

Teacher Resource

Measuring Everest

Focus Questions

- Before watching the BTN story, discuss how you think scientists measure the height of a mountain.
- Mount Everest is the 2nd highest mountain on Earth. True or false?
- How tall is Mount Everest?
 - 888 metres
 - 4,448 metres
 - 8,848 metres
- What shape do scientists use to measure the height of a mountain?
- Explain how scientists used trigonometry to measure mountains.
- Who was the first person to measure Mount Everest?
- What did he use to measure the angles of Mount Everest in 1856? Describe.
- How did photogrammetry help surveyors measure Mount Everest?
- What does GPS stand for?
- What natural events may have affected the height of Mount Everest?

Activity

What do you see, think and wonder?

Students watch the BTN *Measuring Everest* story, then respond to the following questions:

- What did you SEE in this video?
- What do you THINK about what you saw in this video?
- What did you LEARN from this story?
- What was SURPRISING about this story?
- What QUESTIONS do you have?

Activity

Brainstorm

As a class, discuss the BTN *Measuring Everest* story. On a mind map, record what students know about Mount Everest. Use the following questions to help guide discussion:

- Where is Mount Everest? Locate on a map.
- Which mountain range is Mount Everest part of?
- Why did a group of scientists measure Mount Everest?
- How are they measuring it?

Key Learning

Students learn more about the different methods used to measure mountains and create a profile of Mount Everest.

Curriculum

Geography – Year 6

The geographical diversity of the Asia region and the location of its major countries in relation to Australia.

Geography – Year 8

Different types of landscapes and their distinctive landform features.

Geography – Year 7 & 8

Develop geographically significant questions and plan an inquiry, using appropriate geographical methodologies and concepts.

Science – Year 6

Sudden geological changes and extreme weather events can affect Earth's surface.



Activity

Glossary

Students will brainstorm a list of key words and terms that relate to the BTN *Measuring Everest* story. Here are some words to get you started.

Tectonic plates	Measure	Satellites
Summit	Trigonometry	Global Positioning System

Activity

Inquiry Questions

After watching and discussing the BTN *Measuring Everest* story, what questions do students have and what are the gaps in their knowledge? The following KWLH organiser provides students with a framework to explore their knowledge on this topic and consider what they would like to know and learn.

<i>What do I <u>know</u>?</i>	<i>What do I <u>want</u> to know?</i>	<i>What have I <u>learnt</u>?</i>	<i><u>How</u> will I find out?</i>

Students will develop their own question/s for inquiry, collecting and recording information from a wide variety of sources. Students may develop their own question for inquiry or select one or more of the questions below.

- How can mountains grow and shrink?
- How was Mount Everest formed?
- Describe the steps of mountain formation over time.
- Why do mountains in different areas have different shapes?
- What are the different methods for measuring a mountain? Explore one method in detail.

Activity

How do you measure a mountain?

Watch this [Newsround video](#) to learn more about the different methods used to measure mountains.

Method 1 – Using Maths

How can trigonometry be used to measure a mountain?
How accurate is it?

Method 2 – GPS

How does the GPS method work? How accurate is it?
What are the disadvantages of this method?

Method 3 – Photogrammetry

How does this method work? What does it mean for mapping mountains in harder to reach areas?
Can mountain measurement ever be accurate? Give reasons for your answer.



Activity

Understanding Tectonic Plates

Movement of tectonic plates can change the height of a mountain. Watch the [BTN Nepal Earthquake](#) story to find out more about the 2015 earthquake. Students will explore what tectonic plates are and how they work. Some questions to investigate include:

- What is the top layer of the earth called?
- What are tectonic plates?
- What are the edges of tectonic plates called?
- What are the types of tectonic plate movement?

Watch these videos to help understand more about tectonic plates.

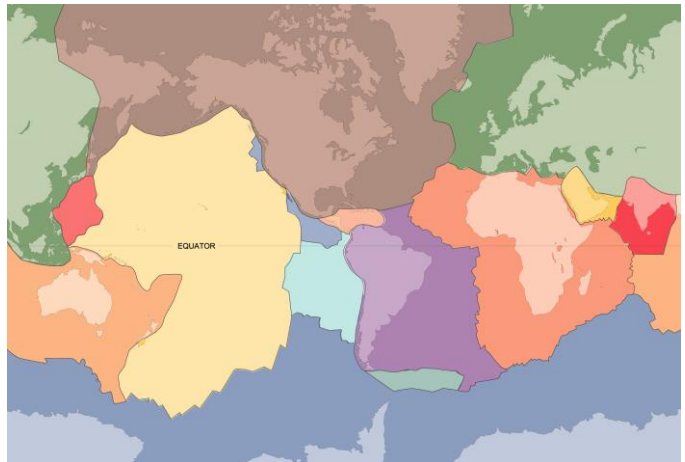
[Introduction to tectonic plates](#)

[Why is Everest so tall?](#)

Use the tectonic plates map at the end of this activity to locate and label the 15 major tectonic plates. Locate Mount Everest on the map

Further investigation

Using an enlarged version of the tectonic plates map, create a class jigsaw puzzle of tectonic plates. Paste your map onto foam or thick card and cut along the tectonic plate lines. Sit the pieces in a small inflatable pool or trough of water and observe how they move. Respond to the following questions about tectonic plates: How do the pieces interact with one another? Are they still or constantly moving? What direction and speed are they moving? Investigate how your jigsaw puzzle experiment reflects how tectonic plates move.



Activity

Profile of Mount Everest

Students will create a profile of Mount Everest using a range of sources of information. Students will use the following questions to help guide their research and use the template at the end of this activity to record their findings.

- Where is Mount Everest?
- How high is Mount Everest?
- Describe the landscape and illustrate an aspect of the mountain.
- What is the weather like?
- What are the climbing conditions like on Mount Everest?
- List 10 interesting facts about Mount Everest.
- Use a Venn diagram to compare and contrast Mount Everest with other mountains around the world. Compare the size of the mountains and other physical features.



Activity

Create a Kahoot Quiz

Use [Kahoot!](#) to test students' knowledge about Mount Everest. Quizzes can be created to recap learning or test personal knowledge. There is also the option to connect with classrooms around the world and play kahoot in real time.



Useful Websites

How do you measure a mountain? – Newsround

<https://www.bbc.co.uk/newsround/41679797>

Mount Everest: Chinese team summit during pandemic – BBC News

<https://www.bbc.com/news/world-asia-52819738>

Nepal Earthquake – BTN

<https://www.abc.net.au/btn/classroom/nepal-earthquake/10526664>

Everest Danger – BTN

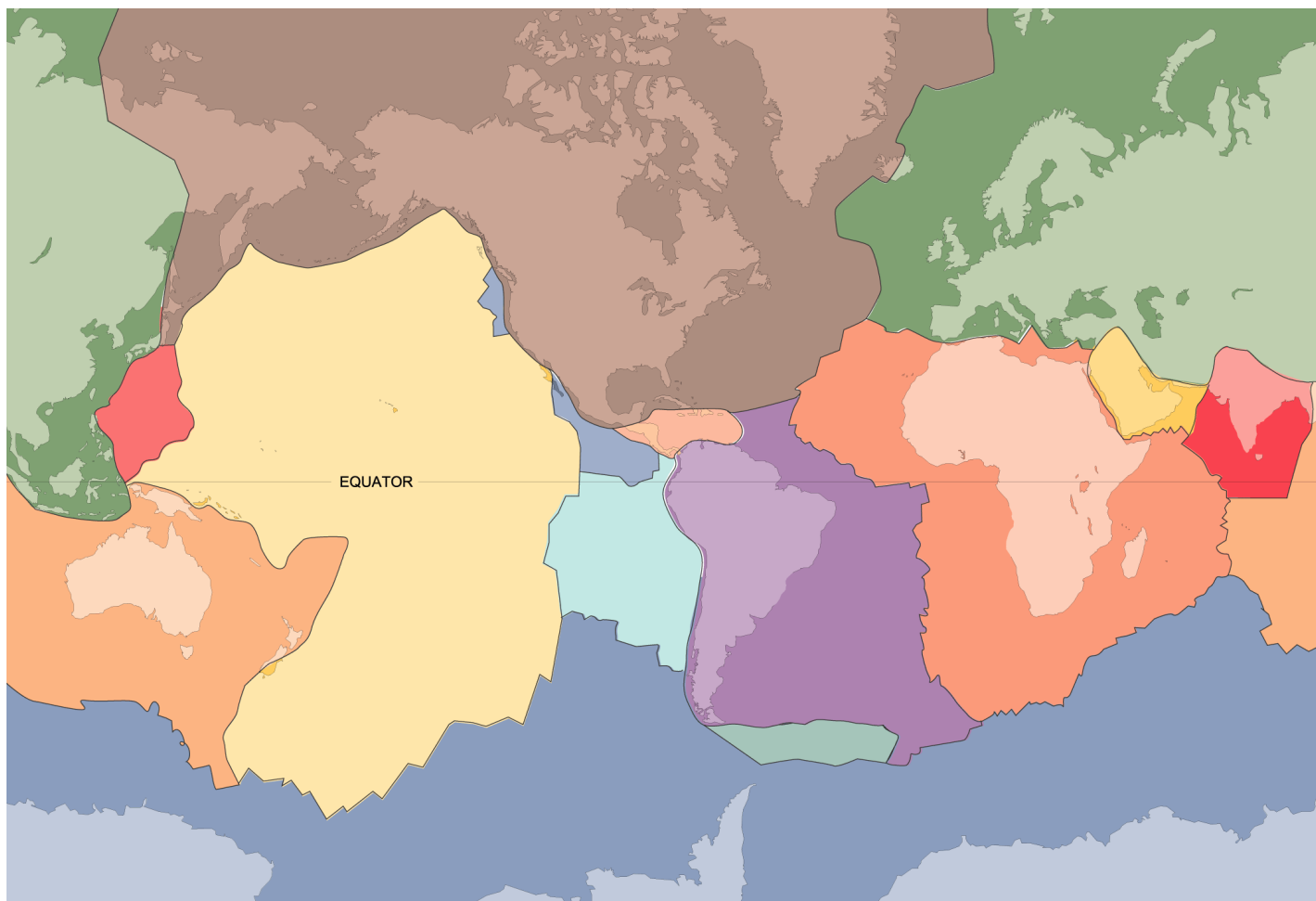
<https://www.abc.net.au/btn/classroom/everest-danger/11164010>

Sherpas – BTN

<https://www.abc.net.au/btn/classroom/sherpas/10528476>

Tectonic Plates

Locate and label the 15 major tectonic plates on the map below.



1. Antarctic plate
2. Indian plate
3. Scotia plate
4. Caribbean plate
5. Filipino plate
6. North American plate
7. Pacific plate
8. Australian plate
9. Cocos plate
10. Nazca plate
11. South American plate
12. African plate
13. Eurasian plate
14. Juan De Fuca plate
15. Arabian plate