

Unit 23 Investigating coasts

ABOUT THE UNIT

This 'long' unit explores the possibilities for teaching about coastal environments at local and regional scales. Within the 'water and its effects on landscapes and people' theme in the programme of study, schools may choose to study rivers or coasts. This unit is designed for those schools that decide to investigate coasts rather than rivers. It can therefore be used as an alternative to Unit 14 'Investigating rivers'.

The unit offers links to ICT, literacy, personal, social and health education (PSHE) and citizenship.

Geographical enquiry and skills

ask geographical questions
collect and record evidence
analyse evidence and draw conclusions
understand different viewpoints
communicate in different ways
use geographical vocabulary
use fieldwork techniques and instruments
use maps
use secondary sources
use ICT
decision making

Knowledge and understanding of places

locate places
investigate change in places

Knowledge and understanding of patterns and processes

recognise and explain patterns
recognise physical and human processes

Knowledge and understanding of environmental change and sustainable development

people, environments and the future
managing environments sustainably

VOCABULARY

In this unit, children are likely to use:

- coast, erosion, transportation, deposition, waves, tide, rock, headland, cliff, cave, arch, stack, bay, beach, shingle, sand, groynes, sea walls

They may also use:

- slope failure, cliff retreat, spit, longshore drift, erosion landforms, depositional landforms

RESOURCES

- UK/Europe/world maps and atlases
- Ordnance Survey maps (coastal regions)
- photographs of headland features
- relevant news cuttings
- access to the internet
- relevant non-fiction texts
- a range of photographs of different beaches
- holiday brochures
- compasses
- photographs of unspoilt coastal environments

LEARNING OBJECTIVES

POSSIBLE TEACHING ACTIVITIES

CHILDREN SHOULD LEARN

What is a coast? Which coastal areas have we visited?

- to use appropriate geographical vocabulary
 - to use maps
 - the location of places and environments
 - about the physical features of coasts and the processes of erosion and deposition that affect them
- Ask the children to say what they think a 'coast' is, ie a zone where land and sea meet.
 - Using a map of the UK, ask the children to find any coastal areas that they have visited.
 - Introduce the idea that coastal environments are very varied and in a constant state of change: that some parts of the coast are being worn away (erosion landforms) and that some parts are being built up (depositional landforms).

How do waves shape coastal environments? How does human activity affect coastal environments?

- to collect and record evidence
 - to communicate in ways appropriate to the task and audience
 - to use appropriate geographical vocabulary
 - to use maps and atlases
 - to use secondary sources of information
 - to use ICT
 - about the physical features of coasts and the processes of erosion that affect them
 - about an environmental issue
- Introduce the idea that waves can erode rock and cliffs; discuss the significance of rock type – hard rock tending to form headlands and soft rock tending to be eroded to form openings in the coastline (bays).
 - Ask the children to use Ordnance Survey maps of coastal areas or a map of the UK in an atlas to identify these features.
 - Ask the children to study photographs of headland features and identify caves, arches and stacks. Ask the children to complete diagrams of these features and to explain what they think has happened in terms of erosion.
 - Introduce the idea that human activity can also cause erosion of the coastline. Discuss with the children how building on a cliff can increase the likelihood of cliff instability and slope failure (*eg Holbeck Hotel in Scarborough which collapsed into the sea in June 1993*).
 - Ask the children to produce a newspaper report, using ICT, based on the Holbeck Hotel or a similar incident, using information and sources from non-fiction books, atlases, newspapers and the internet.

What is a beach? Where are sand and shingle beaches located?

- to use appropriate geographical vocabulary
 - to use maps
 - to use secondary sources of information
 - the location of the places and environments they study
 - about the physical features of coasts and the processes of deposition that affect them
- Introduce the idea that beaches are the most common depositional landform (where material has been transported from elsewhere on the coastline and deposited to form a beach).
 - Using symbols and the key, ask the children to identify on an Ordnance Survey map two main types of beach – sand and shingle.
 - Ask the children to bring in photographs of beaches visited in the UK/Europe/rest of the world. Using these and a range of other photographs, ask the children to identify sand and shingle beaches and the main differences in terms of their physical and human features (*eg shingle usually narrower and steeper, and less likely to attract holidaymakers*).
 - With the children's help, produce a display locating photographs on wall maps of UK/Europe/rest of the world – this could be an ongoing display throughout the year, with photographs added as children and staff visit different areas of coast.

Which area of the coastline should we visit? What is it like there? How will we get there and how long will it take?

- to ask geographical questions
 - to collect and record evidence
 - to communicate in ways appropriate to the task and audience
 - to use appropriate geographical vocabulary
 - to use maps
 - to use secondary sources of information
 - the location of the places and environments they study
 - about the physical features of coasts and the processes of erosion and deposition that affect them
- Divide the children into four groups, each being allocated one of the following themes: bird-watching holidays; walking holidays; beach holidays; rock-climbing holidays.
 - Explain to the children that each group will be contributing a section to a holiday brochure that aims to outline a range of possible coastal destinations for tourists.
 - Ask the children to research and investigate coastal environments around the UK which are relevant to their brief – encourage them to use Ordnance Survey maps, atlases, non-fiction books, internet, travel and holiday information.
 - Ask each group to recommend a possible destination and to produce an itinerary – encourage children to use symbols and grid references to identify features and locations, and the map scale to calculate distance and journey times.

LEARNING OUTCOMES

POINTS TO NOTE

CHILDREN

- identify coastal areas using a map

If children have studied rivers, links could be made here – processes of erosion and deposition, and rivers as part of the coastal environment.

- identify coastal features using maps, atlases and photographs
- have some understanding of headland features and stages of erosion
- understand the impact humans may have on coastal environments

Literacy: writing a newspaper report allows children to use different forms of writing.

ICT: producing a newspaper report provides children with opportunities to use word processing and desktop publishing.

- identify different types of beaches using symbols and keys on Ordnance Survey maps
- know about differences between different types of beaches, using appropriate geographical vocabulary

- use maps and secondary sources to research and describe an area of coast suitable for a particular type of holiday

PSHE and citizenship: these activities provide opportunities for children to understand the consequences of anti-social behaviour in the context of tourism and protected environments.

ICT: the investigation provides opportunities to access information from the internet.

LEARNING OBJECTIVES

POSSIBLE TEACHING ACTIVITIES

CHILDREN SHOULD LEARN

What are the main land uses on this section of the coastline? Why? What are the main features of this section of coast? What processes are affecting it?

- to ask geographical questions
- to collect and record evidence
- to use appropriate geographical vocabulary
- to use appropriate fieldwork techniques
- to use maps
- to draw plans
- about the physical features of coasts and the processes of erosion and deposition that affect them

Coastal features and environments will vary depending on geographical location – some generic fieldwork strategies are outlined below:

- Using large-scale Ordnance Survey maps, ask children to identify the main features and land uses of the section of coastline to be visited.
- Ask the children to produce field sketches (the teacher may produce a sketch outline as a starting point), noting salient features.
- Ask the children to follow a trail (following a route on a map and using a compass) with listed coastal features to be identified and photographed and related questions to be answered. Children should be encouraged to list their own questions during fieldwork.
- On return to school, ask the children to research further features and processes observed, using their own questions as a basis.

Why do we need to manage the coastline?

- about the physical features of coasts and the processes of erosion and deposition that affect them
- how people can improve or damage the environment
- how decisions about places and environments affect the future quality of people's lives
- how and why people may seek to manage environments sustainably

- Discuss with the class different strategies for coastal management (*eg cliff-face armouring, groynes, artificial harbours, sea walls, doing nothing*) and the advantages and disadvantages of such strategies (*eg prevent rock falls and cliff retreat*).
- Help the children to make links with incidents discussed earlier (*eg Holbeck Hotel in Scarborough/ 'lost villages'*).

What is this section of coast like? How will the proposed development affect the environment and different people here? Who decides what happens to coastlines?

- that people, including themselves, hold different views about geographical issues
- to communicate in ways appropriate to the task and audience
- to use appropriate geographical vocabulary
- to use secondary sources of information
- decision-making skills
- that people, places and environments are interdependent
- about the physical features of coasts and the processes of erosion and deposition that affect them
- about an environmental issue
- how people can improve or damage the environment
- how decisions about places and environments affect the future quality of people's lives
- how and why people may seek to manage environments sustainably

- Ask the children to study a photograph of an unspoilt coastal environment and to discuss who might use it.
- Divide the children into five groups each assuming one of the following roles: local resident; local sea angler; local government official; travel company representative; holidaymaker.
- Ask the children to discuss, in their small groups, who they are, what job they do, and how they might use the area of land shown in the photograph.
- Ask each group to imagine that a hotel is going to be built by the travel company and to list three statements which express their views (in role) about this proposed development.
- Ask the children to form five new groups, each comprising representatives from the original groupings, and to discuss their statements and to consider whether their view has changed.
- Ask the children to return to their original groups and to elect a spokesperson.
- Organise a mock public enquiry and allow each of the five representatives to speak for two minutes.
- Ask the children to vote 'for' or 'against' the hotel and discuss the idea of 'rated' votes: that the local government and travel company groups' votes, for example, are rated at two compared to the votes of the local residents, sea anglers and holidaymakers (rated at one).
- Discuss with the children whether this is fair and ask children whether some groups in this decision-making process have more power than others and why this should be so.

LEARNING OUTCOMES

POINTS TO NOTE

CHILDREN

- identify land uses
- produce a field sketch
- follow a trail using a map and compass
- ask and research their own questions

ICT: these activities provide opportunities to use a digital camera to photograph coastal features.

- identify and explain different strategies for coastal management
- understand how decisions about coastal management affect the future quality of people's lives

- identify different viewpoints about the proposed building of the hotel
- explain why people hold different views about the proposal
- understand how changing land uses will affect the environment and people in different ways, now and in the future
- begin to appreciate how a coastal environment may be managed sustainably

PSHE and citizenship: these activities involve children learning about topical issues, and how to discuss, debate and vote.

Literacy: these activities give children experience of using the persuasive genre of speaking.

SAFETY – All off-site visits must be carried out in accordance with LEA and school guidelines.

PRIOR LEARNING

It is helpful if the children have:

- investigated water in the school grounds
- been introduced to the water cycle
- undertaken fieldwork
- used globes, maps and atlases

EXPECTATIONS

at the end of this unit

most children will:

describe the main features of coastal environments;
 identify the locations of different coastal environments and draw out similarities and differences;
 begin to recognise the processes of erosion and deposition in coastal environments and begin to understand how these processes shape and change the coastline;
 identify and explain the different views held by people about environmental change;
 recognise how people can improve or damage the environment;
 suggest geographical questions for study;
 use a wide range of skills of geographical enquiry

some children will not have made so much progress and will:

begin to understand that waves and human activity affect coastal environments;
 respond to geographical questions which have been framed by the teacher

some children will have progressed further and will also:

recognise and explain the processes and features evident within a range of coastal environments;
 recognise how places and environments may be managed sustainably

FUTURE LEARNING

Children may build on their work in this unit by investigating water in mountain environments, see Unit 15. They may also encounter ideas about water management and water-related events, *eg floods or droughts*, through the news, see Unit 16.

This unit also provides a foundation for further study of coasts in geography at key stage 3, where the work focuses more on coastal processes.