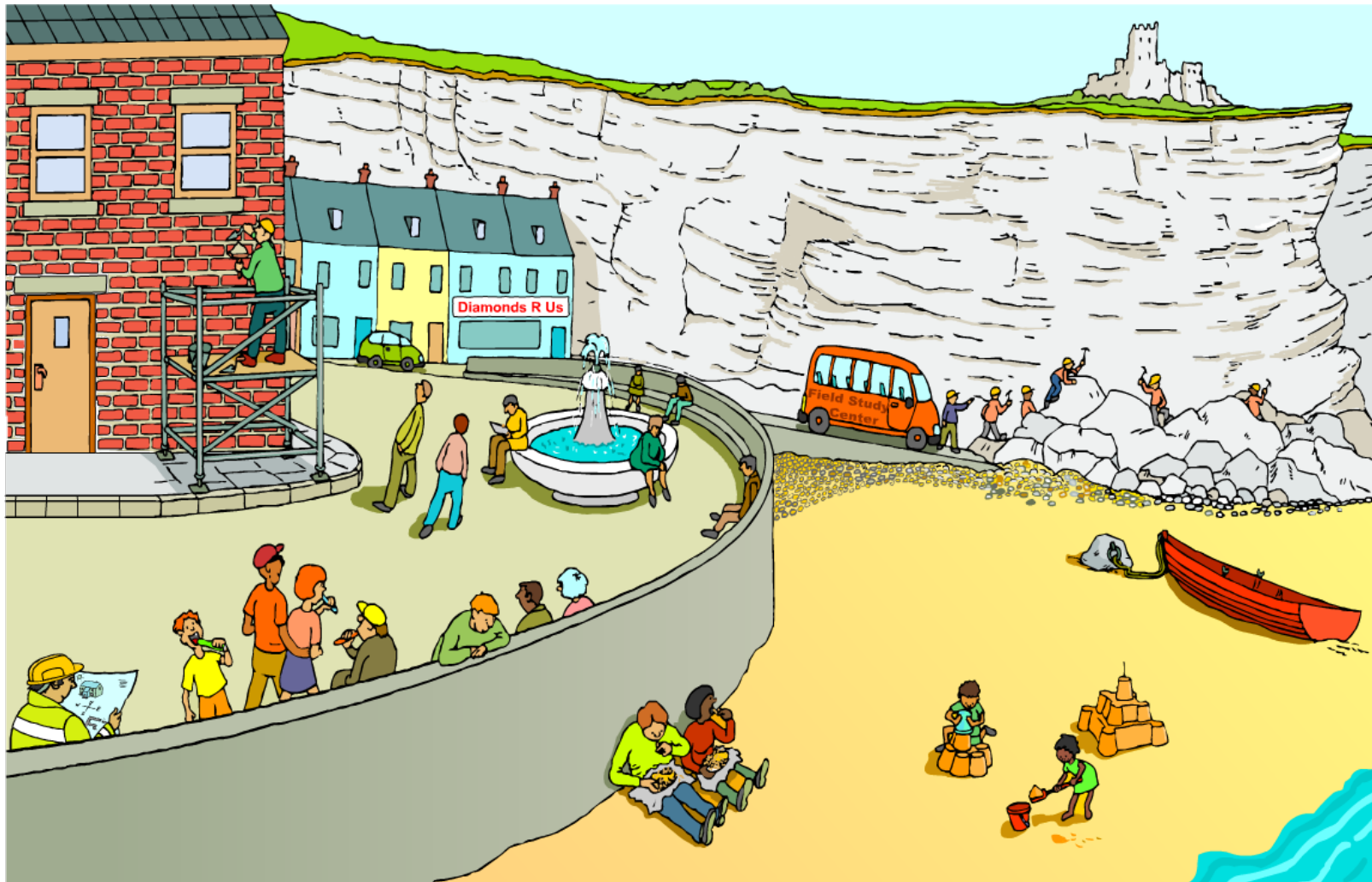


Using Rocks



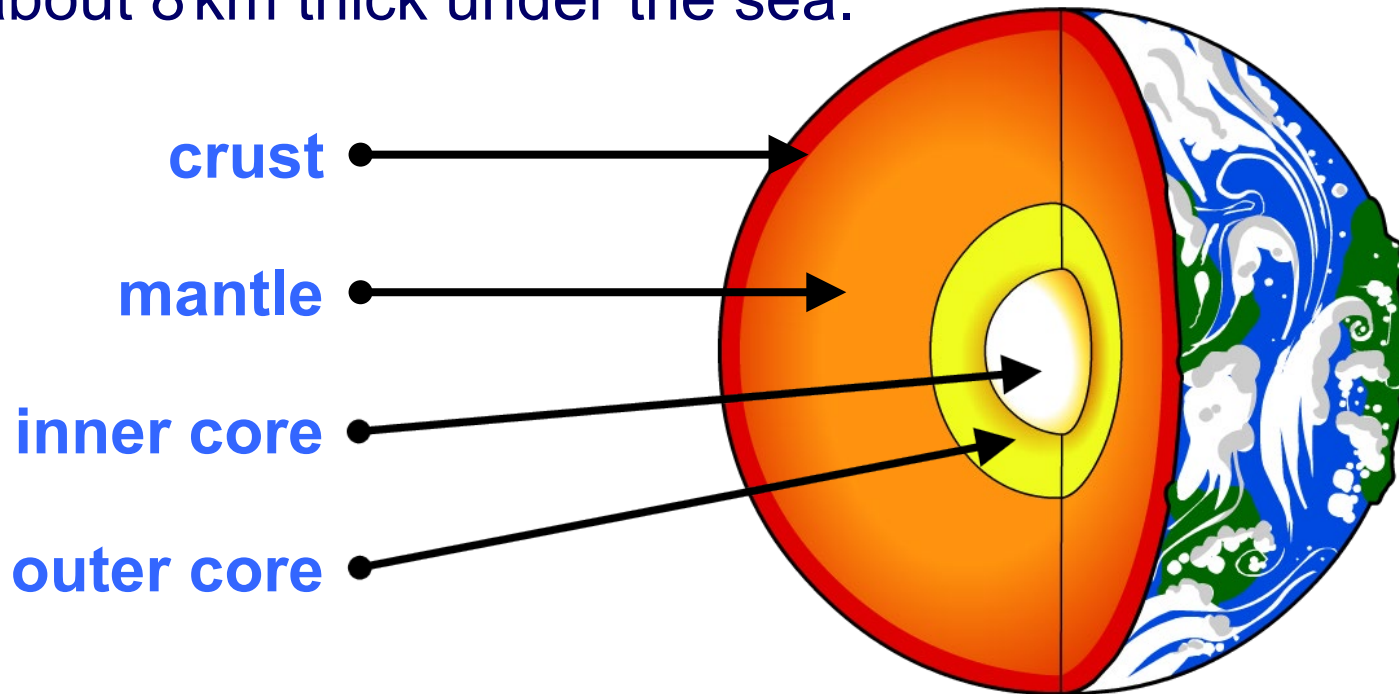
What useful substances do we get from rocks?



Where do the rocks come from?

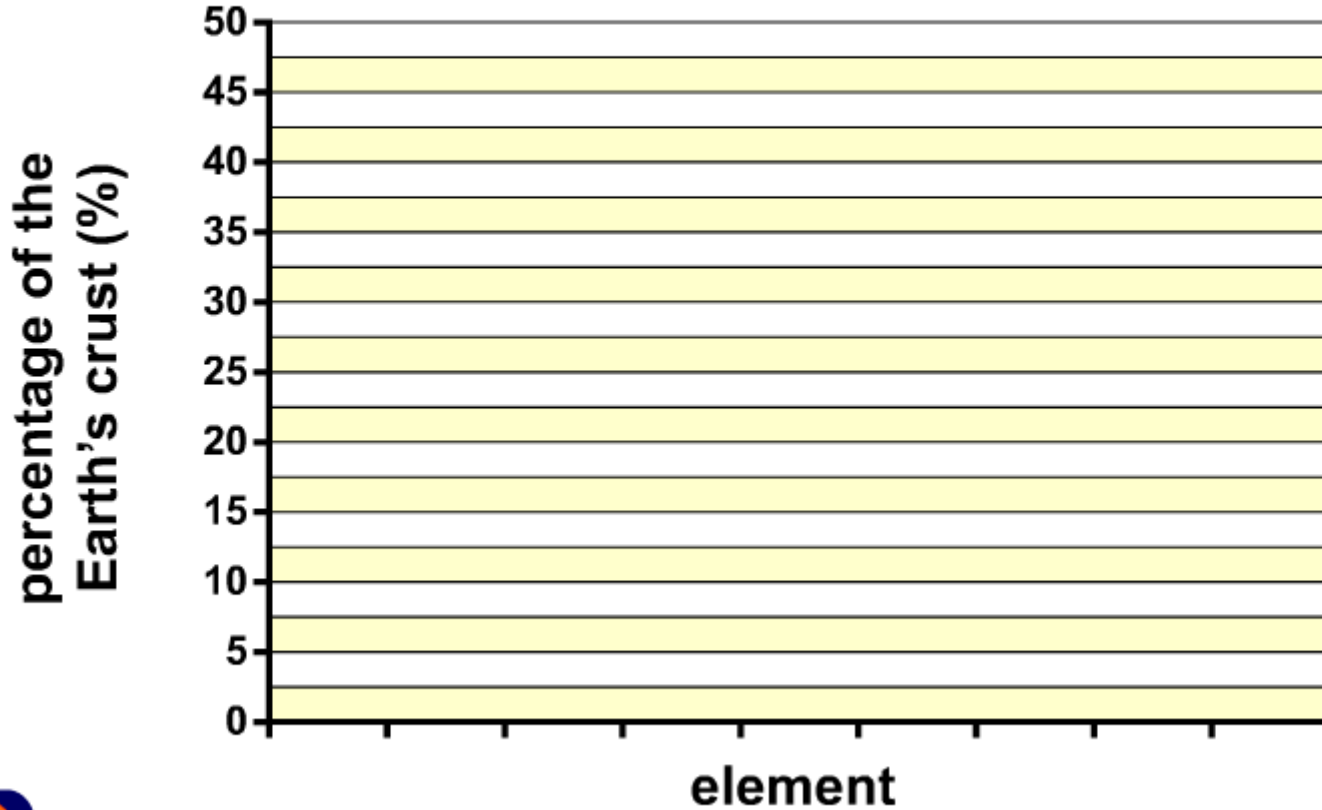
We get many useful substances from rocks, such as building materials, metals, pigments and jewels. But where do we get the rocks themselves from?

They come from the Earth's crust. The Earth's crust is the thin outer layer of the Earth. It is about 30km thick on land and only about 8km thick under the sea.



What is the Earth's crust made of?

Composition of the Earth's crust



Many of the useful substances we get from the Earth's crust are minerals, which contain metals.

Here are the names and formulas of some of the most common minerals.

mineral	formula	metal extracted from it
haematite	Fe_2O_3	iron
bauxite	Al_2O_3	aluminum
galena	PbS	lead
rutile	TiO_2	titanium
chalcopyrite	CuFeS_2	copper



We get rocks from the Earth's crust by digging them up in mines and quarries.

Do you have any mines or quarries near where you live?

What do you think is the impact of a mine or quarry on the local environment?



Slate has been mined since Roman times for use in roofing, flooring, cladding, and architectural products.

Penrhyn Quarry, located in Wales (UK), is thought to be the world's largest slate quarry. A mixture of modern and traditional methods are used to extract the slate, including opencast mining.

What impact do you think building the mine has had on the environment?

Do you think the benefits of the mine outweigh the costs?



Complete these sentences about uses of rocks

1a. The outer layer of the Earth is called the

_____.

1b. We get many useful substances from the

_____ in the Earth's crust.

2. These useful substances are obtained by digging them up in mines and _____.

3. Some rocks are used for _____, others

metals

rocks

ore

building

crust

quarries

habitats

core

?

hide

solve



What is weathering?

Rocks are different shapes and sizes because they are changed by the conditions in their environment.

The breakdown of rocks into smaller fragments is called **weathering**. Eventually the fragments become soil.

Can you think of anything that could cause weathering?

Rocks can be weathered by temperature change, water, frost and even plants and animals.



Types of weathering

There are three types of weathering:

- physical weathering
- biological weathering
- chemical weathering.



Which type of weathering is caused by each of these:

- temperature change
- acid rain
- plants and animals?

