

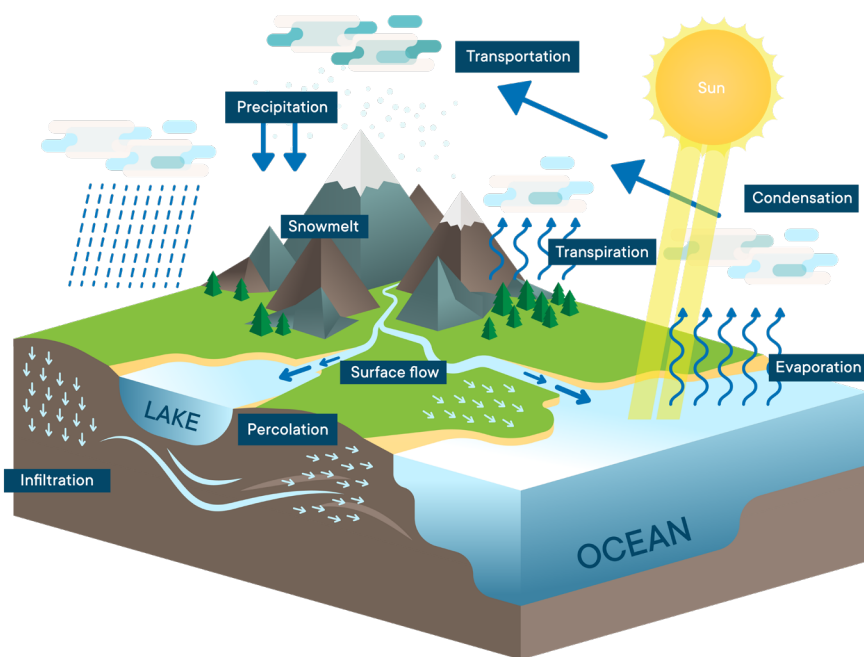
# Water cycle

# The water cycle

## Introduction:

The water cycle is a way of showing how water moves around the planet. Water is continually transferring between the atmosphere and the earth's surface, moving around the globe all the time. This is important to understand, not just for our water needs but also because it means that pollutants can easily be carried large distances within the water cycle .

The cycle begins with the sea. The surface layers of the ocean are heated by the sun, turning it into vapour (tiny droplets of water). This vapour rises and cools into clouds. The clouds are then moved by the wind. As the droplets within the clouds collect and get bigger they become too heavy to stay suspended and begin to fall as rain. The water that falls to the earth eventually flows through rivers, over the land surface or through ground water back into the sea and so the cycle begins again.



### Key terms:

**Evaporation** - heating liquid water so that it becomes vapour.

**Transpiration** - water vapour given off by plants.

**Condensation** - the water vapour cools and becomes liquid again.

**Transportation** - winds move water around the atmosphere in the form of clouds.

**Precipitation** - water falling back to earth in many forms e.g. rain, snow, sleet, hail.

**Infiltration** - water trickles down through the earth's surface and travels by **percolation** through the rock.

**Surface flow** - liquid water running across the surface of the land into rivers and sea.

## Interesting facts:

- 70% of the earth is covered in water. 97% of all water is in oceans.
- Of the 3% that is fresh water, 2% is inaccessible in ice caps and glaciers, leaving only 1% to travel around the water cycle and for our daily use.
- The same water that existed on earth billions of years ago still exists today. Water that comes from your tap could contain the same molecules that dinosaurs drank.

### Further research keywords:

Hydrological cycle, aquifer, deposition, (relief, frontal and convectional rainfall), river discharge, runoff, hydrograph, meteorology, dew point, rain shadow, sea surface temperature

# Water wheel

45 - 60 mins



Teacher's pack

Topic: Water cycle

KS: 2

## Activity guide:

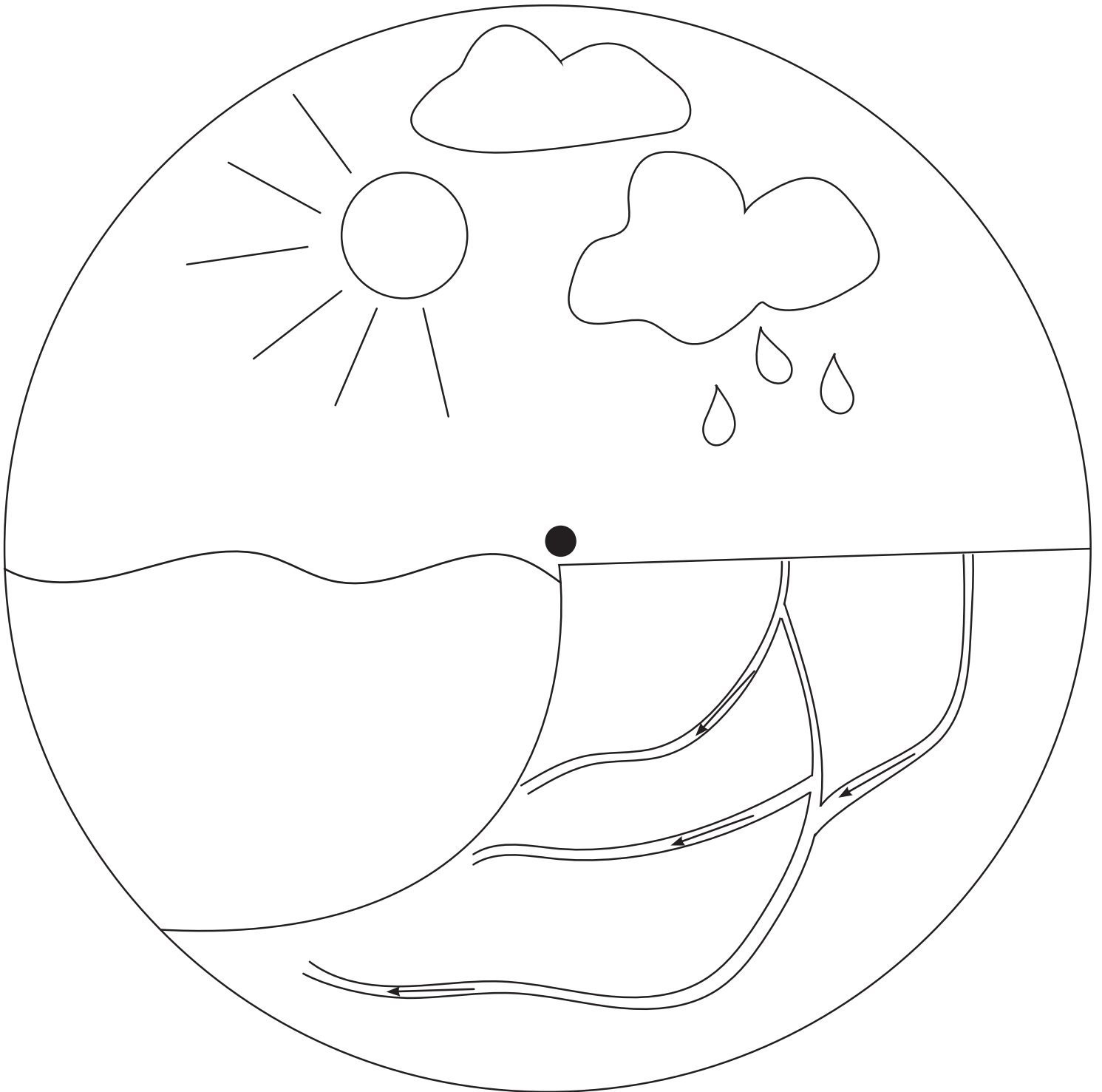
### Equipment required:

- Printout of template - preferably on card or can be stuck onto a paper plate (R\_WC\_1)
- Scissors
- Split pin
- Glue

### **To do the activity:**

1. Pupils are provided with copies of the water cycle template sheet (R\_WC\_1).
2. The pupils colour in and decorate the worksheet. Encourage them to add details like trees, mountains, sea life, different kinds of precipitation etc to make each one unique.
3. They then cut out the words and the water movement arm.
4. Align the two black central dots and put the split pin through so that the arm can be moved around the circle in the direction of the water cycle.
5. Stick the labels onto the circle in the correct places for the water movement that it refers to. Pupils can add extra information or labels to their wheel.

Water movement ●



Evaporation

Precipitation

Condensation

Collection

# Salty saucers

2-4 days



## Activity guide:

### Equipment required:

- Shallow wide dishes
- Salt
- Water
- Blue food colouring

This activity demonstrates the often invisible element of the water cycle, evaporation. Variations in where the saucers are located can be used to demonstrate the power of heat to speed up water loss. The salt and food colouring will crystallise as the water evaporates, providing a really clear demonstration.

### **To do the activity:**

1. This can be done in groups or as a whole class activity.
2. Give each group a few different bowls.
3. Mix the water and salt together in the bowls, then add a few drops of the food colouring.
4. There's lots of different ways the children can experiment, by adding more or less water, increasing the quantities of salt and placing the bowls in different locations, some in the sun, some in the shade, some by radiators.
5. Once each group has decided on its variations they need to label each bowl.
6. The pupils will need to check their bowls twice a day for a few days. The results should be collected and discussed as a class. Which one evaporated faster? What was different about it?