

Overview

It is suggested that any observations, student work or comments recorded during this lesson be displayed in your classroom, under the heading *'Hidden dangers in floodwater'*, for others to see and learn from.

Outline	Materials	Time	Conclusion
To reinforce the dangers of swimming, walking and playing in floodwater and for students to share this information with other classes within the school.	<ul style="list-style-type: none"> ▪ Pencils/textas ▪ A3 piece of paper for each pair/group ▪ Support material #1: Flood examples ▪ Support material #2: Types of floods ▪ Worksheet #1: Hidden dangers and consequences recording sheet ▪ Support material #4: Fact sheet on injuries and diseases ▪ Support material #5: Being prepared for floods ▪ Support material #6: Emergency kit 	Approx 60 minutes	<p>Students will participate in discussions about the different types of flooding and safety in floodwater</p> <p>Students will work together to create a presentation to consolidate their understanding of the hiddendangers in floodwater.</p>

Introduction:

15 minutes

1. Using images from **Support material #1**, ask students if they know what has happened in each of the pictures and discuss flooding. What is flooding? How does flooding happen? Where does it happen? Students' responses can be recorded on cards or a large sheet of paper and displayed.
2. Conduct a short discussion about the different types of flooding (see **Support material #2** for more information). Ask students to think about what types of flooding could occur near them.
3. Discuss what hazardous items might be in Floodwater. Record students' suggestions on **Worksheet #1**.

4. Discuss the possible consequences of swimming, walking or playing in floodwater and add comments to **Worksheet #1**. Make sure students are aware of how serious injuries and diseases can be (see **Support material #4** for further information).
5. Ask students how all these **hidden dangers** might get into floodwater. Where do they come from? (E.g. peoples yards, rubbish bins, parks, drains, gardens, etc.)
6. Ask students what they think they should do if a flood happens? Incorporate ideas from **Support material #5** and stress the need to always listen to any adults they are with. Look at each item listed in **Support material #6** and discuss why it's there.

Activity

30 minutes

7. Divide students up into pairs or groups of three, explain that they are to create a poster warning people about the dangers of floodwater, which they will present to students in younger classes.

Provide each group with a piece of A3 paper, discuss what information might be included in the poster (e.g. the slogan 'Never swim, walk or play in floodwater. You don't know what you are getting into'), what pictures they might draw, key messages and how best to present their information.

Students are to prepare a short presentation including what they have been learning, why, what they have created and the main messages which they will present to the younger classes. Remind them that they are to inform the younger students, but not to scare them.

Conclusion

15 minutes

8. When students have completed their posters they are to practise their presentation. Each student should then stand up at the front of the class and deliver it. If appropriate, the class can provide feedback to each other on the content/theme of their posters and presentation.

At a convenient time, students should go to the younger classes and deliver their presentation.

9. In conclusion, ask everyone to share one thing they have learnt about floodwater and why they should not swim, walk or play in it.

Flood examples



Riverine flooding

Flood examples



Riverine flooding

Flood examples



Flash flooding

Flood examples



Dam failure



Storm surge

Types of floods



Riverine flooding

In riverine flooding, relatively high water levels overtop the natural or artificial banks of a stream or river. The nature of riverine flooding can vary significantly in terms of cause, timing and depth between different locations. Coastal rivers with short, steep headwaters often have floods that rise and recede quickly. Inland floods with low gradients have floods that move slowly down the river, sometimes lasting for several months.

Types of floods



Flash flooding

Flash flooding occurs when soil absorption, runoff or drainage cannot adequately disperse intense rainfall, and is usually caused by slow moving thunderstorms. Flash floods are generally defined as developing in six hours or less from rainfall to the onset of flooding.

Types of floods



Dam failure

Although dam failures are rare, their effects can be significant. In New South Wales dam safety is monitored by the Dam Safety Committee, and warning arrangements are in place to warn downstream residents of potential dam failure threats. Should dam failure occur, significant downstream flooding can involve potentially swift flowing water and high amounts of debris.

Types of floods



Storm surge

Storm surge occurs when sea levels are elevated above the usual tidal limit due to the action of intense low pressure systems over the open ocean. The low pressure causes sea level to rise as there is less air pressing down on the sea. Combined with gale force onshore winds, this can lead to flooding of low-lying coastal land.

Injuries and diseases

Injury	Disease
<p>Infectious Diseases Cause: Ingestion or exposure to floodwater</p>	<ul style="list-style-type: none"> ▪ E. Coli – Can cause diarrhoea, while others cause urinary tract infections, respiratory illness and pneumonia. ▪ Hepatitis – Can cause malaise, muscle and joint aches, fever, nausea or vomiting, diarrhoea, and headache. ▪ Typhoid – Fever, headache, general discomfort, diarrhoea.
<p>Diarrheal Diseases Cause: Ingestion or exposure to floodwater</p>	<ul style="list-style-type: none"> ▪ Eating or drinking anything contaminated by floodwater can cause diarrheal disease. ▪ Wash hands. ▪ Do not play in floodwater.
<p>Wound Infections Cause: Sharp objects hidden in contaminated floodwater</p>	<ul style="list-style-type: none"> ▪ Open wounds and rashes exposed to floodwater can become infected. ▪ Cover open wounds with a waterproof bandage. ▪ Keep open wounds as clean as possible by washing.
<p>Chemical Hazards Cause: Contamination of floodwater by chemicals</p>	<ul style="list-style-type: none"> ▪ Be aware of potential chemical hazards during floods. Floodwater may have moved hazardous chemical containers of solvents or other industrial chemicals from their normal storage places.
<p>Drowning Cause: Entrapment in water or vehicles. Unable to swim</p>	<ul style="list-style-type: none"> ▪ Floodwater poses drowning risks for everyone, regardless of their ability to swim. Swiftly moving shallow water can be deadly, and even shallow standing water can be dangerous for small children. ▪ Vehicles do not provide adequate protection from floodwater. They can be swept away or may stall in moving water.
<p>Animal and Insect Bites Cause: Floodwater contains live snakes and insects</p>	<ul style="list-style-type: none"> ▪ Floodwater can displace animals, insects, and reptiles. To protect yourself and your family, be alert and avoid contact.
<p>Electrical Hazards Cause: Water becomes electrified</p>	<ul style="list-style-type: none"> ▪ Avoid downed power lines. ▪ Electrocutation from unprotected wires or wet electrical equipment.
<p>Wounds Cause: Sharp objects hidden in floodwater</p>	<ul style="list-style-type: none"> ▪ Floodwater may contain sharp objects, such as glass or metal fragments, that can cause injury and lead to infection.

Being prepared for floods

Types of flood warnings

Flood Watch: A Flood Watch is issued by the Bureau of Meteorology if flood producing rain is expected to happen in the near future and flooding is expected to be above Minor level. A Flood Watch covers a river basin or catchment. The general weather forecasts can also refer to flood producing rain. You should be prepared to act should flooding occur.

Flood Warning: A Flood Warning is issued by the Bureau of Meteorology when flooding is expected to occur or is happening. Flood Warnings provide a predicted flood level and time at which a river will reach that level. Flood Warnings are issued in relation to flood gauges which are situated at a certain point on a river. Flood Warnings may contain observed, peak or predicted river heights.

Flood Bulletins: SES Flood Bulletins provide information on likely flood consequences and what actions are required to protect yourself and your property. **Evacuation Warning:** When flooding is likely to cut evacuation routes or inundate property, the SES issues an Evacuation Warning to indicate that you should get prepared to evacuate. Being prepared will allow you to respond quickly if an Evacuation Order is issued.

Evacuation Order: When you are required to evacuate, the SES will issue an Evacuation Order advising people of what to do and where to go. There are a number of ways you might hear about the need to evacuate including, but not limited to, door knock (by SES or other emergency services), through radio stations, or by Prepareautomated telephone and/or SMS. In larger floods evacuation centres may be established to help people affected by the flooding.

All Clear: The NSW SES will issue an All Clear when it is safe to return to properties in the flood affected.

Prepare

If you live in a flood prone area, you should have a Emergency flood plan outlining what to do during the above flood scenarios (minor, moderate and major). You should also have packed and ready an emergency toolkit. The kits should contain items such as a radio with spare batteries, candles and matches, personal items such as photos, documents (emergency plan, insurance certificate) and ID, some food and water, pets and pet food, gloves and torch, wall and car charger for mobile phone and medical items. You can create an online emergency plan at <http://www.seshomeemergencyplan.com.au/>

Stay informed

- Turn on the radio
- Tell your neighbours
- Phone your relatives

Act quickly

- Move valuables to higher ground
- Check your emergency kit has everything required for evacuation
- Turn off gas/electricity
- Block toilets
- Lock doors

Evacuate

- Take pre-packed emergency kit containing food, clothes, pets, pet food and medications
- Do not drive through floodwater
- Let others know if you are going and where you are going
- Take a mobile phone with wall and car charger

Emergency kit

Radio with spare batteries	
Torch with spare batteries	
First aid kit and other medicines	
Gloves and boots	
Waterproof bag	
Documents	
Food and water	
Pets and pet food	
Mobile Phone with Wall and Car Charger	
Candles and Matches	