Modelling water erosion

**Year 5**

## Water erosion caused by rainfall on a sloping landscape

Safety: Ensure your working space is safe for water—away from electricity sources and with suitable flooring such as vinyl, paving or timber deck. Outside is preferable.

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| **What equipment will you use? Some things you will need have been included here. Add other equipment/materials you will use to build up your landscape.** |
| * 1 x large aluminium or plastic tray
* sand/soil
* a container holding at least 500ml water
* book wrapped in plastic, a chunk of wood, or another item to prop up the tray
* optional: a spray bottle or cup with holes in the bottom to simulate rainfall
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| **Modelling water erosion** |
| 1. Build a sloping/hillside landscape in the aluminium or plastic tray.
	1. Build an elevated section at one end of the tray, making sure that the ‘land’ at the other end is lower.
	2. Cover the landscape in things you might find on a hillside. Leave parts of the soil exposed.
2. Cut a small notch at the end of the tray where the land is lower.
3. Draw an annotated diagram of the landscape in your science journal.
4. Prop up the end of the tray opposite the notch to ensure the water flows downwards.
5. Hold the bucket/tub under the notch to catch overflow of water and sand.
6. Using the bottle, pour the water on a specific area of the landscape, at a consistent rate. Alternatively, use a spray bottle or cup with holes in the bottom to simulate rainfall.
7. Observe how the water flowing interacts with features of the landscape.
8. On the annotated diagram mark the areas where water was poured.
9. On the annotated diagram draw how the water has affected the landscape, using a different coloured pen.
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## Water erosion caused by waves

Safety: Ensure your working space is safe for water—away from electricity sources and with suitable flooring such as vinyl, paving or timber deck. Outside is preferable.

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| **What equipment will you use? Some things you will need have been included here.** **Add other equipment/materials you will use to build up your landscape.** |
| * 1 x large aluminium/plastic tray
* sand/soil
* a container holding at least 500ml water
* wide piece of hard plastic to push the water
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| **Modelling water erosion** |
| 1. Build a beach landscape in an aluminium or plastic tray.
	1. Cover the whole tray with sand to simulate a beach.
	2. One section of the ‘land’ should be very low, to simulate the seabed where the water will sit. One section should be higher to simulate the beach, and one section should be higher again to simulate sand dunes.
	3. Include other natural features you might find at a beach.
2. Fill the shallow side of the tray with water, making sure you leave some flat area exposed to represent the shoreline.
3. Draw an annotated diagram of the landscape in your science journal.
4. Use a wide piece of hard plastic to push large amounts of water towards the ‘shore’, simulating waves.
5. Observe how the waves interact with features of the landscape, particularly the sand dunes.
6. On the annotated diagram draw how the water has affected the landscape, using a different coloured pen.
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**Water erosion of riverbanks caused by heavy rainfall**

Safety: Ensure your working space is safe for water—away from electricity sources and with suitable flooring such as vinyl, paving or timber deck. Outside is preferable.

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| **What equipment will you use? Some things you will need have been included here.****Add other equipment/materials you will use to build up your landscape.** |
| * 1 x large aluminium/plastic tray
* rocks/block/small containers
* sand/soil
* a container holding at least 500ml water
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| **Modelling water erosion** |
| 1. Build a river landscape in an aluminium or plastic tray.
	1. Each side of the landscape should be elevated (but not necessarily completely flat) with a gully/channel running through it.
	2. Include bends in your ‘river’ and other features you might see in the landscape.
2. Pour a small amount of water into the river, as would appear in nature.
3. Draw an annotated diagram of the landscape in your science journal.
4. Use a large water bottle or bucket to pour a large amount of water into one end of the ‘river’ all at once.
5. Observe how the sudden increase in water level interacts with features of the landscape, particularly the riverbanks and any bends in the river.
6. On the annotated diagram draw how the water has affected the landscape, using a different coloured pen.
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