

Floods

Quiz

Preparation

Print out copies of the following documents for students, or access the pages via the following links: Suggested reading time: 20 minutes

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

- ▶ 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.

Classroom activity

Classroom resources provided by Cairns Regional Council



Curriculum links

11 & 12	Earth & environmental science	ACSES102: Science understanding: The cause and impact of earth hazards	Human activities, including land clearing, can contribute to the frequency, magnitude and intensity of some natural hazards (eg drought, flood, bushfires, landslide) at local and regional scales
	Earth & environmental science	ACSES106: Science understanding: the cause and impact of global climate change	Climate change affects the biosphere, atmosphere, geosphere and hydrosphere; climate change has been linked to changes in species distribution, crop productivity, sea level, rainfall patterns, surface temperature and extent of ice sheets
	Earth & environmental science	ACSES108: Science understanding: the cause and impact of global climate change	Climate change models (eg general circulation models, models of El Niño El Niña) describe the behaviour and interactions of the oceans and the atmosphere; these models are developed through the analysis of past and current climate data, with the aim of predicting the response of global climate to changes in the contributing components (eg changes in global ice cover and atmospheric composition)

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?
