



How Mountains are Made

twinkl

Aim

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

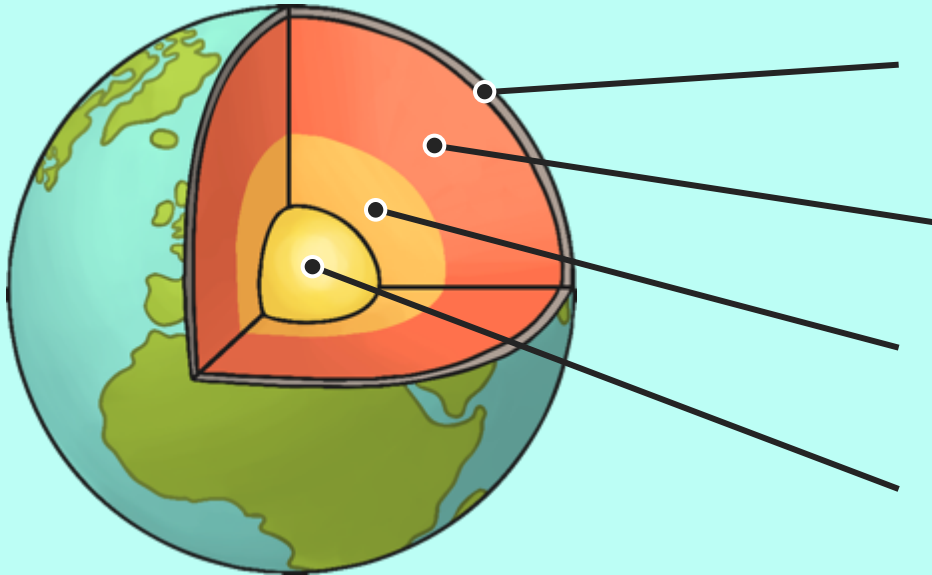
Success Criteria

- 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.



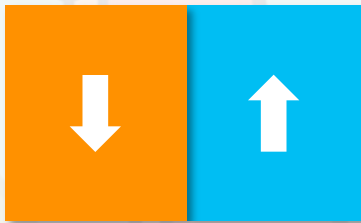
How Can You Move Your Plates?



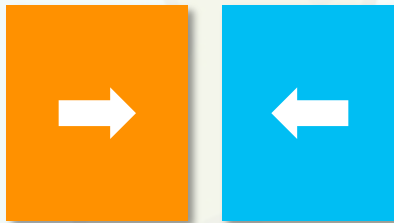
Use two pieces of paper

Lay your “plates” (pieces of paper) flat onto the table.

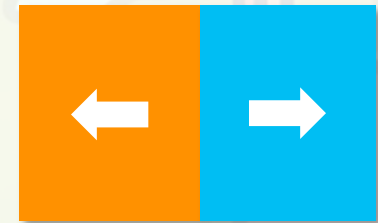
How many different ways can you move the plates around?



**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

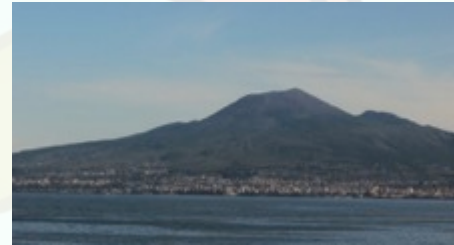
There are 5 main types of mountains:



fold mountains



fault-block mountains



volcanic mountains



dome mountains



plateau mountains

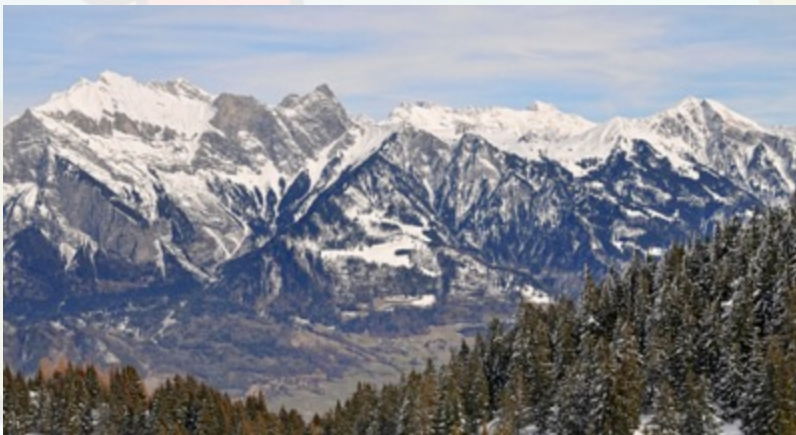
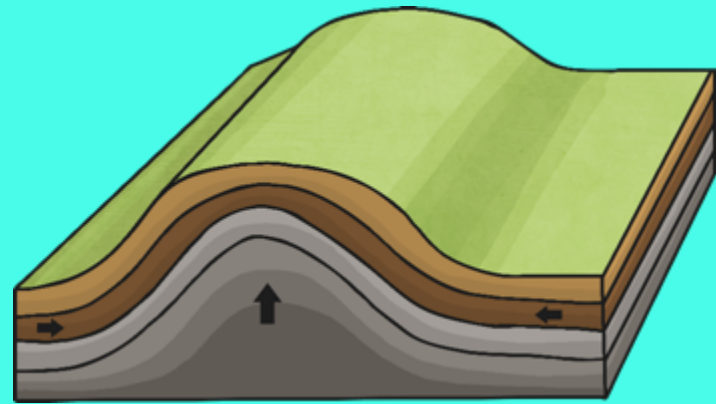
Each one is formed differently.

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.

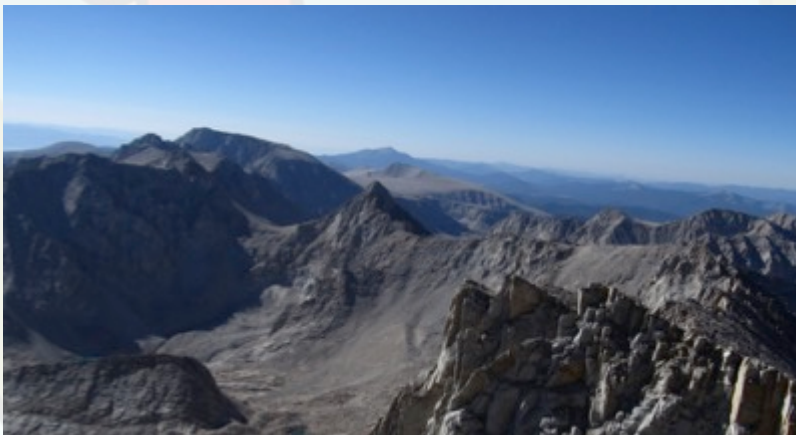
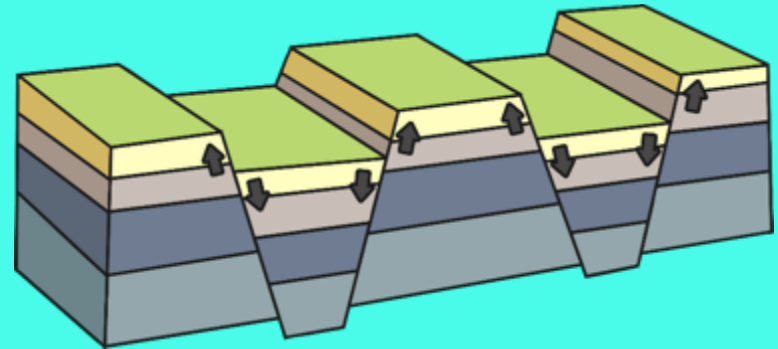


The Alps are fold mountains.

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.

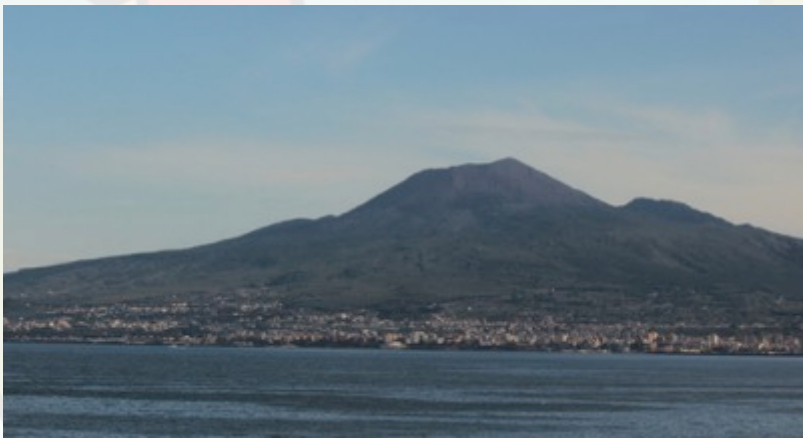


The Sierra Nevada mountains in California, USA are fault-block mountains.

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.



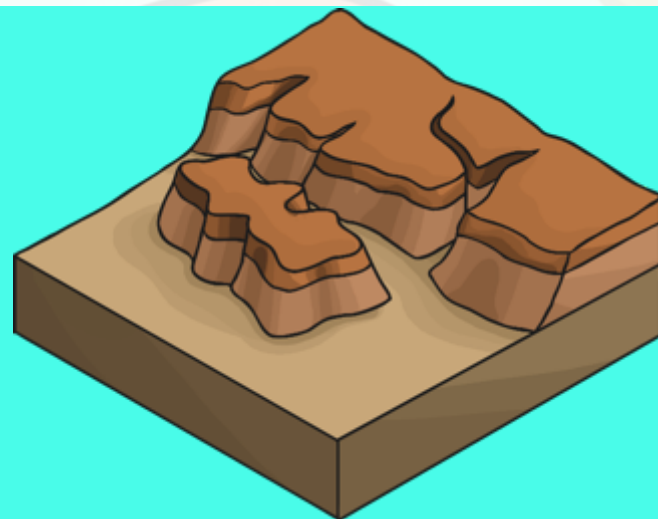
**Devils Tower, USA
is a dome mountain.**

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	How Mountains are Made Dome Mountains	How Mountains are Made Dome Mountains	How Mountains are Made Volcanic Mountains	How Mountains are Made Fault-block Mountains
<p>You will need:</p> <ul style="list-style-type: none">• Wooden blocks (10 cubes/coins would do)• Tray of sand• Larger tray• Jug of water <p>What to do:</p> <ul style="list-style-type: none">• Fill the tray of sand inside the larger tray• Fit your blocks to your tray of sand a slightly higher on one side. 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.	<p>You will need:</p> <ul style="list-style-type: none">• Photocopy paper• Cassa paper• Thicker, more stretchy material <p>What to do:</p> <p>For each material on your table:</p> <ul style="list-style-type: none">• Push from the outside if the material is what they make it• How easily do they fold?• What kinds of fold do they make?• What differences if any does the different types of material?• Make a note of anything else you find interesting.	<p>You will need:</p> <ul style="list-style-type: none">• Tissue• Fabric• Balloons <p>What to do:</p> <p>Stretch the material over and find the small surface hole in the tissue. Begin to feed through your balloon.</p> <p>Push very carefully when it feels like an it breaks through the air?</p> <ul style="list-style-type: none">• Begin to blow up your balloon slowly.• What happens to the tissue? What happens to the balloon?• Try the same thing with the material.• What happens to the tissue? What happens to the balloon?• Make a note of anything else you find interesting.	<p>You will need:</p> <ul style="list-style-type: none">• Tin foil• Rolling mangle/pipe <p>What to do:</p> <ul style="list-style-type: none">• Wash your hands!• Put the tin foil flat across the table long then slowly start to unroll it. Make a small hole in the foil and release the roll.• Now what happens?• Does the roll stay in one place?• What will happen if the roll is moved?• What will happen if the roll is then pushed out again?• What happens to the tin foil?• What happens to the roll?• Make a note of anything else you find interesting.	<p>You will need:</p> <ul style="list-style-type: none">• 3 triangular prisms• 5 or 6 hardback books  <p>What to do:</p> <ul style="list-style-type: none">• 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 sink 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 Mountains are Made

Fold 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 fold.
- How easily do they fold?
- What kinds of fold do they make?
- What difference if any does the different types of material make?
- 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.



How Mountains are Made

Dome Mountains

You will need:

- Tissues
- A variety of fabrics
- Balloons
- Balloon pumps

What to do:

- Make a small hole in the tissue.
- Feed your balloon through the hole.
What happens to the tissue? What happens to the balloon?
- Layer the different fabrics over the balloon and tissue.
- Make a note of anything else you find interesting.



How Mountains are Made

Volcanic Mountains

You will need:

- Tinfoil
- Red butter cream in piping bags

What to do:

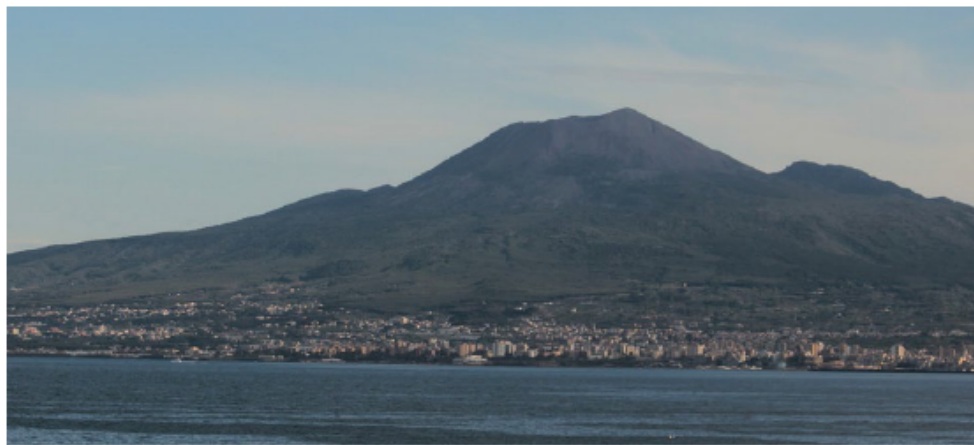
- **Wash your hands!**
- Put the tinfoil flat across the icing bag, then slowly move the bag upwards. Make a small hole in the foil and release the icing.
- Note what happens.
- Does the butter cream stay in one place?
- What will happen if the butter cream dries?
- What will happen if the butter cream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

Butter Cream Ingredients:

- 70g soft spreadable butter
- 140g icing sugar
- 1 tbsp milk
- Few drops red food colouring

Butter Cream Method:

- Beat the butter in a large bowl until soft. Add half of the icing sugar and beat until smooth.
- Add the remaining icing sugar and one tablespoon of the milk and beat the mixture until creamy and smooth. Beat in the milk, if necessary, to loosen the mixture.
- Stir in the food colouring until well combined.



How Mountains are Made

Plateau Mountains

You will need:

- Wooden blocks (3D cubes/cuboids would do)
- Tray of sand
- Larger 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 at the other. Slowly pour the water into the higher end of the sand 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 Were These Mountains Made?



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How Were These Mountains Made?



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

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