

Are you flood ready?

Lesson 1: “I get knocked down, but I get up again” (approximately 40 minutes)

Key concepts	Range and content	Key question and ideas	Teaching and learning activities	Resources
<p>Place – <i>geographical imaginations.</i></p> <p>Environmental interaction – <i>understanding that the physical and human dimensions of the environment are interrelated and together influence environmental change.</i></p> <p>Scale – <i>appreciating different scales and making links between them.</i></p> <p>Sustainable development – <i>exploring sustainable development and its impact on environmental interaction.</i></p> <p>Physical processes – <i>explaining how physical processes shape places, landscapes and societies.</i></p>	<p>Study of the UK, its changing geography and current issues.</p> <p>A variety of scales.</p> <p>Study of themes, issues and problems.</p> <p>Investigation of human-environment interactions.</p> <p>Study of physical processes</p>	<p>Pupils should learn:</p> <ul style="list-style-type: none"> How the government wants us to learn about and tackle flood risk by building up our personal resilience. That no matter how well we prepare, nature can always surprise us. <p>Learning outcomes:</p> <ul style="list-style-type: none"> Identify how flood risk requires us to think about our own <u>personal environmental interaction</u>, learning about and preparing for flooding. Learn about the <u>scale</u> of flood hazards in the UK and recognise that some events are more difficult to prepare for than others. Recognise that household insurance is vital if we want to ensure that we all have a <u>sustainable</u> future as individuals. 	<p>STARTER: <i>I get knocked down, but I get up again</i> Show the opening PowerPoint presentation which highlights that it is possible to be ‘resilient’ and to overcome the threat of flooding. The film clip of RGS-IBG president Sir Gordon Conway can also be played.</p> <p>MAIN ACTIVITY: <i>Be aware, be prepared, take action!</i> Students undertake a card sorting activity to develop an understanding of the importance of being aware, being prepared and taking action.</p> <p><i>Expect the unexpected</i> Discuss the causes and impacts of ‘unexpected events’. Students investigate this through the case study of the Boscastle flooding in 2004 and can study extracts of a fictional account of what might happen if the Thames Barrier were to fail (link provided).</p> <p>PLENARY: <i>It’ll never happen to me...</i> Students consider the probability of various things happening to them, including flooding. The case for being insured is overwhelming!</p>	<p>Downloads: Resilience (“I get knocked down...”) presentation (PPT) “Be aware, be prepared” card sorting activity (Word) “It’ll never happen to me...” presentation (PPT) Boscastle case study (Word)</p> <p>Video: Sir Gordon Conway video clip discussing ‘resilience’. Boscastle floods</p> <p>Links: Environment Agency action guidelines BBC materials London floods (fiction) Learn more about resilience 1 Learn more about resilience 2</p>
Key processes	Curriculum opportunities			Assessment opportunities
<p>Geographical enquiry – <i>ask geographical questions, think critically, constructively and creatively.</i></p> <p>Geographical communication – <i>communicate knowledge and understanding using geographical vocabulary and conventions in both talk and writing.</i></p>	<p><i>Use a range of enquiry approaches.</i></p> <p><i>Investigate important issues of relevance to the UK and globally.</i></p> <p><i>Examine geographical issues in the news.</i></p>			Notes
				<p>Gifted and talented geographers might be interested to learn more about return periods and probability – recognizing that there are different levels of risk according to how frequently certain flood heights are reached.</p>

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Lesson 2: What are the causes of flooded homes? (approximately 40 minutes)

Key concepts	Range and content	Key question and ideas	Teaching and learning activities	Resources
<p>Physical processes – explaining how physical processes shape places, landscapes and societies.</p> <p>Human processes – understanding how sequences of events and activities in the human world lead to change in places and societies.</p> <p>Environmental interaction – understanding that the physical and human dimensions of the environment are interrelated and together influence environmental change.</p> <p>Scale – appreciating different scales and making links between them.</p> <p>Place – geographical imaginations.</p>	<p>Variety of scales (personal, local, national, international)</p> <p>Study of the UK, its changing geography and current issues.</p> <p>Consideration of different parts of the world, including countries in different stages of development.</p> <p>Study of human and physical processes.</p> <p>Investigation of people-environment interactions at different scales and in different parts of the world.</p> <p>Studies based on a place or region.</p>	<p>Pupils should learn that:</p> <ul style="list-style-type: none"> • People face a variety of flood risks from a number of different causes. • No home is entirely free from flood risk due to human causes of flooding. • Tsunamis can cause devastating flooding in some countries but occur only rarely. <p>Learning outcomes:</p> <ul style="list-style-type: none"> • Pupils learn about the <u>physical and human processes</u> that have left around 5 million people in the UK at risk of natural flooding and leave everyone with a risk of human-caused flooding (plumbing). • Pupils develop their <u>geographical imaginations</u> and sense of <u>scale</u> further by thinking about the flooding caused by the 2004 tsunami. 	<p>STARTER: <i>What does risk mean?</i> Students discuss what is meant by the term 'risk' and use the interactive graphic (and accompanying PowerPoint) to discover how a risk develops.</p> <p>MAIN ACTIVITY: <i>The four causes of flooding</i> Students use the interactive resource (and accompanying Word document) to differentiate between the four causes of flooding in UK homes.</p> <p><i>Tsunami</i> Students read through the 2004 tsunami case study as an example of an extreme flooding event.</p> <p>PLENARY: <i>Extreme events</i> Draw attention to the fact that on very rare occasions, very extreme events can always take place. Can we always prepare for everything that might happen? The extreme weather fact sheet looks at some weather records in the UK and elsewhere.</p>	<p>Interactives: Graphic illustrating Risk Graphic illustrating the four causes of flooding for UK homes.</p> <p>Downloads: Risk presentation (PPT) Types of flooding (Word) Boxing Day tsunami case study (Word) Extreme weather fact sheet (Word)</p> <p>Video: Archived BBC tsunami footage</p> <p>Links: Extra information – flooding Extra information – coasts</p>
Key processes	Curriculum opportunities			Assessment opportunities
<p>Geographical enquiry – analyse and evaluate evidence.</p> <p>Geographical communication – communicate knowledge and understanding using geographical vocabulary and conventions in both talk and writing.</p>	<p><i>Use varied resources including visual media.</i></p> <p><i>Examine geographical issues in the news.</i></p> <p><i>Investigate important issues of relevance to the UK and globally.</i></p>			Notes
				<p>Gifted and talented geographers might want to be able to think of other human causes of flooding – or may know of other unusual natural causes.</p>

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Lesson 3: What kinds of flood risk do we face in our own school and homes? (approximately 40 minutes)

Key concepts	Range and content	Key questions and ideas	Teaching and learning activities	Resources
<p>Place – <i>geographical imaginations.</i></p> <p>Scale – <i>appreciating different scales and making links between them.</i></p> <p>Environmental interaction – <i>understanding that the physical and human dimensions of the environment are interrelated and together influence environmental change.</i></p> <p>Cultural understanding and diversity – <i>appreciating how values and attitudes differ and may influence social, environmental, economic and political issues and may be different to our own.</i></p>	<p>Variety of scales (personal, local, national)</p> <p>Study of the UK, its changing geography and current issues.</p> <p>Study of physical and human processes.</p> <p>Study of themes, issues and problems.</p> <p>Investigation of human-environment interactions.</p>	<p>Pupils should learn that:</p> <ul style="list-style-type: none"> All buildings face some kind of flood risk, including their current school and homes. Small amounts of water can do a lot of damage to the fixtures and fittings of a typical home or school. <p>Learning objectives:</p> <ul style="list-style-type: none"> Pupils recognise that the <u>places</u> where they live and work are always at risk of water damage (even when not near a river or coastline). Pupils identify how these places may be affected by different <u>scales</u> of flood event. Pupils develop a <u>cultural understanding</u> that not everything can be replaced after a flood, even when there is insurance money available – people’s values and attitudes may mean that they become very attached to some items (e.g. photos) beyond monetary worth. 	<p>STARTER: <i>What’s our risk?</i> After a reminder of what risk is (see lesson 2), students identify possible areas of flood risk in their own school.</p> <p>MAIN ACTIVITY: <i>What damage would water do to our school or homes?</i> Students watch a video clip to show the impact of flooding and carry out a risk assessment of their home or school.</p> <p>PLENARY: <i>Irreplaceable items</i> Students consider which items would be impossible to replace, even with insurance money, in the event of a flood.</p>	<p>Downloads: Risk presentation (PPT) (repeat from lesson 2) Flood risk assessment for variable water heights (Word) Irreplaceable items presentation (PPT)</p> <p>Video: Norwich Union website – video clips show the impact of varying depths of flood water.</p> <p>Links: Environment Agency Flood Map service</p>
Key processes	Curriculum opportunities			Assessment opportunities
<p>Geographical enquiry – <i>find new ways of using and applying geographical skills and understanding to create new interpretations of place and space.</i></p> <p>Geographical enquiry – <i>solve problems and make decisions to develop analytical skills and creative thinking about geographical issues.</i></p>	<p><i>Participate in informed, responsible action in relation to geographical issues that affect them and those around them.</i></p> <p><i>Investigate important issues of relevance to the UK and globally.</i></p> <p><i>Use varied resources, including maps and visual media.</i></p>			Notes
				<p>Gifted and talented geographers might want to further explore the idea of cumulative losses with increasing water height. There are many possibilities for representing losses graphically, perhaps using graphs with water height on the y-axis and estimated losses (£) on the x-axis. The Norwich Union website may help to focus thinking.</p>

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Lesson 4: Flood-proof homes (approximately 40 minutes)

Key concepts	Range and content	Key question and ideas	Teaching and learning activities	Resources
<p>Place – <i>geographical imaginations.</i></p> <p>Environmental interaction – <i>understanding that the physical and human dimensions of the environment are interrelated and together influence environmental change.</i></p> <p>Human processes – <i>understanding how sequences of events and activities in the human world lead to change in places and societies.</i></p> <p>Physical processes – <i>explaining how physical processes shape places, landscapes and societies.</i></p>	<p>Variety of scales (personal, local, global)</p> <p>Consideration of different parts of the world including the local area, the UK and regions or countries in different states of development.</p> <p>Study of the UK, its changing geography and current issues.</p> <p>Studies that involve physical and human geography.</p> <p>Investigation of people – environment interactions.</p>	<p>Pupils should learn that:</p> <ul style="list-style-type: none"> A range of adaptive measures are available to help families build up their own levels of flood resilience. The human ability to adapt to risk is something we hold in common with many other peoples living in different places, all of whom are facing their own challenges. <p>Learning outcomes:</p> <ul style="list-style-type: none"> Pupils recognise that <u>places</u> may be made more resilient against flooding using a range of practical measures, many of which don't involve spending money – just planning homes more carefully. 	<p>STARTER: What do we mean by resilience? Begin with a brainstorming exercise to share ideas about resilience and flood-proofing. A PowerPoint supports this discussion.</p> <p>MAIN ACTIVITY: <i>Flood-proofing your home</i> Students recall their learning from the previous lesson and complete the interactive activity to consider the steps that a household should take to become 'flood proof'.</p> <p><i>What makes a good 'flood kit'?</i> Students brainstorm the items that should be included in a 'flood kit' and complete the table provided. A PowerPoint presentation is available to show after the activity.</p> <p>PLENARY: <i>What other kinds of risk do other people in other places face?</i> Who else might benefit from being prepared for risk? Students brainstorm other kinds of natural hazard where homes should have an emergency kit. A PowerPoint is available to support this activity.</p>	<p>Interactives: Flood-proof home interactive activity.</p> <p>Downloads: Resilience presentation (PPT) Flood kit planner (PPT) Flood kit planner table (Word) 'What are the other kinds of natural hazard?' presentation (PPT)</p> <p>Links: More information about flood proofing homes: www.floodresilienthome.com www.abi.org.uk/Display/File/Child/553/Flood_Resilient_Homes.pdf www.ciria.org.uk/flooding/ www.floodforum.org.uk/ Flood kit suggestions</p>
Key processes	Curriculum opportunities	<ul style="list-style-type: none"> Pupils develop their <u>geographical enquiry</u> skills by thinking critically, constructively and creatively about what should be in a flood kit. Pupils develop their <u>geographical imaginations</u> through thinking about other types of <u>environmental interaction</u> that might require people to keep an emergency kit. 		Assessment opportunities
<p>Geographical enquiry – <i>ask geographical questions, think critically, constructively and creatively.</i></p> <p>Geographical communication – <i>communicate knowledge and understanding using geographical vocabulary and conventions in both talk and writing.</i></p>	<p><i>Participate in informed, responsible action in relation to geographical issues.</i></p> <p><i>Investigate important issues of relevance to the UK and globally.</i></p> <p><i>Examine geographical issues in the news.</i></p>			Notes

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Lesson 5: Getting the message across (approximately 40 minutes)

Key concepts	Range and content	Key question and ideas	Teaching and learning activities	Resources
<p>Physical processes – <i>explaining how physical processes shape places, landscapes and societies.</i></p> <p>Space – <i>understanding the interactions between places and the networks created by flows of people.</i></p> <p>Cultural understanding and diversity – <i>appreciating how values and attitudes differ and may influence social, environmental, economic and political issues and may be different to our own</i></p> <p>Environmental interaction – <i>understanding that the physical and human dimensions of the environment are interrelated and together influence environmental change.</i></p>	<p>Study of themes, issues and problems.</p> <p>Study of the UK and its changing geography and current issues.</p> <p>Investigation of people-environment interactions at different scales, highlighting consequences, impacts and planning/management responses.</p> <p>Studies that involve physical and human processes.</p>	<p>Pupils should learn:</p> <ul style="list-style-type: none"> How we can know a flood is coming. How there is a range of media available through which to issue flood warnings, and that varying population characteristics mean that a range of media will always be needed. . That perhaps care needs to be taken by agencies not to issue warnings too frequently, or people may stop listening. <p>Learning outcomes:</p> <ul style="list-style-type: none"> Pupils learn that understanding how <u>physical processes</u> operate helps us to predict when a flood is coming. 	<p>STARTER: <i>He's behind you!</i> Introduce meteorological forecasting, flood prediction and the idea of lead (warning) times through the PowerPoint provided. How do we make sure the public actually receive warnings that flooding is likely to occur?</p> <p>MAIN ACTIVITY: <i>Something old, something new</i> Students complete a card sorting exercise to differentiate between traditional and more 'hi-tech' approaches to flood warning.</p> <p><i>Helping vulnerable groups</i> Students consider which flood warning methods are most suitable to different groups of people within the community. They compare their answers with the fact sheet provided.</p>	<p>Downloads: 'He's behind you!' presentation (PPT) Sending the message card sort (Word) Getting the message – vulnerable groups (Word) Getting the message – flood warnings (PPT)</p> <p>Video: A brief film illustrating 'the boy who cried wolf'</p> <p>Links: Environment Agency leaflet (page 6 shows the choices of warning available)</p>
Key processes	Curriculum opportunities			Assessment opportunities
<p>Geographical enquiry – <i>ask geographical questions, think critically, constructively and creatively.</i></p> <p>Geographical enquiry – <i>solve problems and make decisions to develop analytical skills and creative thinking about geographical issues.</i></p>	<p><i>Examine geographical issues in the news.</i></p> <p><i>Use a range of enquiry approaches.</i></p> <p><i>Participate in informed responsible action in relation to geographical issues.</i></p> <p><i>Investigate important issues of relevance to the UK and globally.</i></p>	<ul style="list-style-type: none"> Pupils investigate how a flood warning is an interaction across <u>space</u> that can take place using a whole range of different information media. Pupils develop their <u>cultural understanding</u> of the <u>diversity</u> of people in Britain by considering how different types of vulnerable people might respond better than others to different types of warning message. 	<p>PLENARY: <i>Crying wolf</i> The lesson ends with a PowerPoint summary ('getting the message') and students think about what lessons can be learnt from Aesop's famous fable. How often should flood warnings be issued if we don't want people to start ignoring them?</p>	<p>Notes</p> <p>Gifted and talented geographers might know something about what happened during Hurricane Katrina (and how some vulnerable groups were affected worst than others by the flooding of New Orleans).</p>

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Lesson 6: The river team players (approximately 40 minutes)

Key concepts	Range and content	Key question and ideas	Teaching and learning activities	Resources
<p>Physical processes – explaining how physical processes shape places, landscapes and societies.</p> <p>Interdependence – exploring the social, economic, environmental and political connections between places.</p> <p>Place – geographical imaginations.</p> <p>Space – understanding the interactions between places and the networks created by flows of people.</p> <p>Human processes – understanding how sequences of events and activities in the human world lead to change in places and societies.</p>	<p>Studies based on a place or region, a theme, an issue or a problem.</p> <p>Study of the UK, its changing geography and current issues.</p> <p>Investigation of people-environment interactions highlighting consequences, impacts and planning/management responses.</p> <p>Studies that involve physical geography, physical processes and natural landscapes.</p> <p>Studies that involve human geography, built and managed environments and human processes.</p>	<p>Pupils should learn:</p> <ul style="list-style-type: none"> How drainage basins and flood plains are home to many different stakeholders (user groups/ players) whose activities may impact upon one another. For effective governance, one agency may need to take a leading role (an approach which has worked very well for the River Mersey), and this is also important for water quality management. <p>Learning outcomes:</p> <ul style="list-style-type: none"> Pupils develop an understanding that different river stakeholder groups are <u>interdependent</u> and that their actions affect one another. Students consider how <u>physical processes</u> can be modified by some players in ways that help or hurt other players. 	<p>STARTER: <i>Who are the river team players?</i> Students should imagine that all of the different groups of people who live near and use a river are like players on the same team. They should work in groups and brainstorm as many suggestions as possible.</p> <p>MAIN ACTIVITY: <i>What can the players do?</i> Students take the players that they identified in the starter activity and design a table or A3 poster showing how the different players may either be making flooding worse for other players or are perhaps improving matters. Issues relating to water quality and wildlife can also be included.</p> <p><i>And who will be the referee?</i> The 'referee' is the person/people who will make sure that all of the players get together, talk and try to overcome problems. Once students have decided who this might be, they can place them at the centre of the poster</p> <p>PLENARY: <i>Unit quiz</i> A quiz revisits the main themes of the unit. Students organise themselves into teams with a water themed name in order to participate in the quiz.</p>	<p>Downloads: Pollution, concrete and tarmac fact sheet (Word) Poster template (Word) – best used enlarged to colour A3 format. Mersey Basin Campaign fact sheet (Word) End of unit quiz (Word)</p> <p>Links: Mersey Basin Campaign website (showing how one agency has become a 'referee') Geography Pages (includes many links to additional water resources) More on the role of gardens vs. tarmac in flooding</p>
				Assessment opportunities
Key processes	Curriculum opportunities			
<p>Geographical enquiry – analyse and evaluate evidence, presenting findings to draw and justify conclusions.</p> <p>Geographical communication – communicate knowledge and understanding using geographical vocabulary and conventions in both talk and writing.</p>	<p><i>Use a range of enquiry approaches.</i></p> <p><i>Examine geographical issues in the news.</i></p> <p><i>Investigate important issues of relevance to the UK and globally.</i></p> <p><i>Participate in informed, responsible action in relation to geographical issues.</i></p>			Notes

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