

## Sediment runoff - water turbidity

### What is sediment?

Sediment is soil particles that are washed off the land into creeks and rivers. Sediment can be a range of different sizes including large sand particles and smaller fine mud or clay particles.

### Think, Pair, Share Activity

Pair up with a friend and discuss the following. Make sure you write down your ideas!

- Fast moving water carries sediment with it. Imagine running the hose with the tap fully opened in a sand pit.  
What happens to the sand?  
Where does it move to?
- What do you think happens when there is heavy precipitation and flooding in the Brisbane River catchment?  
Where does the sediment end up?  
How does this sediment affect the Moreton Bay inhabitants?



Brisbane flood 2011.

### Sediment in Moreton Bay

High levels of sediment entering waterways are a major environmental concern. The main cause of high sediment levels in the river is soil erosion from creeks and rivers, farming land and construction sites. Moreton Bay is vulnerable to high sediment loads entering it through the Brisbane and Logan Rivers. The high amount of soil particles suspended in the water causes the water to become cloudy which is called water turbidity. High water turbidity in Moreton Bay is harmful to its inhabitants by blocking sunlight and smothering seagrasses and corals that require light to grow, consequently reducing the amount of food available for turtles, dugongs and fish.

### Instructions turbidity activity

1. Label 3 identical bottles with lids with 'fine', 'medium' and 'course'.
2. Fill all bottles with equal amounts of water up to 3cm from the top.
3. Collect equal volumes of 3 types of sediment. Use course sand for course type sediment, fine sand for medium type sediment and super fine dust-like soil for fine type sediment (look for this in high traffic areas around your school). If you cannot find super fine sediment, use talcum powder.
4. Add a different sediment type to each of the 3 bottles corresponding to your sediment labels.
5. Shake vigorously for 30 seconds and place in a location where they will not be moved.
6. Observe the water turbidity and record the time it takes for the water to become clear.
7. Discuss your results.
  - a. Which sediment size settled to the bottom first? How long did it take?
  - b. Which sediment size settled to the bottom last? How long did it take?
  - c. What implications does sediment particle size have on Moreton Bay inhabitants?
  - d. What inhabitants of Moreton Bay need light to survive? Why?
  - e. How are these inhabitants affected by high turbidity?