



Geography

Magnificent Mountains



How Mountains are Made

twinkl



Aim

- I can explain how different types of mountains are formed.

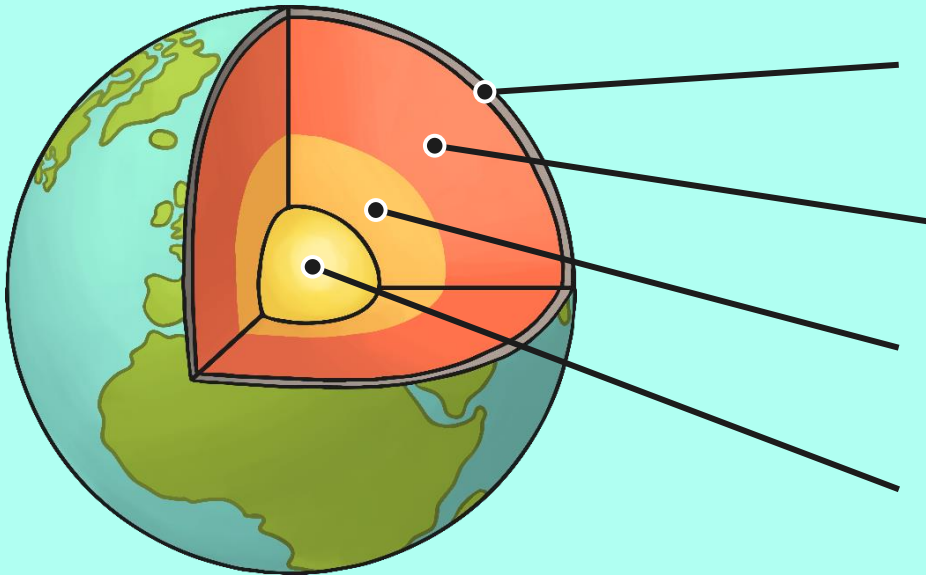
Success Criteria

- I can tell you that mountains formed a very long time ago.
- I can describe how tectonic plates move together to create fold mountains.
- I can describe how lava flow creates volcanic mountains.
- I can describe how fault lines in the Earth's crust move to create mountains.
- I can describe how pressure from magma under the Earth's surface creates dome mountains.
- I can describe how erosion creates plateau mountains.

Can You Remember What's under Your Feet?



Can you join the words to the correct layers?



inner core

mantle

crust

outer core

Can You Remember What's under Your Feet?

The Earth's crust isn't one solid layer.

It is broken up into huge areas called tectonic plates that float on top of the mantle.

This map shows where the tectonic plates are.



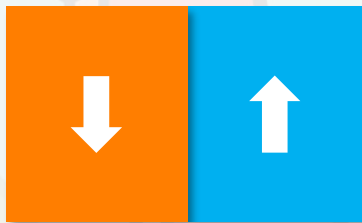
How Can You Move Your Plates?



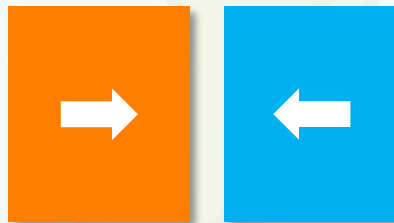
Use the two pieces of paper you have been given.

Lay your “plates” flat onto the table.

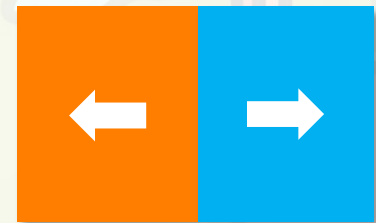
How many different ways can you move the plates around?



**Rubbing
together**

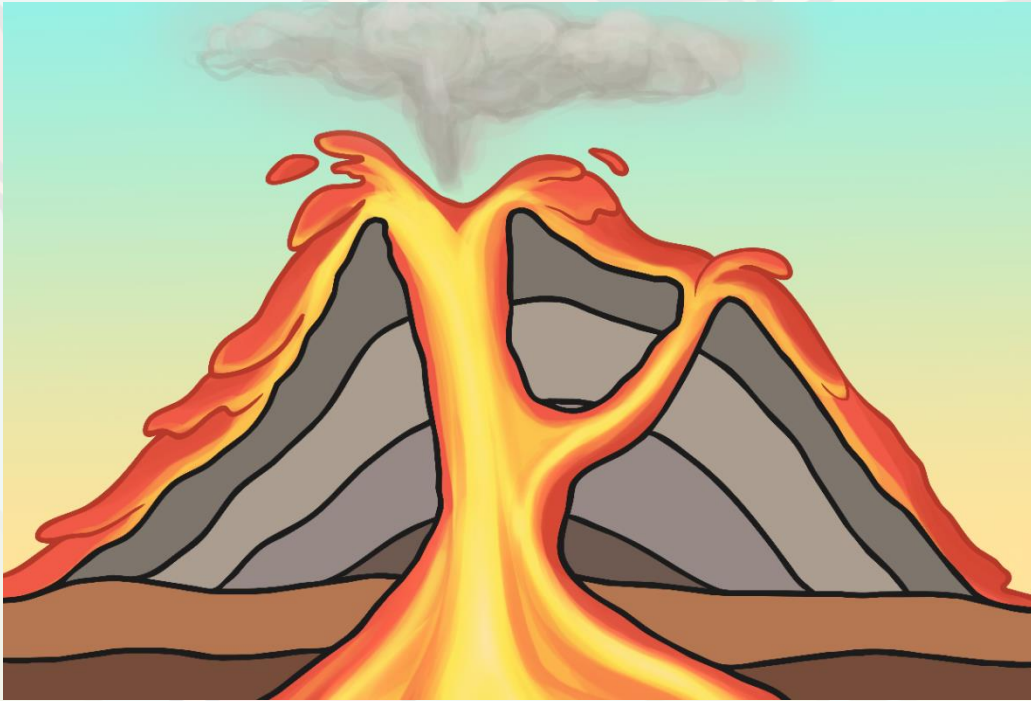


**Towards
each other**



**Away from
each other**

What Have Tectonic Plates Got to Do with Mountains?



What happens when magma escapes through gaps in the Earth's surface?

Volcanoes are one way mountains were formed.

Watch the video to find out another way.



How Mountains are Made

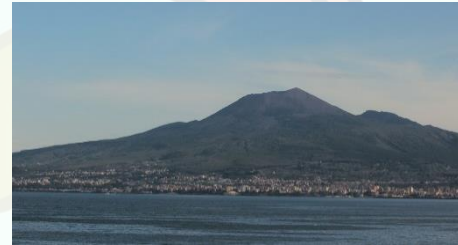
There are 5 main types of mountains:



fold mountains



fault-block mountains



volcanic mountains



dome mountains



plateau mountains

Each one is formed differently.

Photo courtesy of Tambako the Jaguar, Ken Lund, DragonGhost19, inknife_2000 and Nicholas_T@flickr.com) - granted under creative commons licence - attribution

Fold Mountains

Fold mountains occur when tectonic plates collide.

The edges of the plates crumple as they are pushed together.

The rock of the Earth's surface is pushed up to create mountains.

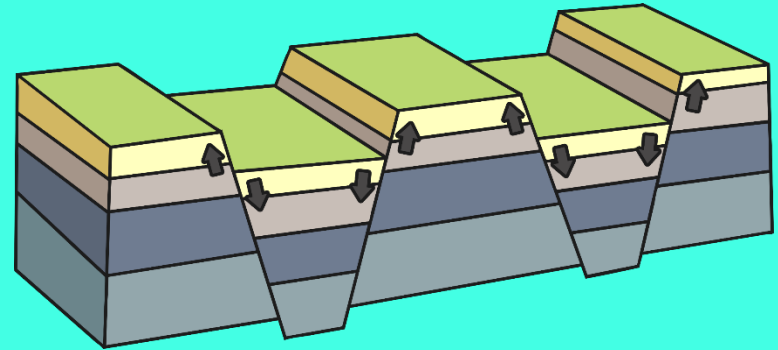


The Alps are fold mountains.

Fault-block Mountains

When cracks in the Earth's surface open up, large chunks of rock can be pushed up while others are pushed down.

This creates mountains with a long slope on one side, and a sharp drop on the other.

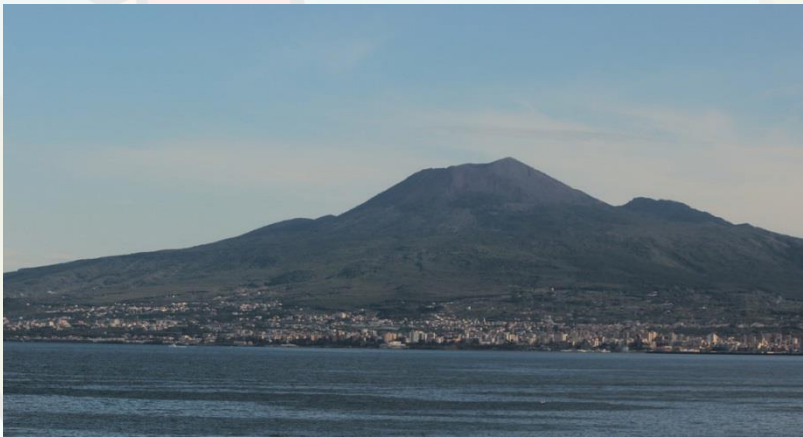


The Sierra Nevada mountains in California, USA are fault-block mountains.

Volcanic Mountains

Volcanic mountains are formed around volcanoes.

Volcanic mountains are made of layers of ash and cooled lava.



Mount Vesuvius, Italy is a volcanic mountain.

Dome Mountains

Dome mountains are smooth and round-looking.

They are formed when magma is forced up between the crust and the mantle, but doesn't ever flow out.

The magma makes the land bubble up like a balloon.



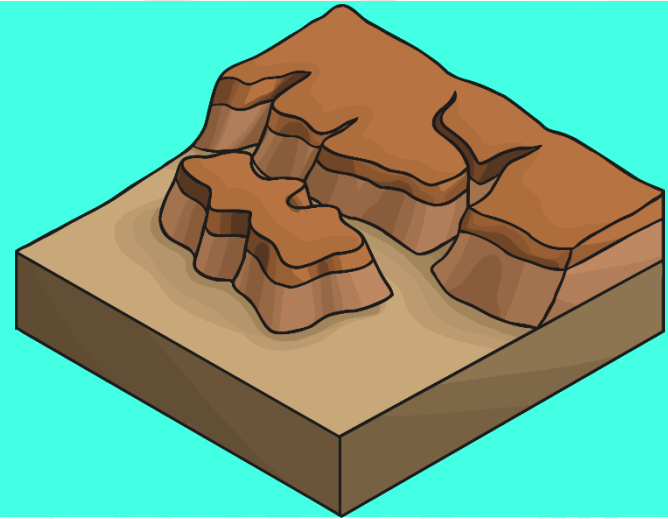
**Devils Tower, USA
is a dome mountain.**

Plateau Mountains

Plateau mountains are different from the other mountain types.

They haven't formed because of rock or magma being pushed up.

They form because of materials being taken away through erosion, which has left deep valleys or gorges next to high cliffs.



The Allegheny Mountains, USA, are an example of this type of mountain.

How Mountains are Made



You have five activities to complete – one for each mountain type.

How Mountains are Made Plateau Mountains

You will need:

- Wooden blocks (3D cubes/cuboids would do)
- Tray of sand
- Longer tray
- Jug of water

What to do:

- Put the tray of sand inside the larger tray.
- Put your blocks so your tray of sand is slightly higher at one end than the other. Slowly pour the water into the higher end of the tray.
- What happens to the sand?
- What happens to the water?
- If you carried on pouring the water what would happen?
- Make a note of anything else you find interesting.



How Mountains are Made Dome Mountains

You will need:

- Photocopier paper
- Tissue paper
- Thicker, more scratchy material

What to do:

For each material on your table:

- Push from the outside of the materials in until they make a dome shape.
- How easily do they fold?
- What kinds of fold do they make?
- What difference if any does the different types of material?
- Make a note of anything else you find interesting.



How Mountains are Made Dome Mountains

You will need:

- Tissues
- Fabric
- Balloons

What to do:

Stretch the material out and find the small surface hole in the tissue. Begin to feed through your balloons.

Note very carefully what it looks like as it breaks through the surface.

- Begin to blow up your balloons slowly. What happens to the tissue? What happens to the balloons?
- Try the same thing with the material. What happens to the tissue? What happens to the balloons? Make a note of anything else you find interesting.



How Mountains are Made Volcanic Mountains

You will need:

- Tin foil
- Red icing or piping bags

What to do:

- **Wash your hands!**
- Put the tin foil flat across the icing bag then slowly move it upwards. Make a small hole in the foil and release the icing.
- Note what happens.
- Does the icing stay in one place?
- What will happen if the icing dries?
- What will happen if the icing is then pushed out again?
- What happens to the tin foil?
- What happens to the icing?
- Make a note of anything else you find interesting.



How Mountains are Made Fault-block Mountains

You will need:

- 3 triangular prisms
- 5 or 6 hardback books



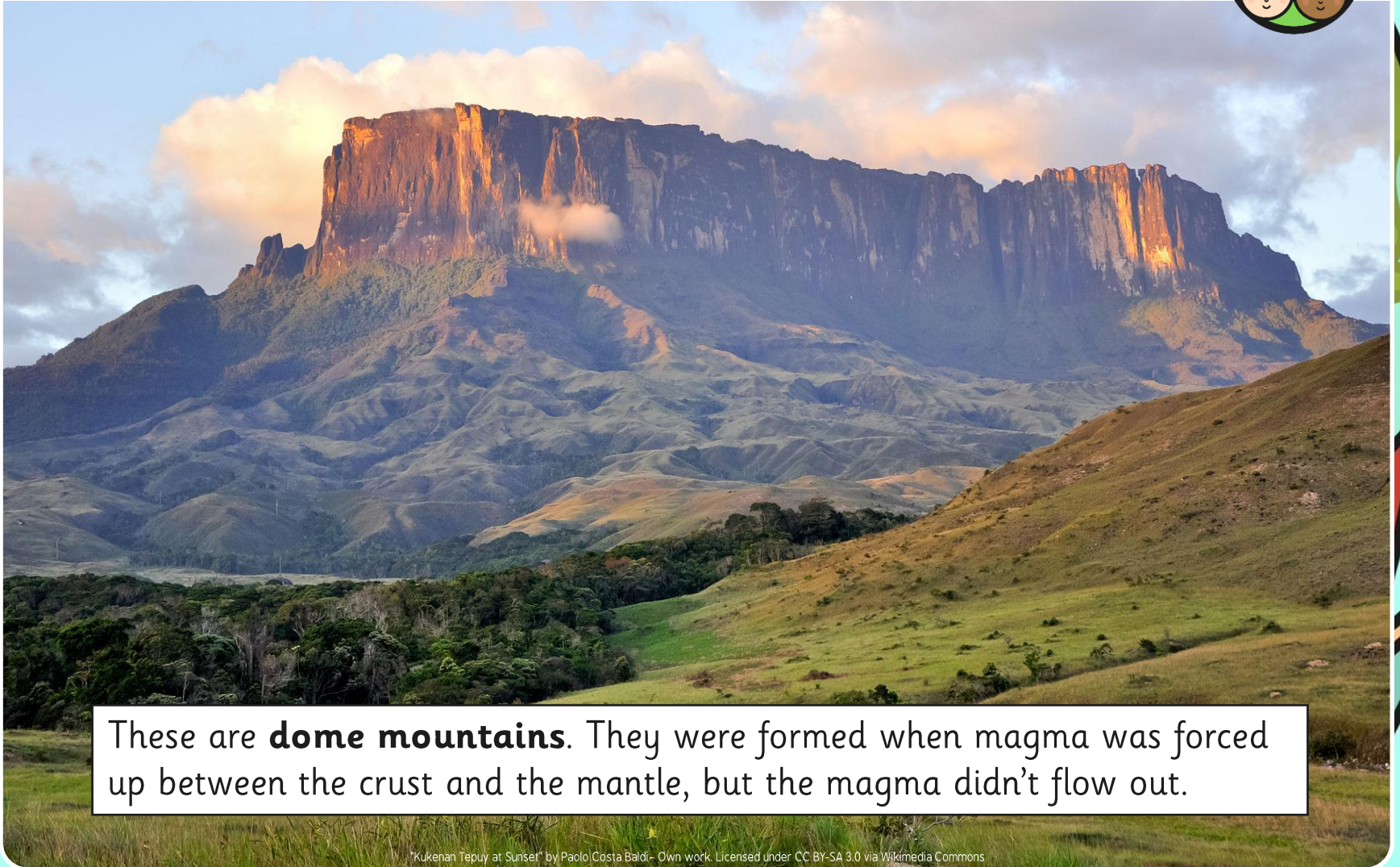
What to do:

- Arrange your three triangular prisms as shown in the diagram above.
- Slowly, slide the left prism away from the others.
- What happens to the prism in the middle?
- What would happen if you tried to push the prisms back together again?
- Stand your books on the table so that they are all lined up with the spines at the top. Slowly allow the books to tilt from upright to an angle of 45°.
- What happens to the books in the middle?
- What would happen if you tried to push the books back together again?
- Make a note of anything else you find interesting.



Make sure you write down what you noticed during each activity and draw a diagram of your results.

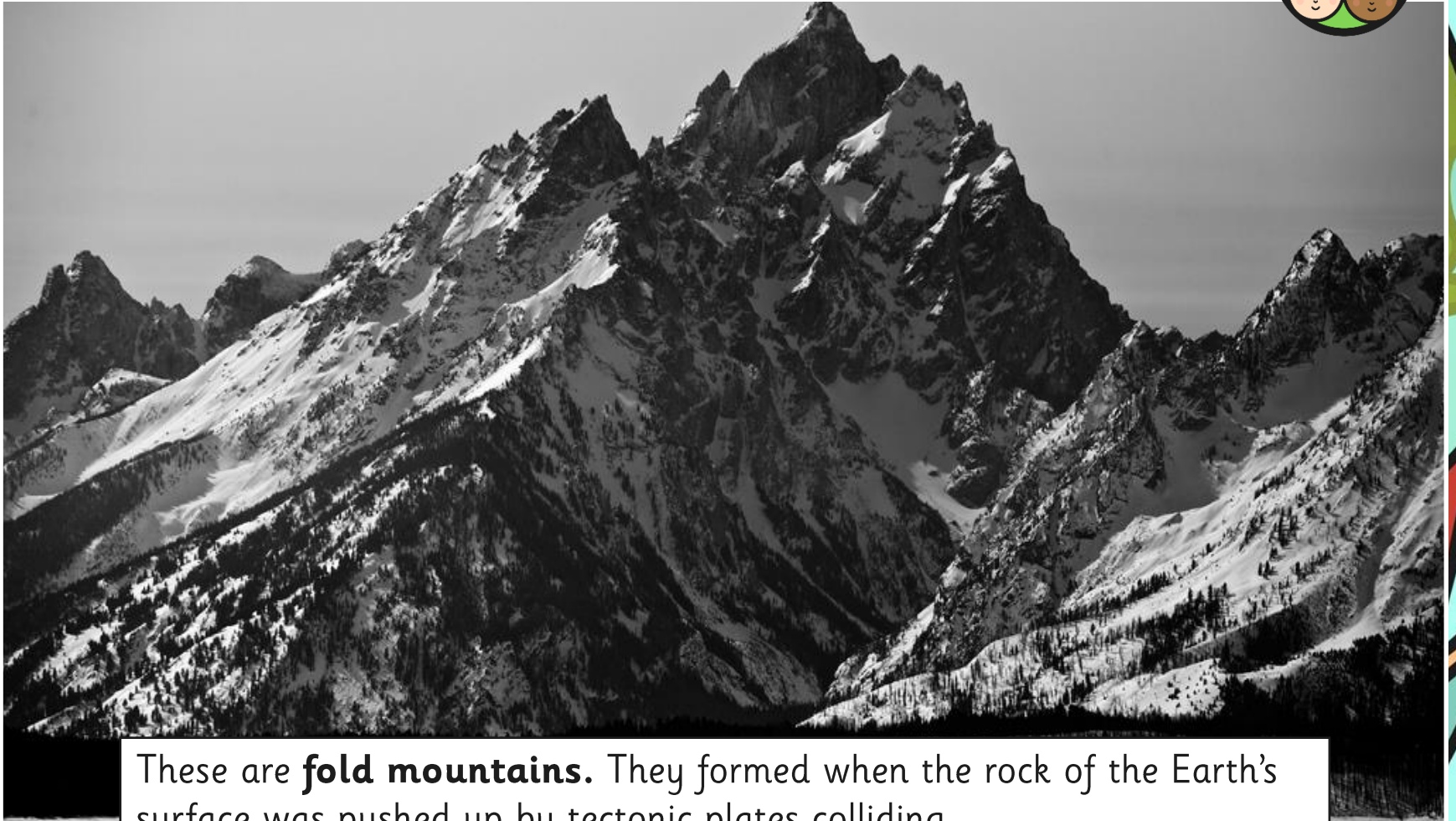
How Were These Mountains Made?



These are **dome mountains**. They were formed when magma was forced up between the crust and the mantle, but the magma didn't flow out.

"Kukenan Tepuy at Sunset" by Paolo Costa Baldi - Own work. Licensed under CC BY-SA 3.0 via Wikimedia Commons

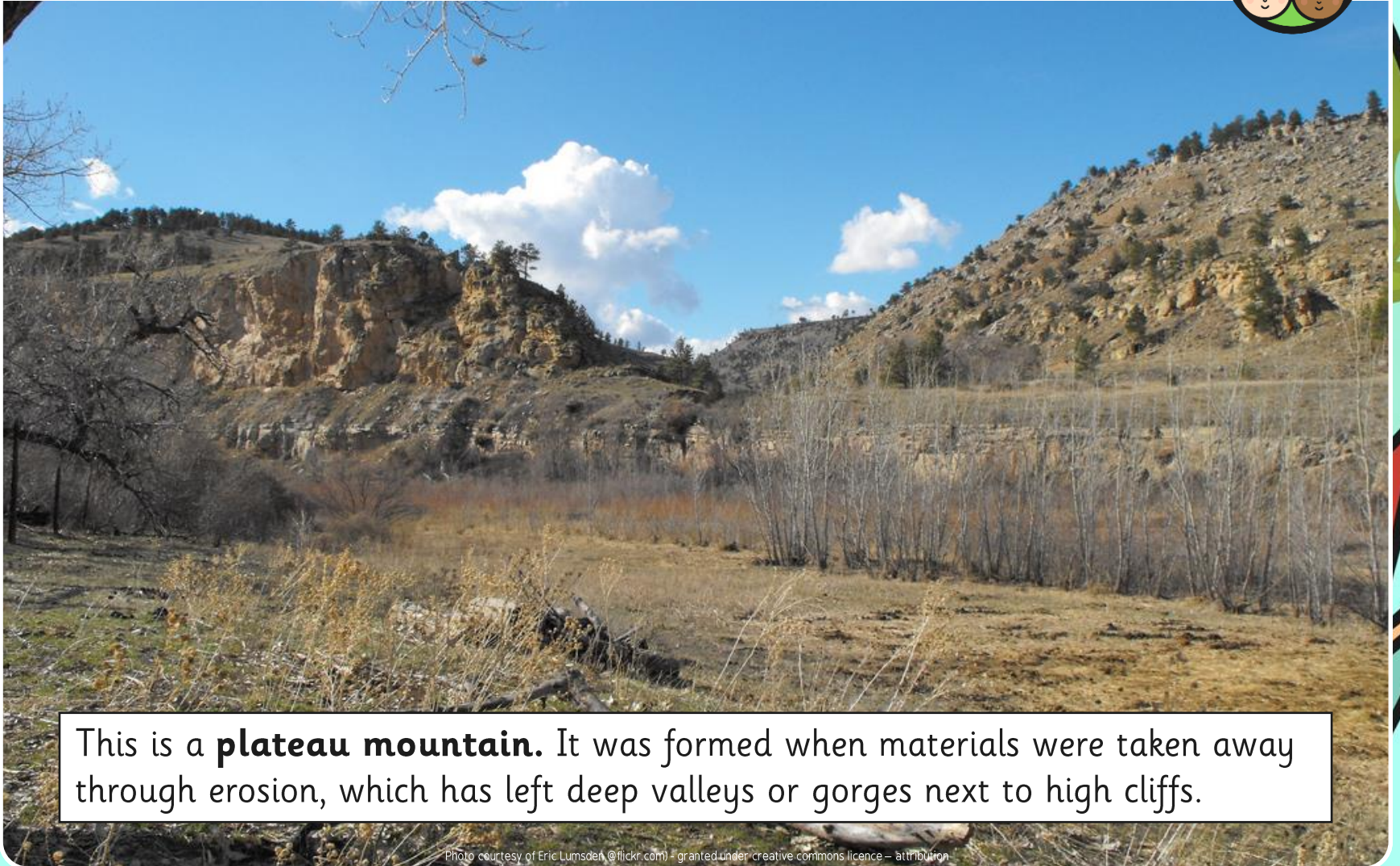
How Were These Mountains Made?



These are **fold mountains**. They formed when the rock of the Earth's surface was pushed up by tectonic plates colliding.

Photo courtesy of Zach Dischner @flickr.com) - granted under creative commons licence – attribution

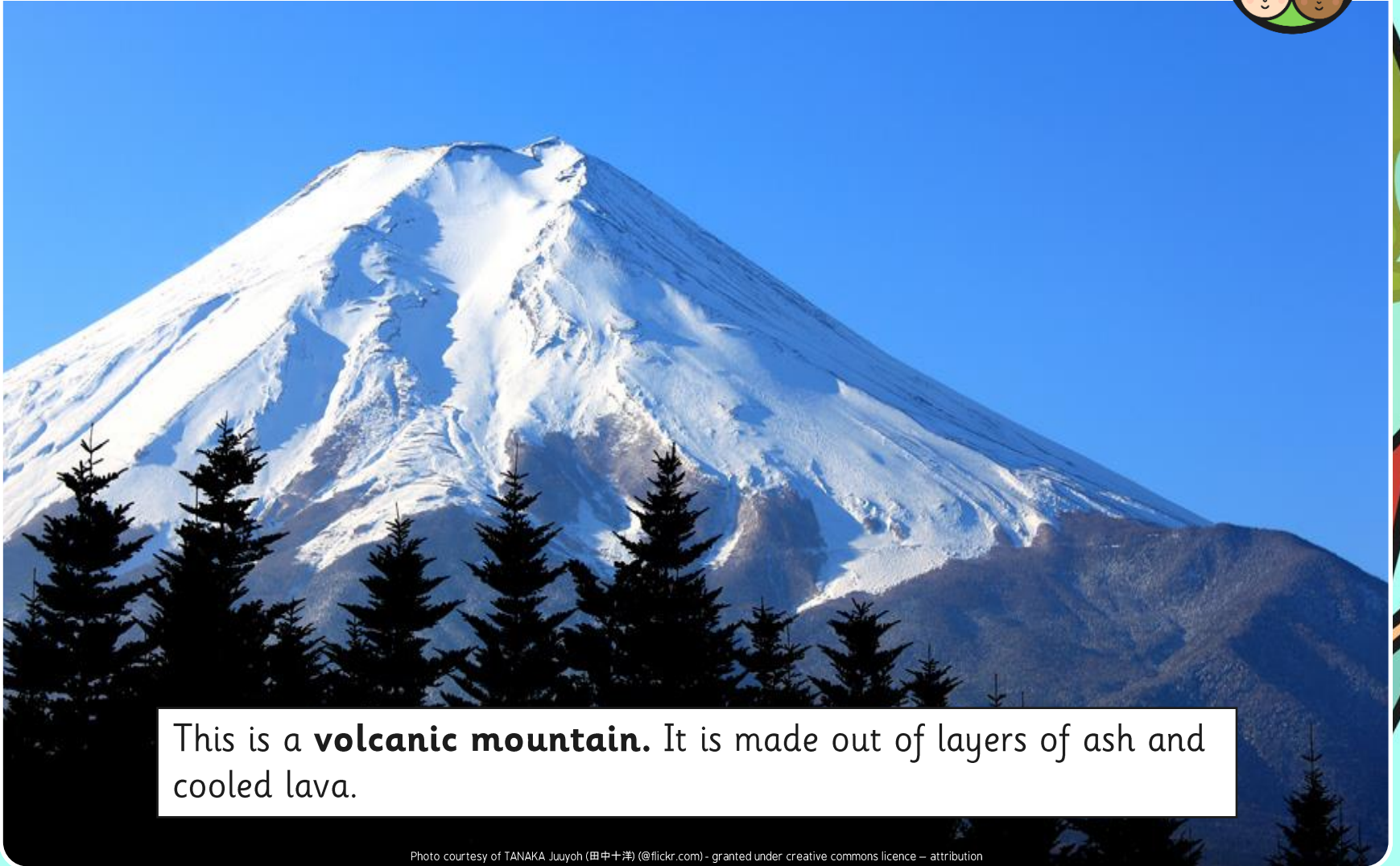
How Were These Mountains Made?



This is a **plateau mountain**. It was formed when materials were taken away through erosion, which has left deep valleys or gorges next to high cliffs.

Photo courtesy of Eric Lumsden @flickr.com - granted under creative commons licence - attribution

How Were These Mountains Made?



This is a **volcanic mountain**. It is made out of layers of ash and cooled lava.

Photo courtesy of TANAKA Juuyoh (田中十洋) (@flickr.com) - granted under creative commons licence – attribution

How Were These Mountains Made?



This is a **fault-block mountain**. It formed when cracks in the Earth's surface open up and large chunks of rock were pushed up while others were pushed down.

"Badlands National Park Scan 0015" by Stefan Fussen. Licensed under CC BY-SA 3.0 via Wikimedia Commons

Aim



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