

Floods

Quiz

Preparation

Read information on these pages:

- ▶ Flood lesson plan @ <https://www.schools.aidr.org.au/media/5593/aidr-flood-lesson-plan.pdf>
- ▶ Planning for disasters @ <https://www.cairns.qld.gov.au/community-environment/natural-disasters/flooding-information/planning-for-disasters>

Ask questions to either work in pairs or individually to answer the questions below. Suggested time: 15 minutes

Conduct a class discussion to share student responses to questions

Quiz questions and answers

Q1: How do floods occur?

A: *Floods occur when water covers land which is normally dry. They are not always caused by heavy rainfall.*

Q2: Are there different types of floods? If so how many, and what is the difference between them?

A: *Slow-onset floods*

Inland rivers in the vast flat areas of Western Australia, central/western New South Wales and Queensland can often flood. These floods may take days to build-up. They can last for one or more weeks and can even last for months on some occasions.

The damage caused by floods in these areas can lead to major losses of livestock, cutting off rural towns and damaging crops, major roads and railways.

Rapid-onset floods

Rapid-onset flooding occurs more quickly than slow-onset floods. These floods can potentially be much more damaging and can pose a greater risk to loss of life and property. This is because there is generally much less time to take preventative action from a faster, more dangerous flow of water. This type of flooding can affect most of our major towns and cities.

Flash floods

Flash flooding results from relatively short, intense bursts of rainfall, often during thunderstorms. It can occur in almost all parts of Australia and poses the greatest threat to life. People are often swept away after entering floodwaters on foot or in vehicles. These floods can also result in significant property damage and major social disruption. They are a serious problem in urban areas where drainage systems are often unable to cope. These are the sorts of floods which occur in the Cairns region.

Q3: What kinds of flood do we experience in Cairns?

A: *Rapid on-set floods and flash floods*

Q4: Is there a difference in how much warning time we have for each of the flood types?

A: *yes, slow onset floods have several days*

Q5: Apart from rainfall, what are the other types of disasters that can cause floods to occur?

A: Flooding can be caused by a range of situations that include:

- ▶ seawater flooding – coastal areas may be flooded when a cyclone or severe storm causes a surge of sea water,
- ▶ tidal flooding – floods that are caused by high tides that coincide with higher than normal river levels,
- ▶ run-off from rivers and dams – flooding can be caused when river systems need to carry more water than usual following a snow-melt or when dams start to overflow,
- ▶ urban drainage – flash flooding is a serious problem in some cities when the drainage systems fail. People can be caught in stormwater drains, trapped in their cars or even swept off the roads by water.

Q6: Find a list of notable floods in Australia from 1970 to 2007. Mark each major flood event on a map of Australia.

Q7: Are there any patterns? If so, what would cause an area to flood more often than others?

A: *Poor drainage, areas of high rainfall, areas subject to high seasonal rainfall events.*

Q8: What would be some effective flood prevention strategies for these areas?

A: *Building flood levies, building above historic flood levels, early warning systems for dam and river flood indicators.*

Q9: What kinds of thing should you do to be prepared for a flood in Cairns?

A: *Keep a well-stocked household emergency kit, create a household emergency response plan.*



Curriculum links

7	Science	CSHE121: Science as a Human Endeavour; Use and influence of science	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity
7	Geography	ACHGK042: Knowledge and Understanding	Causes, impacts and responses to an atmospheric or hydrological hazard
7	Geography	ACHGS053: Geographical Inquiry and Skills; Communicating	Present findings, arguments and ideas in a range of communication forms selected to suit a particular audience and purpose; using geographical terminology and digital technologies as appropriate
7	English	ACELT1619: Literacy; Literature and context	Identify and explore ideas and viewpoints about events, issues and characters represented in texts drawn from different historical, social and cultural contexts
7	Humanities & Social Science	ACHASSK183: Knowledge and Understanding; Geography;	The way that flows of water connect places as they move through the environment and the way these affect places
7	Humanities & Social Science	ACHASSK185: Knowledge and Understanding; Geography	The nature of water scarcity and ways of overcoming it, including studies drawn from Australia and West Asia and/or North Africa
7-8	Health & Physical Education	ACPPS072: Personal, Social and Community Health; Being healthy, safe and active	Practise and apply strategies to seek help for themselves or others
7-8	Health & Physical Education	ACPPS073: Personal, Social and Community Health; Being healthy, safe and active	Investigate and select strategies to promote health, safety and wellbeing
8	Science	ACSHE135: Science as a Human Endeavour; Use and influence of science	Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical
8	Science	ACSHE136: Science as a Human Endeavour; Use and influence of science	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity
8	Geography	ACHGK051: Geographical Knowledge and Understanding Unit 1: Landforms and landscapes	Human causes and effects of landscape degradation
8	Geography	ACHGK053: Knowledge and Causes; Landforms and landscapes	Impacts and responses to a geomorphological hazard
8	English	ACELT1807: Literature; Responding to literature	Recognise and explain differing viewpoints about the world, cultures, individual people and concerns represented in texts
9	Science	ACSHE160: Science as a Human Endeavour; Use and influence of science	People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities
9	Geography	ACHGK063: Knowledge and Understanding; Biomes and food security	Challenges to food production, including land and water degradation, shortage of fresh water, competing land uses, and climate change for Australia and other areas of the world

Classroom activity

Classroom resources provided by Cairns Regional Council



10	Science	ACSHE191: Science as a Human Endeavour; Nature and development of science	Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community
10	Geography	ACHGK070: Geographical Knowledge and Understanding Unit 1: Environmental change and management	Human-induced environmental changes that challenge sustainability
10	Geography	ACHGK073: Geographical Knowledge and Understanding Unit 1: Environmental change and management	The application of systems thinking to understanding the causes and likely consequences of the environmental change being investigated
10	Geography	ACHGK074: Knowledge and Understanding; Environmental change and management	The application of geographical concepts and methods to the management change being investigated
10	Geography	ACHGK075: Knowledge and Understanding; Environmental change and management	The application of environmental, economic and social criteria in evaluating management responses to the change

Flood quiz

- ▶ Read the articles provided
- ▶ Make notes on key points of the articles/information
- ▶ Read the questions below and provide answers in the space provided following completion of the article
- ▶ Participate in the class discussion by sharing and comparing your answers to the questions with your classmates.

Q1: How do floods occur?

Q2: Are there different types of floods? If so how many, and what is the difference between them?

Q3: What type of floods do we experience in Cairns?

Q4: Is there a difference in how much warning time we have for each of the flood types?

Q5: Apart from rainfall, what are the other types of disasters that can cause floods to occur?

Q6: Find a list of notable floods in Australia from 1970 to 2007. Mark each major flood event on your blank outline map of Australia, an on-line map or an atlas.

Q7: Are there any patterns? If so, what would cause an area to flood more often than others?

Q8: What would be some effective flood prevention strategies for these areas?

Q9. What kinds of things should you do to be prepared for a flood in Cairns?
