3 River flooding

Floods in the UK, 2012

About this spread
The flooding that hit York in 2012 is used as a case study on this spread. This follows on naturally from the spread on causes of river flooding on pages 36 and 37. It allows the pupils to relate the general causes and effects of river flooding to a real-world example. The pupils will be shown that the flooding in York was the result of both physical and human geographical factors, many of which took place well away from the actual city of York.

Learning objectives
On this spread pupils should learn:
● how to extract information from a written text with illustrations
● there were many factors responsible for the flooding in York
● there were many effects of the flooding.

Learning outcomes
By the end of the spread pupils should be able to:
● explain that physical and human factors, often far away from the city, were responsible for the flooding in York
● describe the long-term and short-term effects of the flooding in York
● relate generic factors causing flooding to a real-world example.

Skills builder
The case study gives the opportunity for pupils to extract information from a written source. This can be done by colour coding the text in order to classify the information into causes and effects. Lower-ability pupils could be given a partly completed table with the headings provided and at least one example of each already filled in. The photographs should be used to develop pupils' skills in description by getting them to use terminology such as foreground and background when identifying features. The descriptions should be related to information extracted from the text.

Further discussion suggestions
● Are there any similarities in the flooding in York with a flooding event which has taken place more recently or locally to the school? (You could use the extreme weather video from Kerboodle to support this question.)
● Do you think that people should be allowed to build where they like?
● Is flooding becoming more common in the UK?

Answers to activities
1 a September 2012
   b River Ouse
   c Rivers Nidd, Swale and Wharfe
   d York, Barby and Selby
   e Pennines and the North York Moors
2 Natural causes:
   ● A month’s amount of rain fell in 24 hours.
   ● Rivers burst their banks and flooded surrounding areas.
   ● The ground became full of water and could take no more.

Human causes:
   ● Ploughing of fields allows water to drain quickly into rivers.
   ● Housing estates built on flood plains put more homes at risk.
   ● Cutting down trees on valley slopes causes more rain to reach rivers.

3 Pupils’ responses may vary, but should be along the following lines.
   The river Ouse was at its highest level for 387 years and reached a record high of 6.2 metres above its usual level.

4 Pupils’ responses may vary, but should be along the following lines.
   Over a thousand properties were flooded and hundreds of people had to leave their homes. Many lost all their belongings and when the floods went down, the houses were left with everything covered in a thick layer of foul-smelling mud. There will be a big rise in insurance premiums and many people may not be able to get their homes insured again. Many roads were blocked and people could not get to work from the villages outside the city.

A The river has burst its banks and covered the road and pavements running along the bank. The water has flooded the nearby pub, the King’s Arms. The water appears to be about a metre deep as it has come to the top of the bollard along the pavement and halfway up a road sign. In the background, where the land is slightly higher, sandbags have been placed and cars have been parked to keep them out of the flood waters.

B A woman is filling sandbags that have been placed alongside the railings to try and prevent water from the river getting into the buildings. This does not seem to have been totally successful as large pumps are being used to put water back into the river. A hose pipe is being used to drain the houses, which also suggests that they have been flooded.
# 3 River flooding

## How does the UK cope with floods?

### About this spread

Serious flooding seems to be happening more often in the UK. This spread tells pupils about the role of the Environment Agency in relation to flooding. It is their job to monitor rainfall, river levels and sea conditions and to issue warnings when flooding is likely.

### Learning objectives

On this spread pupils should learn:

- about the role of the Environment Agency in predicting flooding
- about the warnings and advice provided by the Environment Agency.

### Learning outcomes

By the end of this spread pupils should be able to:

- describe how the Environment Agency reduces the risk, and limits the effects, of flooding
- understand that rich countries like the UK can afford schemes to reduce the effects of flooding

### Key vocabulary

- Environment Agency

### Skills builder

Pupils need to be able to research information for themselves by using the internet, but they should have guidance in doing so. When asking them to research information, provide them with the websites they need to use. This will save time searching for the information and allow them to focus their search. Activity 4 in the pupil book asks pupils to search for information on the Environment Agency website.

### Further discussion suggestions

- What would you include in your own personal flood plan?
- Should new houses in areas at risk from flooding be built on stilts?
- How can a reservoir and its dam be used to control a river’s flow?

### Answers to activities

1. **a** The Environment Agency can help to reduce the risk of flooding by identifying areas at risk from rivers or the sea, and those areas where flooding would cause most damage. This can be done by recommending building flood defences, monitoring rainfall, river levels and sea conditions to see if flooding is likely.

   **b** The Environment Agency can help to limit the worst effects of flooding by issuing warnings and home visits (for those in most danger) when floods are expected; alerting the emergency services to provide help for those most in need; providing advice on what to do before, during and after a flood.

2. The Severe Flood Warning would have been issued as there was danger to life and property (evidenced by the fact that the emergency services had to rescue people trapped in buildings and on rooftops; over a thousand homes and businesses were flooded and hundreds of people were forced to leave their homes).

3. **Family Flood Plan:** pupils’ responses may vary, but should be along the following lines.
   - Know how to contact each other in case family members become separated/can’t get home/their home is flooded.
   - Put together an emergency flood kit to keep the family warm, safe and fed during the flood.
   - Know how to turn off power supplies. It is dangerous to use electricity and gas when a house is flooded.
   - Put emergency numbers in a safe place so they are easy to find during an emergency.
   - Understand the flood warning system so they know how imminent, and how severe, flooding is likely to be. Listen to the local radio programme for current local information on the flood situation.

4. **a and b**
   - Pupils’ responses will vary. They should use information on this page as well as information from the Environment Agency website.