



LESSON 6: COASTAL FLOODING AND EROSION

Aim

- To understand how our coastline is changing and how this affects the risk of flooding (coastal flooding and erosion).

Lesson Objectives

- To understand what a coast is and that the shape is constantly changing.
- To understand how a coastline changes.
- To understand the impacts of a changing coastline and how this can affect flood risk.
- To understand how climate change and rising sea levels can cause an increase in coastal flooding and erosion.

Assumed Prior Knowledge

- The water cycle.
- Know how to define a coast/beach.
- Able to name some coastal areas.
- What coastlines and beaches are used for.
- How climate change can affect sea levels.
- The coast changes shape.
- That both natural and man-made processes have an effect on coastlines.

Resources

- A video showing wave action/erosion - <https://www.bbc.co.uk/programmes/p00xr65v>
- Video explaining coastal erosion - <https://www.bbc.co.uk/bitesize/clips/z7fr87h>
- 'Fill in the blanks' class exercise.
- Word search class exercise.
- The Changing Coastline resource.
- Images showing a coastline regressing over time.
- Coastal Erosion and Flooding resource.
- Video about whether to protect properties at the coast: <https://www.youtube.com/watch?v=F7xNJiU3ZgE>
- Homework sheet - a map displayed on a whiteboard and pupils will be asked to label whereabouts the coastal locations are.

Assessment

- Labelling the coastal features as a class.
- In-class word search exercise.
- Homework: Labelling the coastal locations on the map worksheet.



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Lesson Outcomes

- To name the different types of coastline, e.g. rocky.
- To understand that waves erode the coastline and change its shape.
- Name at least three coastal features, e.g. arch, bay.
- To know what climate change is, name three of the potential effects and explain why flood risk may increase.
- To name three things that may cause coastal flooding.
- To know that our coastlines are eroding quicker and moving inland.
- To name three examples of coastal management.
- To be able to name a UK coastal town.

Differentiation

- Visual – Watching videos.
- Audio – Class discussion.

Skills For Life

- Group work.
- Learning that there are different types of coastline.
- Learning about climate change.
- Learning about coastal management and causes of coastal flooding.

Curriculum Links

- Science.
- Geography.
- English – Reading out to the class.

The blank worksheet for this lesson can be found as a separate download within the lesson 6 page of the Flood Hub KS2 learning section. The answers for the worksheets can be found at the end of this document.

Key words within the PowerPoint lesson are highlighted in orange and the definitions of these words can be found in the glossary, which is available to download off the homepage.



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Slide 1 – The changing coastline

- Slide containing the lesson aims and objectives.

Slide 2 – What is a coastline?

- This slide should be read to class and should form a class discussion.
- The coastline describes a point where the land meets the sea or a place near to it.
- Ask the class if they know any other names for a coastline and to raise their hand if they do.

Slide 3 – Types of coastline (sandy beaches)

- Run through the slide with the class.
- This slide introduces coastal erosion.
- It explains to the pupils that the coastline is changing all the time due to the constant movement of the water which wears away the beach by carrying the sand and pebbles away.
- It's important for pupils to understand that not all of the coast is made up of beaches.

Slide 4 – Types of coastline (rocky cliffs)

- This slide shows the first example of what some coastlines can look like.
- Cliffs made from rock may be very hard but can still wear away over a long period of time.

Slide 5 – Types of coastline (soft soils and clay)

- Run through the slide with the class.
- Some coastal areas made from softer material such as clay and soil can wear away very quickly.

Slide 6 – Coastal features

- The coast changes in different ways depending on the kind of material it is made of, therefore, not all the coast looks the same.
- Coastal erosion causes different features to appear and these are given different names, e.g bay, headland, arch etc...
- Slide 8 is a recap and there is the opportunity for the class to complete a “fill in the blanks” exercise with the diagram on this slide. This can be completed as a class.
- The link at the bottom of the slide is a video which can be watched by the class.

Slide 7 – The changing coastline: recap

- Recap slide to go through what we have learned already.

Slide 8 – Fill in the blanks

- Classroom task filling in the boxes from slide 6.
- Click to reveal the answers on the slide.



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Slides 9 and 10 – Wordsearch

- Classroom exercise - coastal erosion wordsearch.
- This is completed as a class.
- Click to next slide to show the answers.

Slide 11 – Is coastal erosion a problem for everyone?

- Why would land disappearing near where you live be a problem? Ask the pupils to raise their hands and make suggestions.
- Explain that it depends where you live as to whether coastal erosion would be a problem.
- Holderness is marked out on map as an area that suffers from coastal erosion.
- Show the class the short video clip on the link at the bottom of the slide.

Slide 12 – Climate change, coastal erosion and flooding

- Ask the pupils whether they have heard of climate change and quickly discuss what it is.
- Run through the slide with the class.
- Explain that human actions of burning things like coal or petrol to power machines and make things has caused the planet to heat by releasing pollution into the air (pupils may or may not have covered this subject – consider lesson 2 and the industrial revolution).
- This is changing the weather and heating up the planet. Lots of the ice on the planet is melting and oceans are warming up, both these things are causing the sea to rise.

Slide 13 – Climate change, coastal erosion and flooding

- Run through the slide and hand out a copy of the 'Coastal Erosion and Flooding' resource.
- **Optional:** Ask the pupils to stick this in their workbooks.
- As a reading exercise, pupils could volunteer to read out a paragraph.

Slides 14 to 18 – Coastal management

- These slides show examples of coastal management.
- This could also be a reading exercise where pupils read the slide and the teacher decides if it's copied down.

Slide 19 – Sometimes we can't do anything!

- Explain that sometimes, there is nothing anybody can do to stop coastal erosion.
- A short film showing a protected area and explaining that not all of the coast can be protected.

Slide 20 – Homework: Where is erosion happening the fastest?

- Complete the worksheet by researching where the locations are, either online or in a book.
- Pupils must mark the towns on the map.
- Pupils should also research a news article about one of the locations on the map and explain how coastal erosion has changed the area. They should bring this into school with the completed worksheet.



HOMEWORK: WHERE IS EROSION HAPPENING THE FASTEST?

Below is a list of places in Dorset where erosion is happening quickly.

Can you put the place names in the right place on the map? Have you visited these places?

Research a news article about one of the locations on the map. How has coastal erosion changed the area?



1 West Bay

2 Burton Bradstock

3 Durdle Door

4 Durlston Cliffs, Swanage

5 Swanage North Cliffs

6 Studland