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# CATCHMENT TO COAST

Name: \_\_\_\_\_ Grade: \_\_\_\_\_

## ***INTRODUCTION***

### **Have you ever heard of a catchment?**

- What do you think it catches?

A catchment is an area where water is collected by the landscape. Rain falls in the mountains. Some of this rain is absorbed by the soil, getting used by plants or adding to groundwater sources. Other water starts to flow down the slope driven by gravity. Smaller streams join up with other streams eventually forming a large river. This river will continue to flow until it reaches the sea. Every inch of land in the area that water collects in forms part of a catchment. All the soil, animals, plants, and even human activity in a specific catchment are all linked together and affect the health of that catchment. Even human activity that takes part in the catchment will affect the health of the system.

### **Every drop of water we use is from water collected by a catchment.**

Humans are entirely reliant on water trapped and stored in catchments. Our main water sources, include dams and rivers.

- Can you think of some other human uses for rivers, lakes and wetlands?

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**ACTIVITY**

**What can affect the way water flows through a catchment?**

**Time to do an experiment.**

We need the following items:

- plastic containers
- a small bowl
- different types of soil
- wood chips
- leaves
- rocks
- water
- blocks of varying sizes



**Step 1:**

Take a plastic container and make a small hole in one side.



**Step 2:**

Fill your container  $\frac{3}{4}$  full of soil from your school grounds. You now have your own catchment. Prop your catchment up on one side using the blocks. You can choose the height.

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#### **Step 3:**

You can gently pour water into the one side of the container and the water will slowly flow down, exiting through the small hole. Use the small bowl to catch the water. This simulates rain in a catchment.

#### **Step 4:**

Now experiment with different slopes, types of soil and even adding leaves (vegetation) to see how it affects the flow of water in your catchment.



#### **Step 5:**

You can even test the human element in catchments by adding pollution – water with different kinds of food colouring or pieces of paper in it. How does soil and vegetation affect the movement of these pollutants?

## DISCUSSION

- Write up one (or more) aspects of your experiment using the scientific method outlined below.



### OBSERVE OR ASK A QUESTION



### DO BACKGROUND RESEARCH



### CONSTRUCT A HYPOTHESIS

This is an assumption based on previous knowledge that you will test to see if it holds true. *E.g. adding vegetation to a catchment will reduce erosion*



### TEST WITH AN EXPERIMENT



### ANALYSE RESULTS



### DRAW CONCLUSION



### COMMUNICATE YOUR CONCLUSION

**ACTIVITY****How does my school affect catchments?**

Catchments supply us with the water we need, but are we helping catchments stay healthy?

The answer – not always! Sometimes, we use too much water and sometimes our activities cause the water in catchments to become dirty and polluted.

**Let's do a quick catchment audit at our school:**

Fill in the table below to work out your catchment score.

**School Grounds**

More than half of the school ground is concrete, bricks.	<input type="checkbox"/>	0
Less than half of my school is covered in concrete and or bricks.	<input type="checkbox"/>	2

**Vegetation**

My school has large areas of grass and vegetation.	<input type="checkbox"/>	2
My school has small areas of grass and vegetation.	<input type="checkbox"/>	0
My school has mostly alien vegetation.	<input type="checkbox"/>	0
My school has mostly indigenous vegetation.	<input type="checkbox"/>	2

**Pollution**

Our litter is safely disposed of in sealed dustbins.	<input type="checkbox"/>	2
Our litter is thrown on the floor or blows out of dustbins.	<input type="checkbox"/>	0

**Sewage**

Toilet waste is safely removed or stored.	<input type="checkbox"/>	2
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Toilet waste leaks out from our toilets.		0
<b>TOTAL SCORE (10)</b>		

**What does your score mean?**

0 – 2 points	There is lots for you to do. Start planning projects so that you can score higher next time.
4 – 6 points	You are doing well, but there is still room to improve.
8 – 10 points	Great job, keep up the good work!

**DISCUSSION**

- Why do you think concrete makes a difference in catchments?

*(Hint think about how things absorb water)*

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- Why is alien vegetation worse for rivers than indigenous vegetation?

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- Which of your activities have an impact on catchments?

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- Do you know where your litter goes after you throw it away?

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***ACTION PLANNING***

**Commit to Change**

We can all do something to help keep our catchments healthy. Using the boxes, write one action per box that we can do to keep our rivers safe and healthy.
