

THE WATER CYCLE

Geography (Key Stages 2 and 3)



LEARNING OUTCOMES

- know the definitions of the keywords precipitation, infiltration, evaporation and condensation
- understand the water cycle and recall the stages involved
- use a model to demonstrate the stages of the water cycle

The activities in this pack require additional equipment, we recommend getting these together before you get started:

Activity 2 – Creating your Own Water Cycle

You will need:

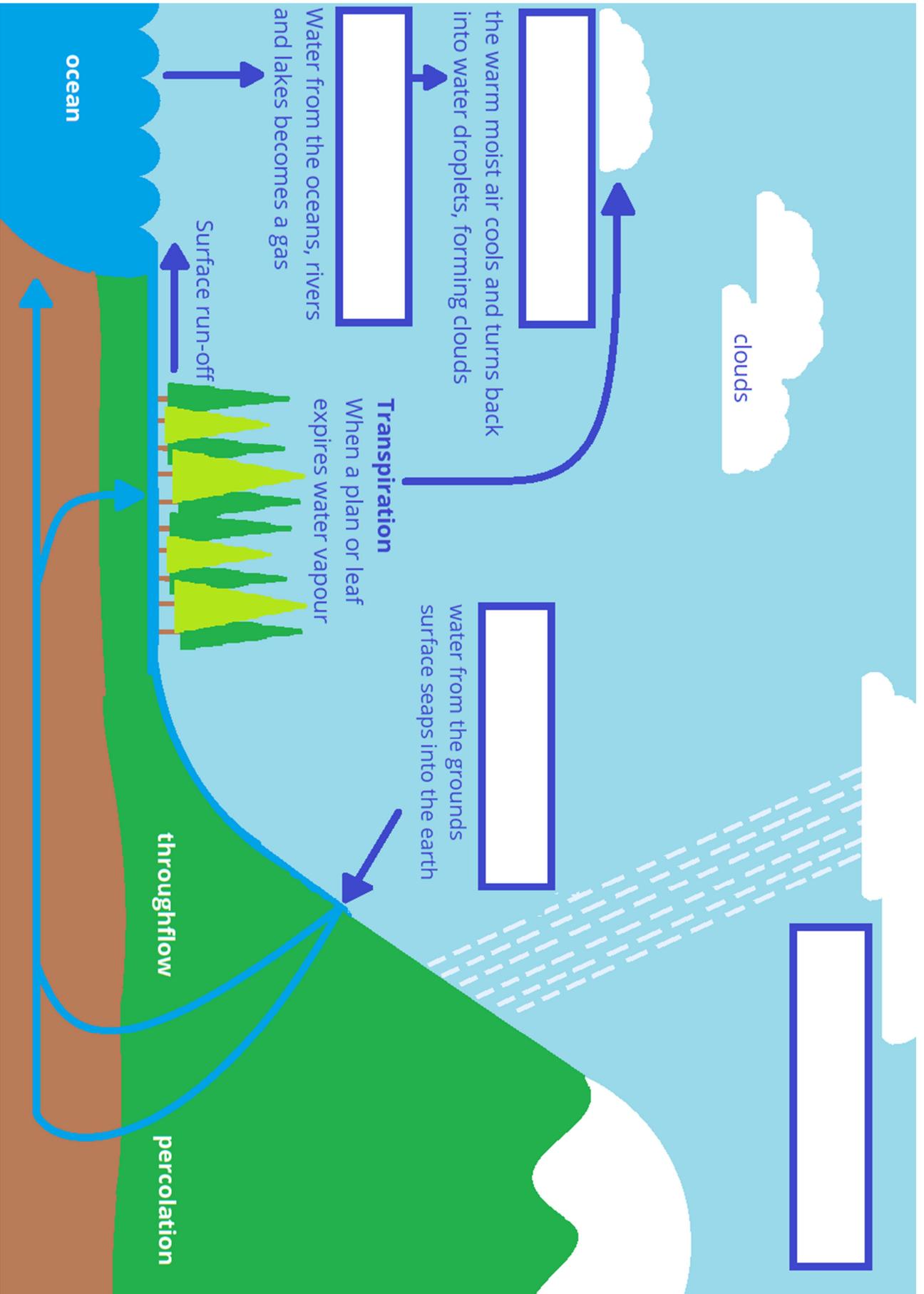
- An empty water bottle
- Scissors
- Clingfilm
- Soil
- 50-100ml water

ACTIVITY 1 - KEY WORDS

Draw a line to connect the key word to the definition you think fits it.

Precipitation	A change of state in which gas becomes liquid by cooling.
Infiltration	The process in which a liquid changes state and turns into a gas.
Evaporation	Moisture that falls from the air to the ground. Includes rain, snow, hail, sleet, drizzle, fog and mist.
Condensation	The process by which water on the ground surface enters the soil.

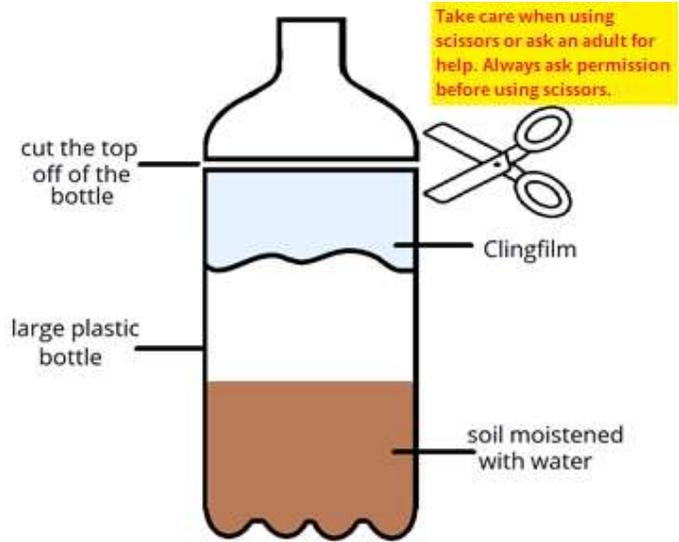
Before starting the next step, check your answers on the answer sheet so that you know what each word means. Now that you know the definitions of the key words, add the correct words to the diagram on the next page.



ACTIVITY 2 - CREATING YOUR OWN WATER CYCLE

Method

1. Carefully cut the top off of the bottle (see diagram). You might need to ask an adult to do this for you.
2. Place enough soil into your bottle so that it is one quarter full.
3. Water the soil, ensuring that you do not water-log it but so that it is nice and moist, again, an adult might be able to help you here.
4. Cover the top of the bottle with Clingfilm so that the bottle is airtight.
5. Leave the bottle on window sill, or in a sunny spot.
6. Re-visit the bottle over the next few days to see if the water cycle you have created has begun. Fill in your observations in the table below.



Results

Day	Observation
1 (day of set up)	The soil is moist but the rest of the bottle is dry.
2	
3	
4	
5	
6	
7	

QUESTIONS

1. Describe how each of the processes we learnt about in activity 1 are shown in your water cycle model.

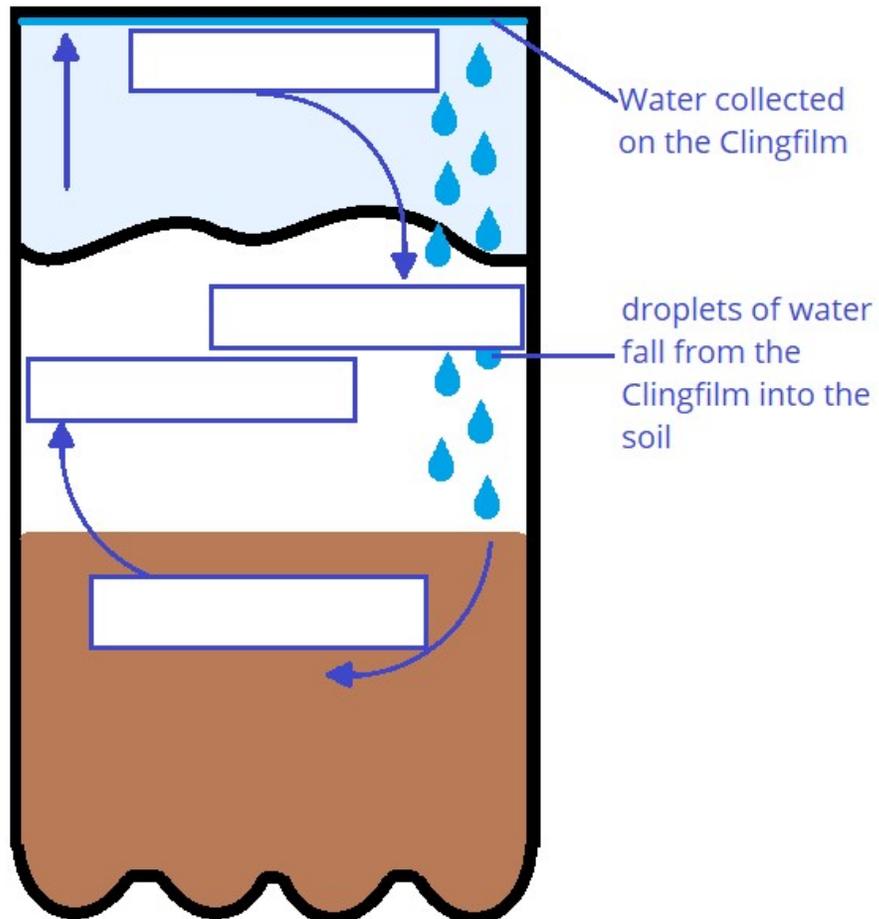
Precipitation _____

Infiltration _____

Condensation _____

2. Using the keywords you have learnt, fill in the diagram below, showing your water cycle model in action.

KEYWORDS: Precipitation, Infiltration, Evaporation, Condensation



3. What would happen if you removed the cling film for a couple of hours or a day and how would it affect your water cycle?

EXTRA CHALLENGE

Create a water cycle in bottle again (see previous activity) but, this time with planting some seeds (cress seeds will be quickest to grow) or placing a ready-grown plant into your soil. Make some holes in the cling film. After waiting until the seeds to have begun growing (This may take a couple of weeks, it'll be quicker if you use a plant that has already begun growing) can you see any changes to your water cycle?

1. Write a description below of what you see. Was this what you expected?

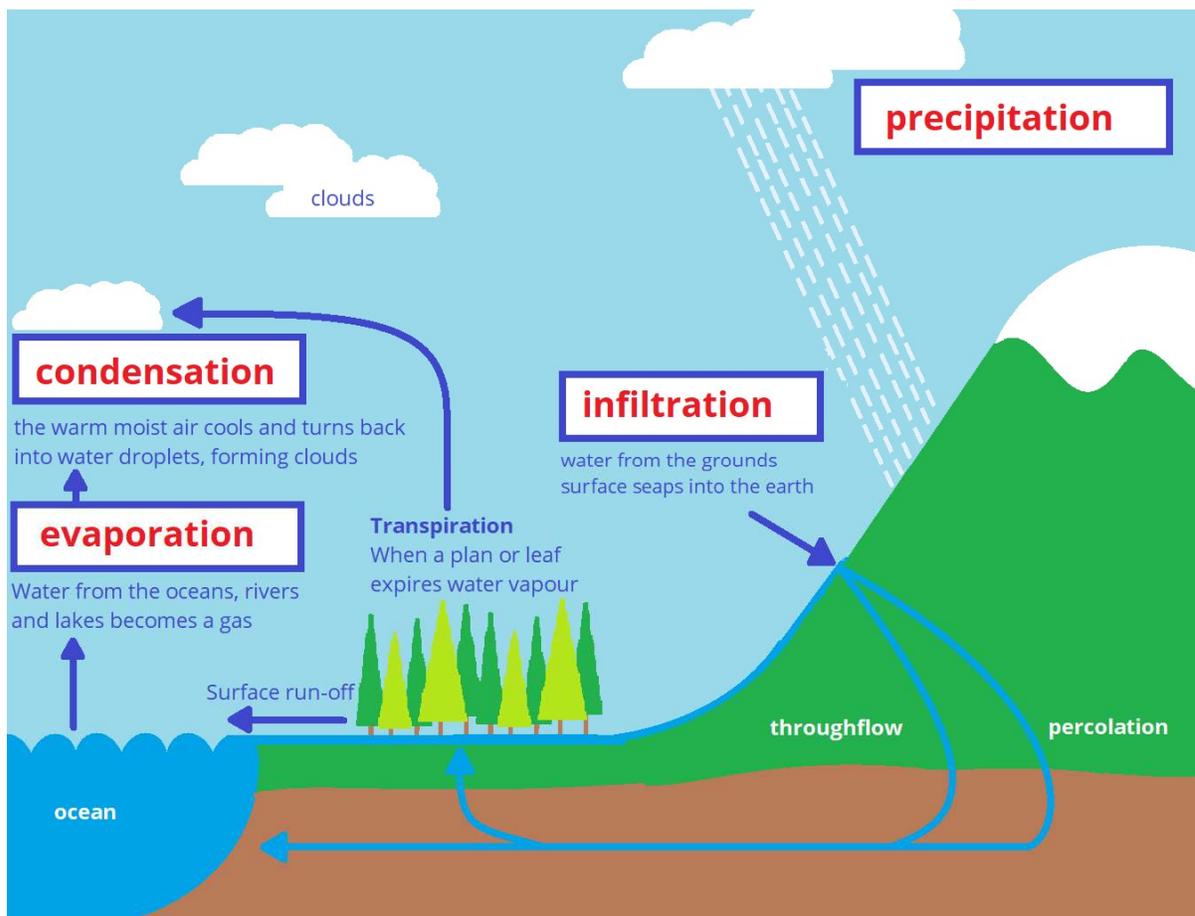
2. Why is it important to make holes in the Clingfilm this time?

3. Name the new process, linked to the water cycle, which will be occurring because of the introduction of the plant? (hint: look back at the water cycle diagram in activity 1)

ANSWERS

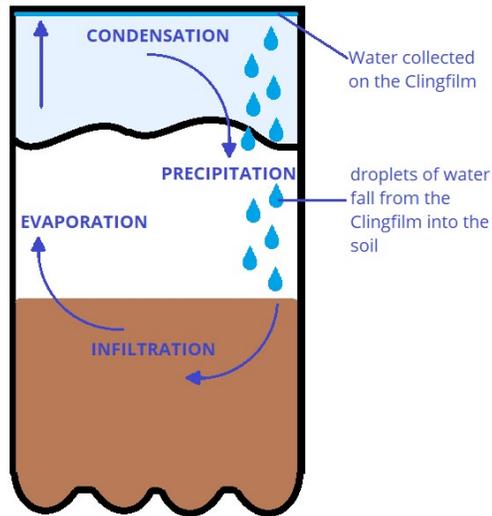
Activity 1 - Key words

- Precipitation A change of state in which gas becomes liquid by cooling.
- Infiltration The process in which a liquid changes state and turns into a gas.
- Evaporation Moisture that falls from the air to the ground. Includes rain, snow, hail, sleet, drizzle, fog and mist.
- Condensation The process by which water on the ground surface enters the soil.



Activity 2 - Creating your Own Water Cycle

1. (Precipitation) Pouring water into the soil in the bottle demonstrates precipitation/rain.
(Infiltration) The water soaks into the soil.
(Condensation) Water droplets form on the inside of the bottle, this is condensation.



- 2.
3. The water would evaporate from the soil and the soil would dry up.

Extra challenge

1. You might expect to see more evaporation, condensation and precipitation when there is plant life, but this may not happen in your bottle water cycle as some water droplets will travel through the holes you created in the Clingfilm.
2. Because plants need air (oxygen and carbon dioxide) to survive.
3. Transpiration.