

Lesson Two

Canyons and Valleys: Physical Landscapes

The aim of this lesson is to build on the pupils' understanding of the physical landscape in the USA. They will begin the lesson by watching a video which moves through different landscapes. Pupils will then explore processes of erosion to find out how some of the physical features are created.

Key Questions

- What are the key physical features of the United States of America?
- What is erosion?
- What is the Grand Canyon?
- Where is the Grand Canyon?
- How was the Grand Canyon formed?
- How did erosion shape the Grand Canyon?

Subject content areas

- Locational knowledge: Interpreting time lapse videos to recognise key features of the landscape in the USA
- Place knowledge: Understand the different features across the USA, and the differences across the country (and to the UK)
- Physical geography: Describe and understand the location and formation of key physical features of the landscape in the USA including the Grand Canyon.
- Geographical skills and fieldwork: Interpreting a map of the Grand Canyon.

Downloads

- Lesson Plan PDF | MSWORD
- Canyons, Valleys and Plains (PPT)
- Factsheet for teachers PDF | MSWORD
- A to Z Answer Sheet for Teachers PDF | MSWORD
- A to Z Worksheet PDF | MSWORD
- Grand Canyon demonstration sheet PDF | MSWORD

Additional Resources

- Print map of Grand Canyon
- A rock (selection of rocks if possible)
- Sand/soil
- Plastic container
- Water Bottle

- Water
- Scissors and ruler

Starter

To start, open lesson PowerPoint *Canyons, valleys and plains* (see downloadable resources) and begin the lesson by giving pupils the *A-Z of the USA Worksheet* (see downloadable resources) and explain that they are going to watch a time lapse video of different landscapes in the USA. When watching the video pupils need to try and write down words to fill each of the letters with things they see in the video.

Go to Vimeo website <https://vimeo.com/63186969>

Ask the pupils how many letters they managed to fill. What other words could be used to describe physical landscapes seen in the video? There are suggestions on the *A-Z Answer Sheet for Teachers* (see downloadable resources). Ensure that key terms mentioned are explained.

Main

Task one: Before providing an explanation, show pupils images of the Grand Canyon included on the PowerPoint *Canyons, valleys and plains* (see downloadable resources). Ask pupils to discuss in groups and write down ideas of how this might be formed. There is detailed information on process of formation in the *Factsheet for Teachers* (see downloadable resources). Discuss these as a class.

Task two: Watch this video to explore how the Grand Canyon formed. Go to the YouTube website <https://www.youtube.com/watch?v=ktf73HNZZGY>

or go to PBS Learning website

<http://www.pbslearningmedia.org/resource/ess05.sci.ess.earthsys.canyon/the-grand-canyon-how-it-formed/>

- What different features of the canyon are mentioned?
- How would you describe the Grand Canyon?

Task Three: Download a panoramic map of the Grand Canyon. Go to NPS website http://www.nps.gov/grca/planyourvisit/upload/grca_pano.pdf

Ask pupils to examine further photographs of the Grand Canyon in the PowerPoint *Canyons, valleys and plains* (see downloadable resources) and explore the features of the Grand Canyon

- What words would they use to describe what they can see?

- How many layers can they see?
- How many different colours can they see?
- Why do they think the layers look different from each other?

For an additional resource, see this simulation travelling along the Grand Canyon from the Live Science website <http://www.livescience.com/27489-grand-canyon.html>

Task four. Ask pupils to think about and write down what they think the word erosion means. Discuss ideas and explain, using the PowerPoint slide 11 *Canyons, valleys and plains* (see downloadable resources) to explore processes of river erosion.

Watch this video for an explanation. Go to YouTube website <https://www.youtube.com/watch?v=hAaHwU3vhIE>

To visualise the impact of erosion you could show pupils a rock and ask them to think about how it might have changed due to erosion. This activity could be expanded if you have a selection of rocks of different sizes.

Show pupils pictures of the Grand Canyon that feature the Colorado River. Explain that over several million years, this river eroded the rock layers and made it possible to see them. Once the river flowed at the top layer but now flows at the bottom.

Plenary

Follow the *Grand Canyon demonstration sheet* (see downloadable resources) and use the suggested additional resources to show pupils the effects of erosion using water/soil to build your own 'mini' canyon.

As a group discussion, ask pupils to think about places and interesting areas they have visited that have also been made, or affected by erosion. Document these answers on the whiteboard. What can be the impact of erosion on physical environments?