# The water cycle

## Stage 1

Exploring how all water moves endlessly through the water cycle

Sydney WATER

# Lesson 1
# The natural water cycle

Activity 1: Wondering about water

Sydney WATER

# Does water disappear?


Have are clouds made?

# Is rain new water?

# How does water move from the Earth to the clouds and back?

# Lesson 1
# The natural water cycle!

Activity 2: What is the natural water cycle?

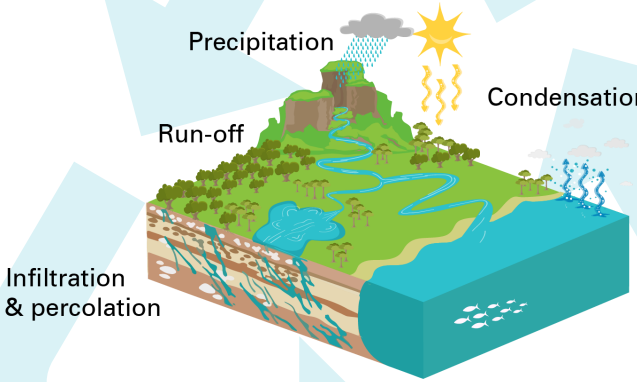
Sydney WATER

# Did you know?

All the water on the Earth is all that we have.

It  moves from the Earth to the sky and back again every day, all the time.

It goes round and round in an endless cycle called the natural water cycle.




Natural water cycle

# Can you guess how old water is?

There's never new water and water doesn’t disappear.

# It’s billions of years old!

There is never new water. In fact…

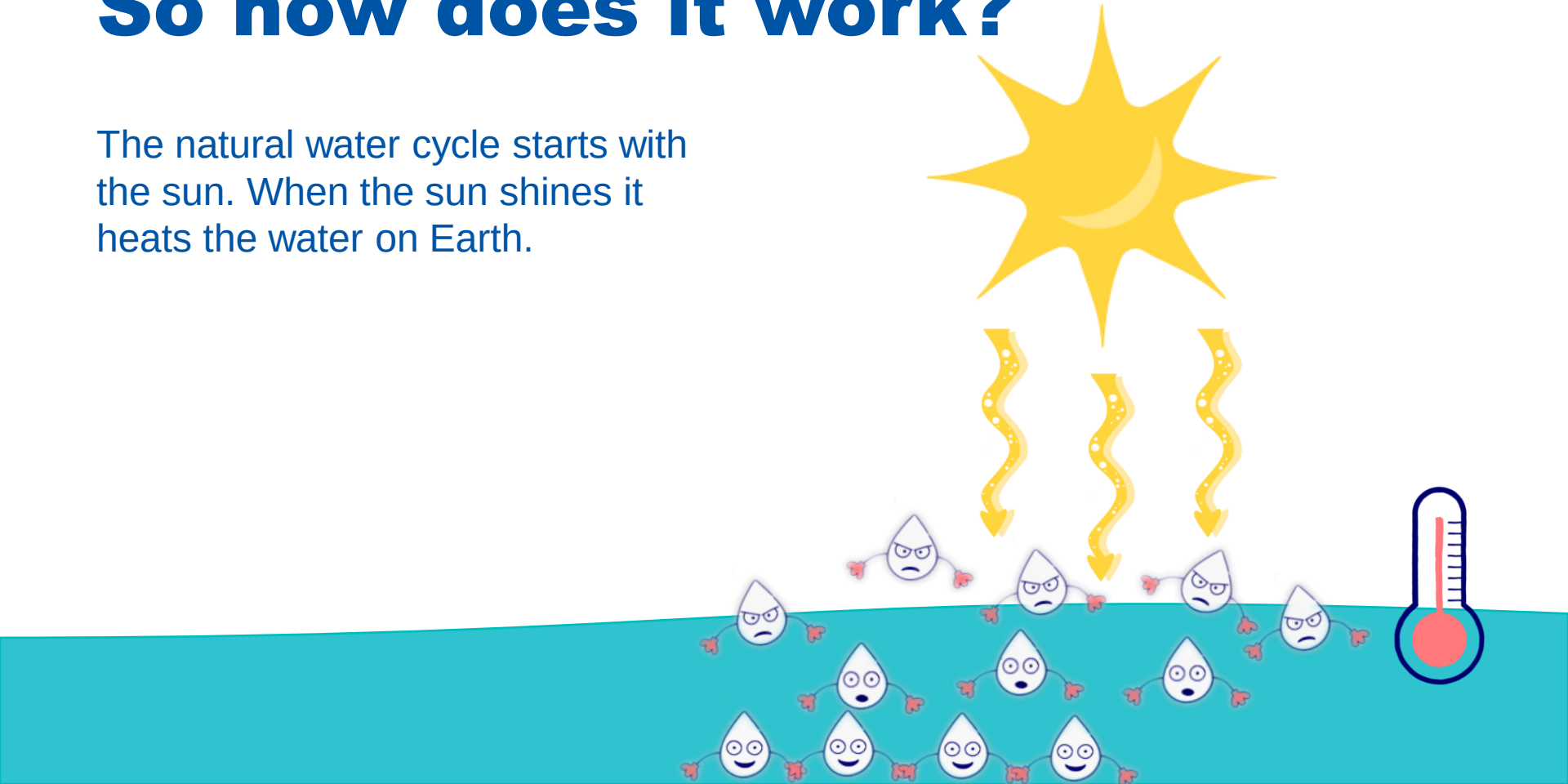
saber tooth tigers
drank this water

sharks, whales and goldfish
swam in this water

dinosaurs
drank this water

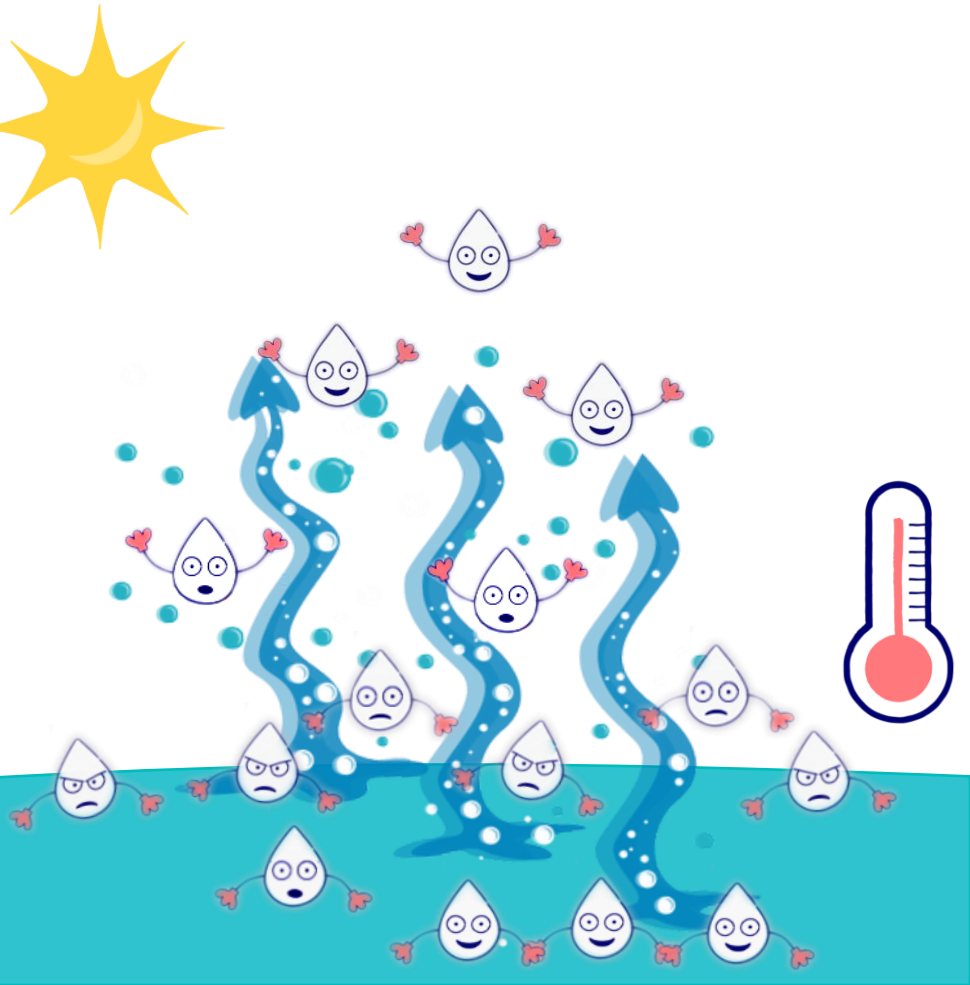
# So how does it work?

The natural water cycle starts with the sun. When the sun shines it heats the water on Earth.



# Evaporation...

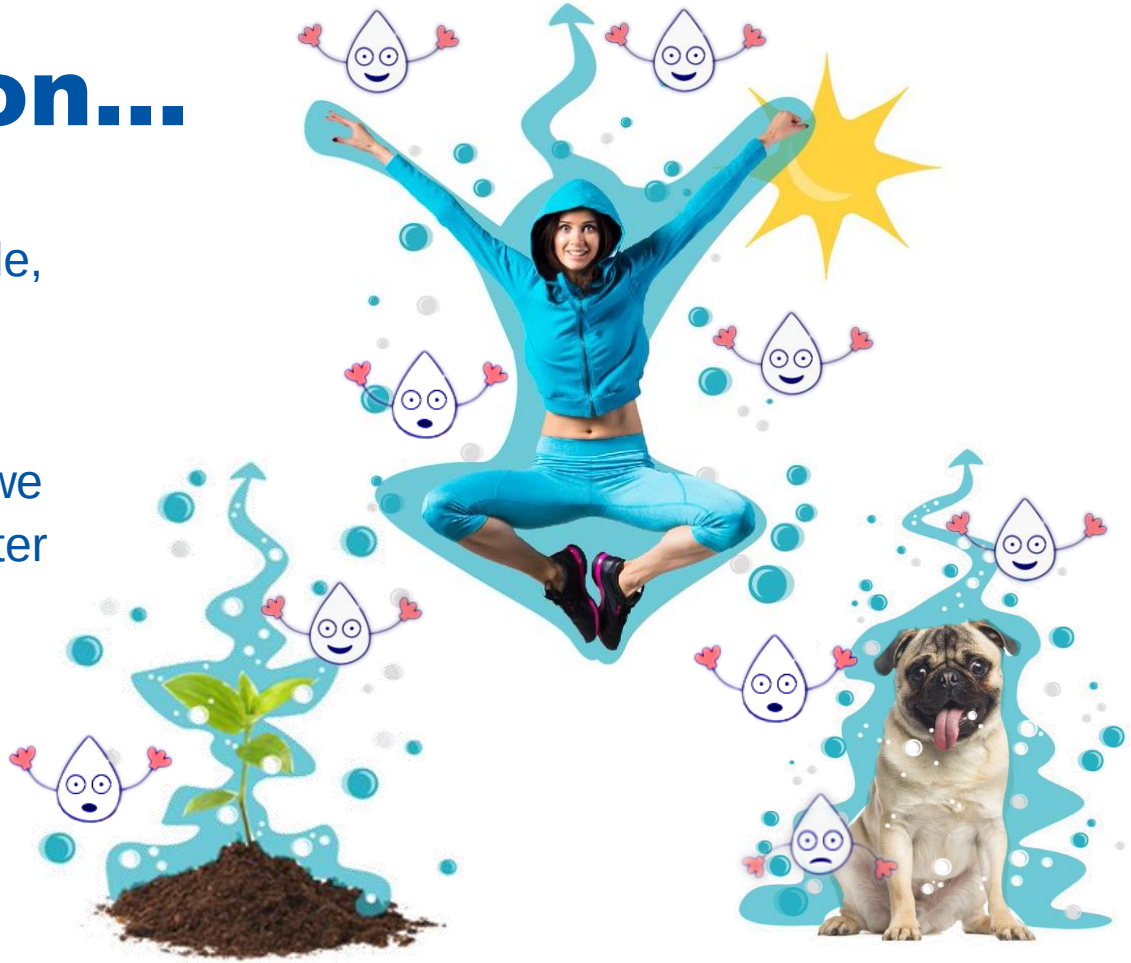
is when the sun heats the water, the water droplets are too hot to stick together and turn into gas called water vapour.



# Transpiration...

is when the sun warms people, plants and animals.

When we sweat or breathe, we release small amounts of water vapour into the air too.



# Did you know?

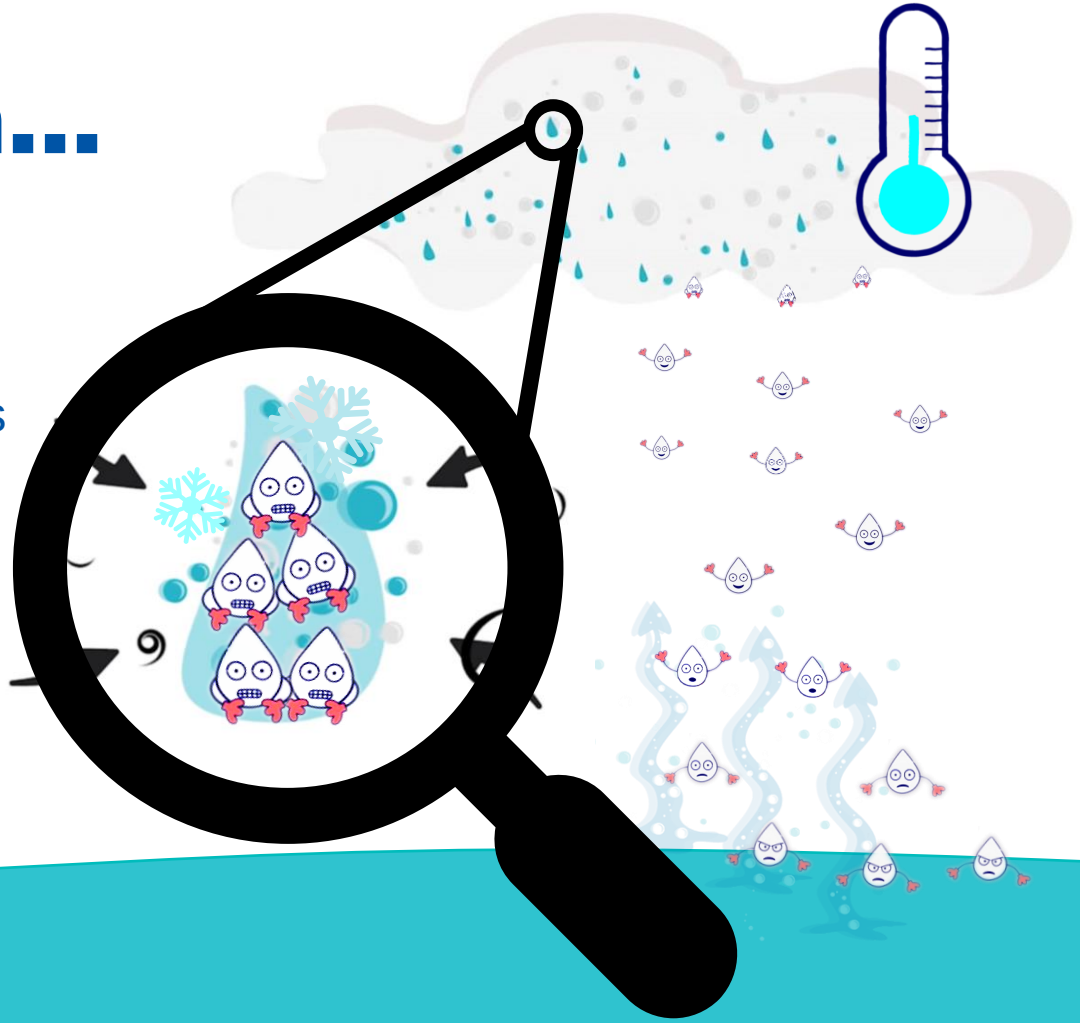
A gum tree can transpire (release) up to 200L of water everyday!

That’s 100 milk bottles of water.

Trees can help make clouds - think about **rain**forests.

# Condensation...

is when water vapour rises in the air and cools to form tiny water droplets that stick together. This is how a cloud is made.

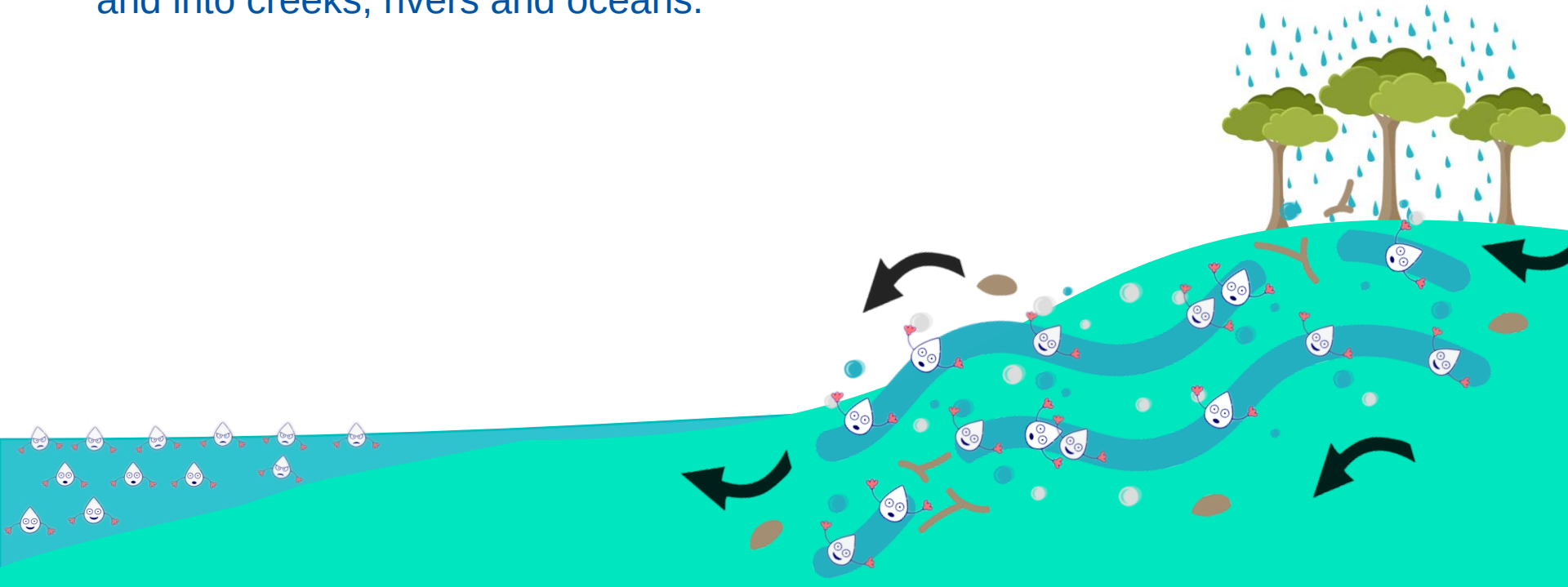


# Precipitation...

is when the clouds are so heavy with water droplets they fall as rain, snow or hail.

# Run-off...

is when water flows over the ground and into creeks, rivers and oceans.

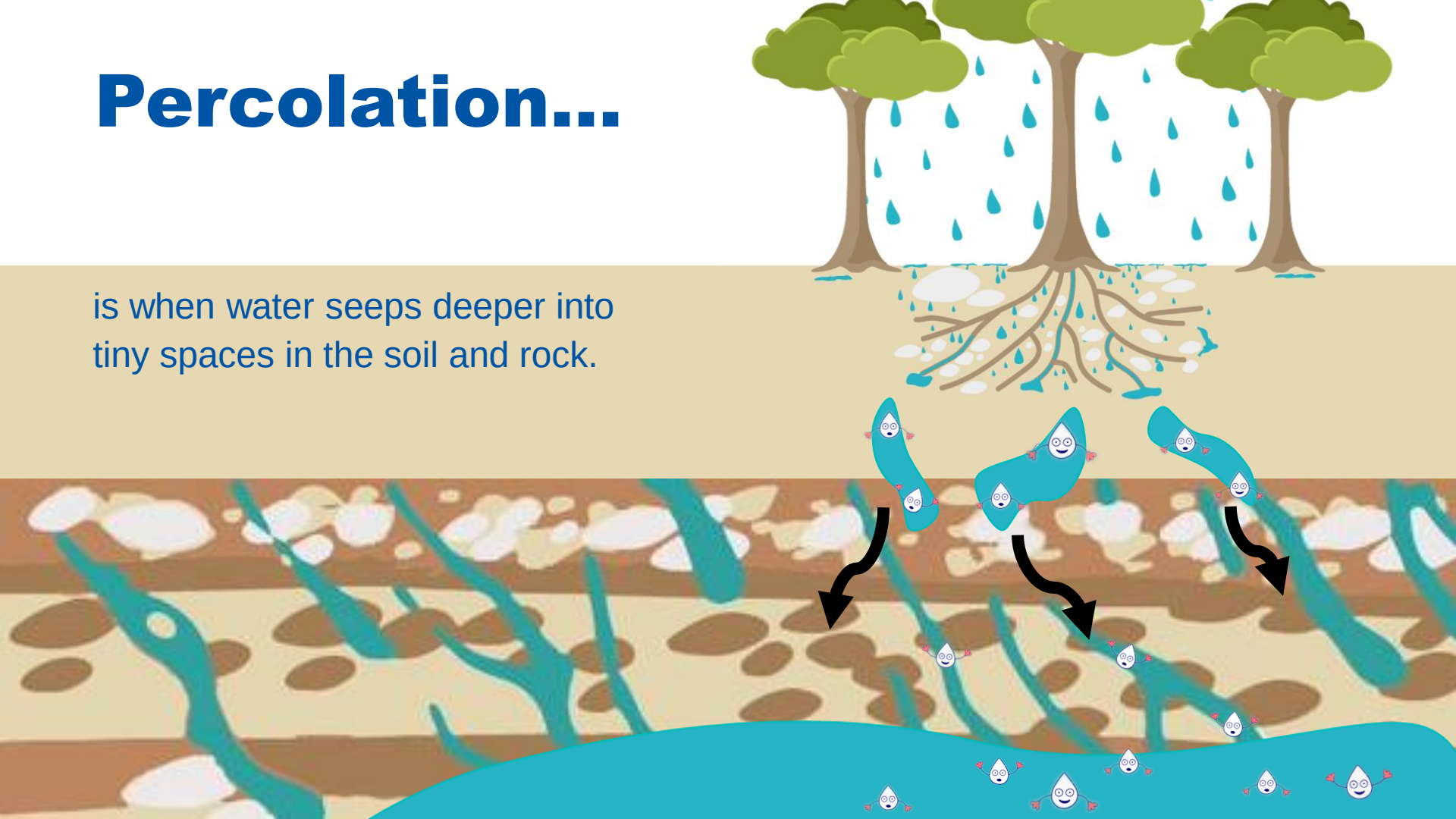


# Infiltration...

is when water falls on the ground and soaks into soil.

# Percolation...

is when water seeps deeper into tiny spaces in the soil and rock.



# Water cycle song

by Monica Sheba

(To the tune of “She’ll be comin’ round the mountain”.)

Water goes round in a circle, yes it does

*(use finger to draw a large circle in the air)*

Water goes round in a circle, yes it does

*(repeat motion)*

It goes up as evaporation

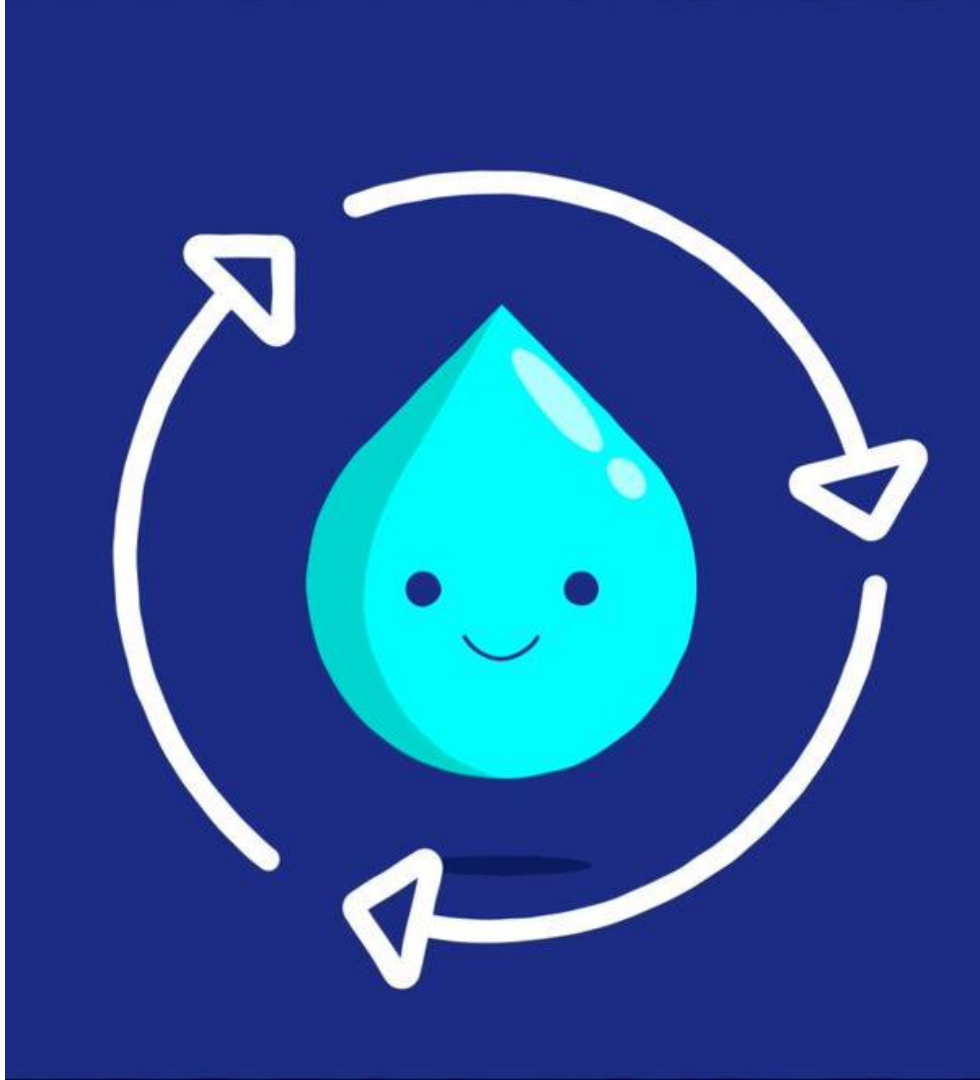
*(raise arms with palms up)*

And makes clouds and condensation

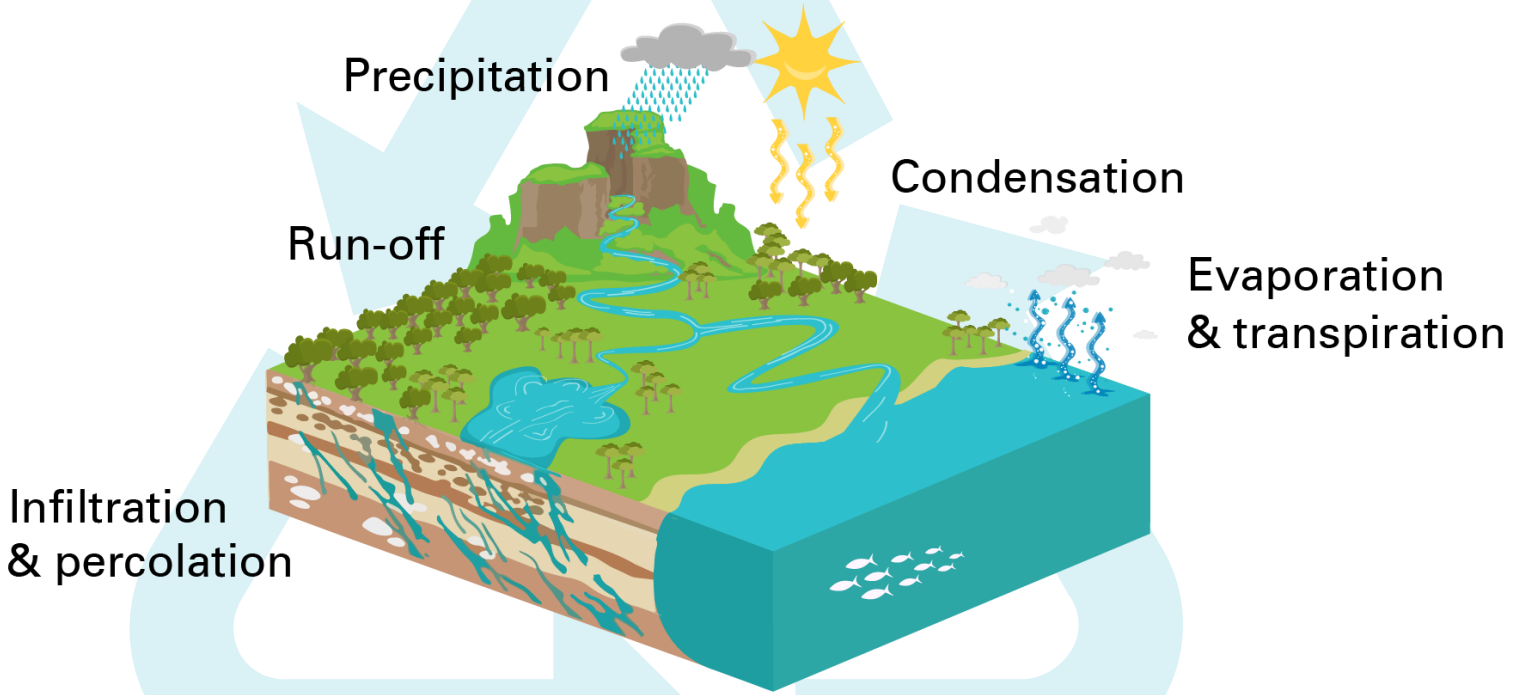
*(bring hands above head to form a cloud shape)*

Then falls down as precipitation, yes it does

*(slowly lower hands, wiggling fingers)*



Sydney Water Cycle Animation



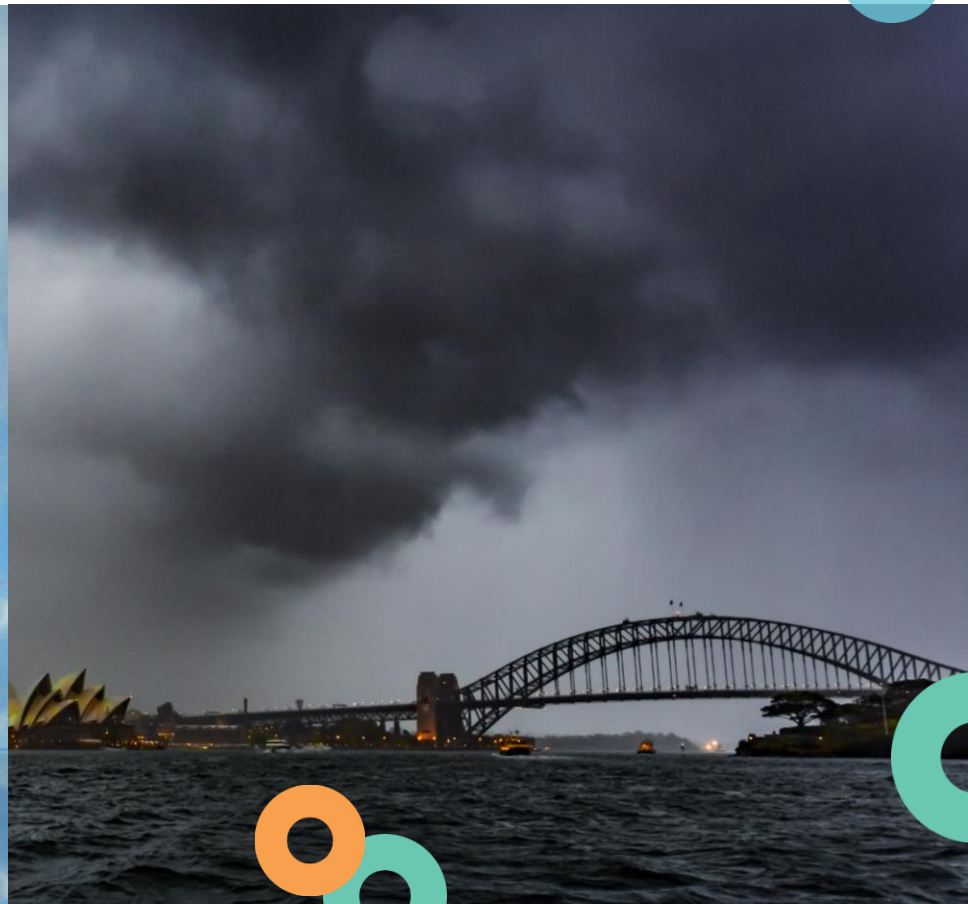

# Natural water cycle

# Lesson 2
# Water cycle experiments

Activity 1: Demonstration – Can you make a cloud?

Sydney WATER

# What are clouds? What are they made of?

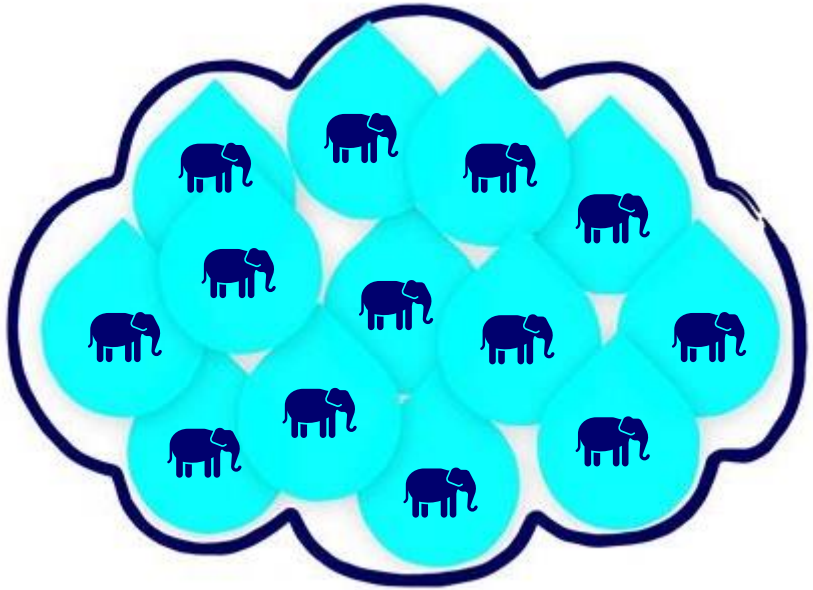


# Did you know?

Clouds are made up of squillions of tiny water droplets.

The average cloud weighs about 500 tonnes (500,000 kg).

That’s about 100 elephants!



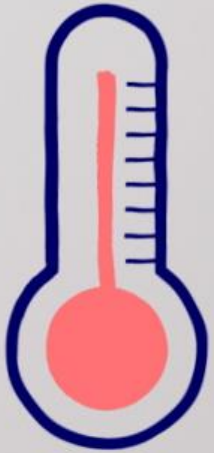
# Let’s make a cloud…

and watch a part of the water cycle in action

Make a cloud experiment

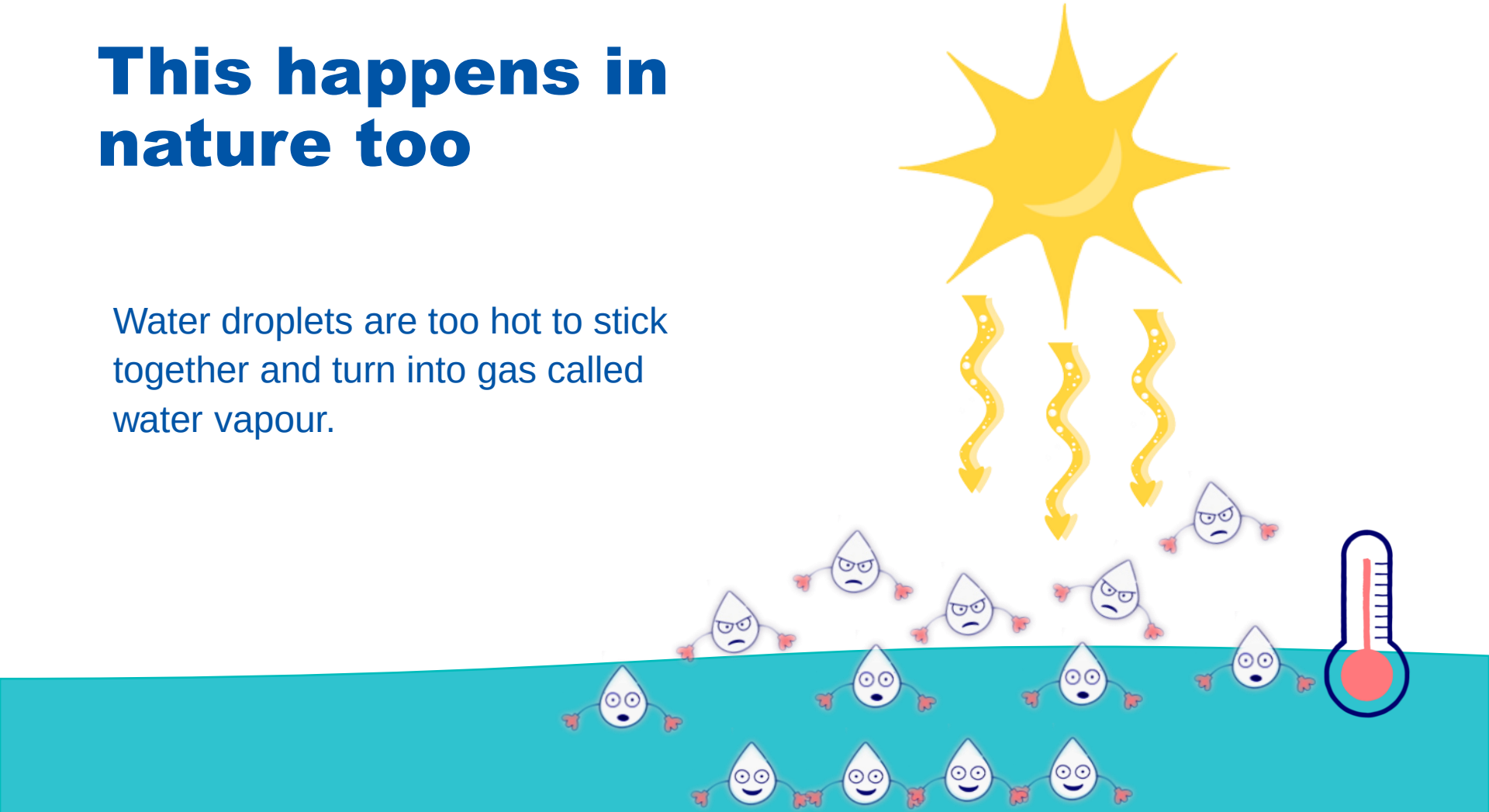
# What happened to the warmed water?

Water droplets are too hot to stick together and turn into gas called water vapour.

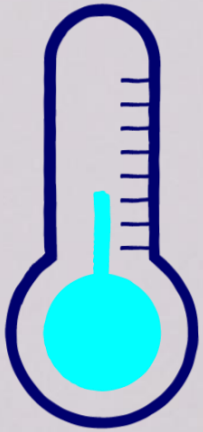


# This happens in nature too

Water droplets are too hot to stick together and turn into gas called water vapour.



# What happened near the ice cubes?



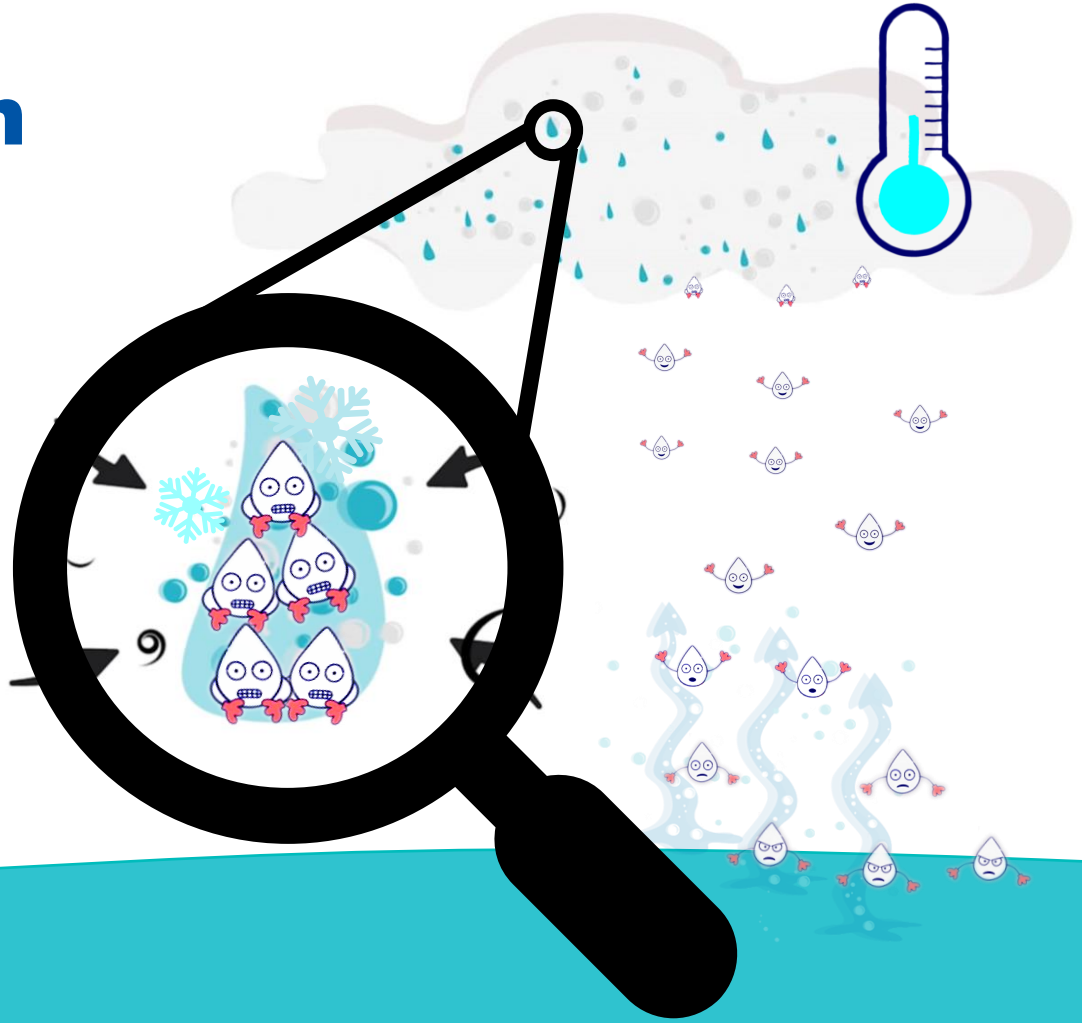
The ice cooled the water vapour.

# Condensation

The water vapour turned into tiny water droplets that stick together.

# This happens in nature too

When water vapour rises in the air, it cools and forms tiny water droplets that stick together. This is how a cloud is made.



# Lesson 2
# Water cycle experiments

Activity 1: Practical investigation – Does water disappear?

Sydney WATER

# Let’s see if water evaporates

Water evaporation experiment

Measure and compare

# Plan an investigation

**Experiment title**: Water evaporation experiment

## 1 questions

What am I going to **investigate** (try to find out)?

How fast/much will the water evaporate (float away)?

## 2 hypothesis


What do I think will happen (**prediction**)?
Why?

## 3 materials

What **materials** (things) will I use?

## 4 method

How will I use my materials?
Draw or take photos to help explain.

## 5 hazards

What are some **hazards**?
(things that could cause harm)

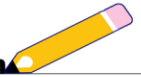
## 6 risks

What can I do to reduce **risks**?
(chance that hazards cause harm)

## 7 observations

What did I…


## 8 conclusion



What did I find out? Did my prediction come true?
Why or why not?

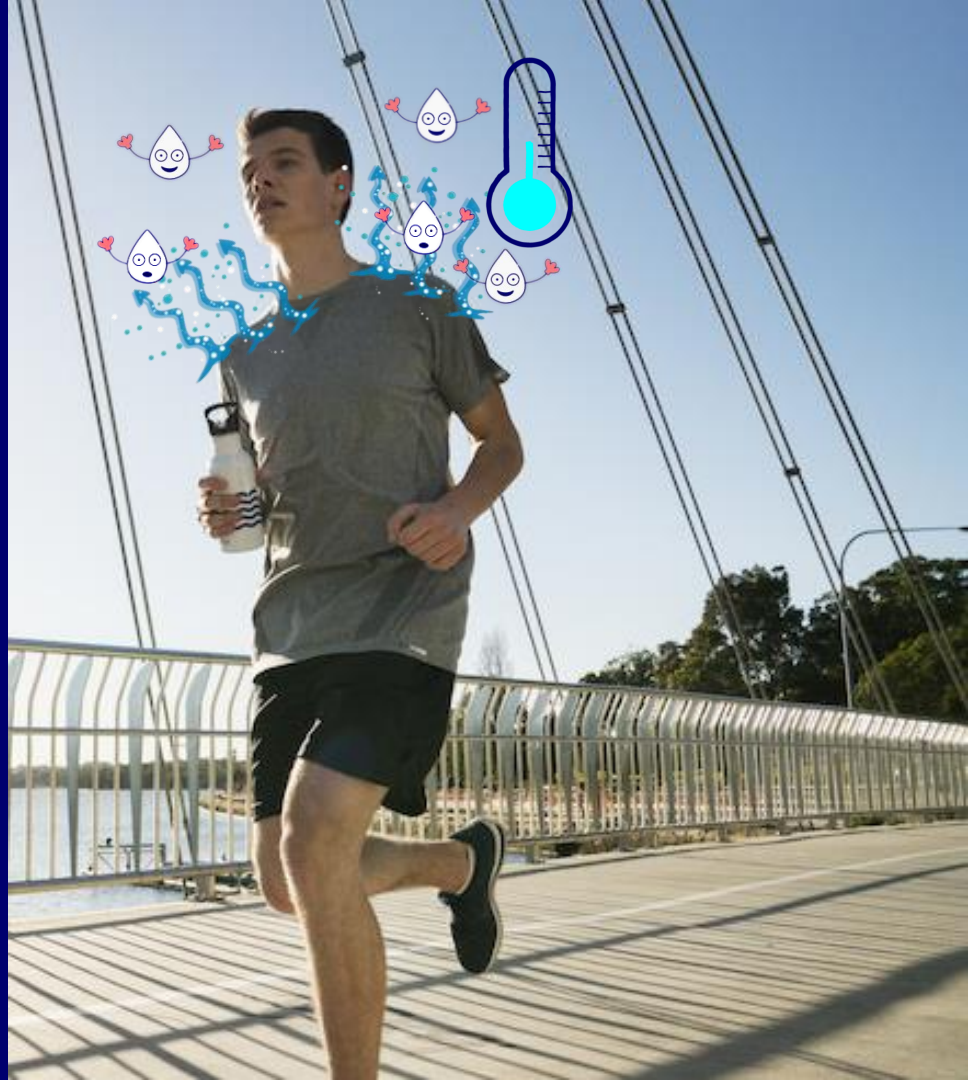
## 9 questions

What questions do I have now?
What do I want to know more about?

# Did you know?

## Evaporation and transpiration helps us keep cool!

When liquid water like sweat turns to water vapour (gas) it cools the air around us.



# Lesson 3
# The urban water cycle

Activity 1:  What is the urban water cycle?

Sydney WATER

# Natural environments

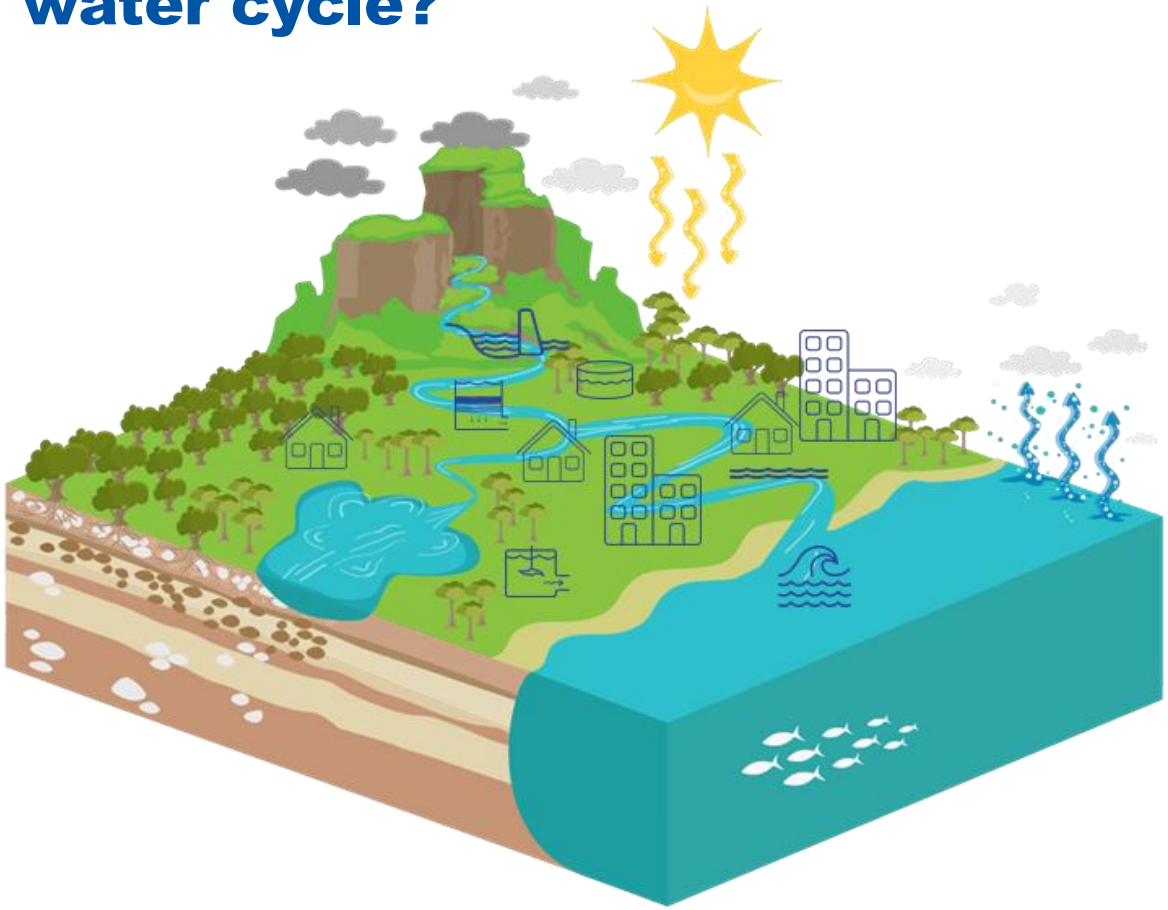
are the living and non-living things found naturally in a space or place.

# Built environments

are places and spaces created or changed by people.

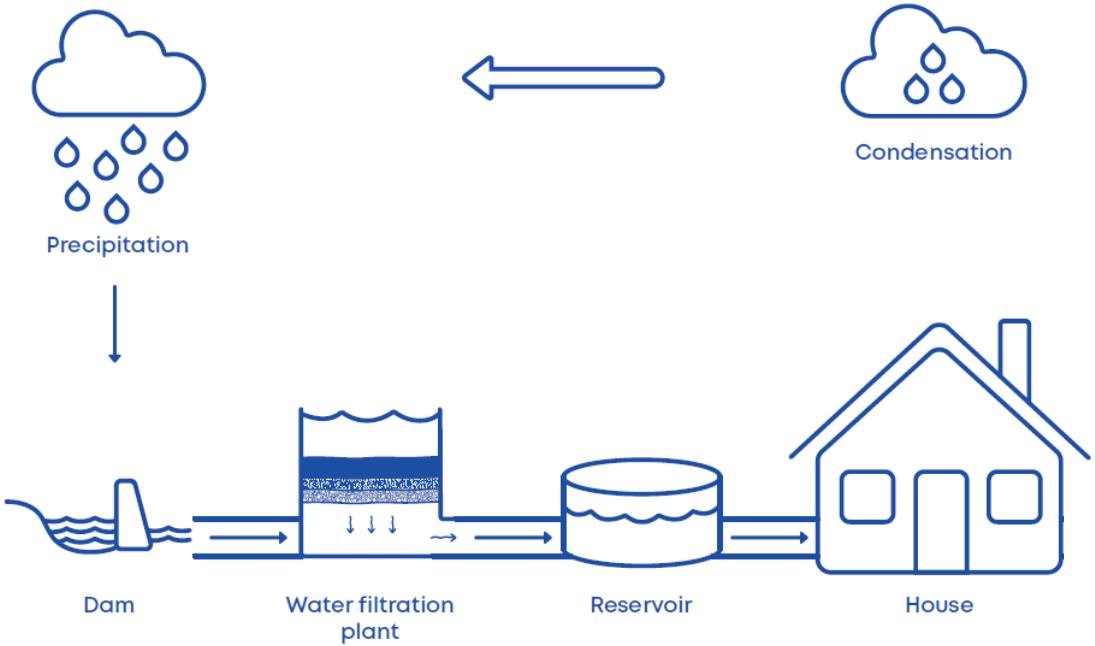

# What is the urban water cycle?

It's when we change and manage the natural water cycle to meet our water needs.



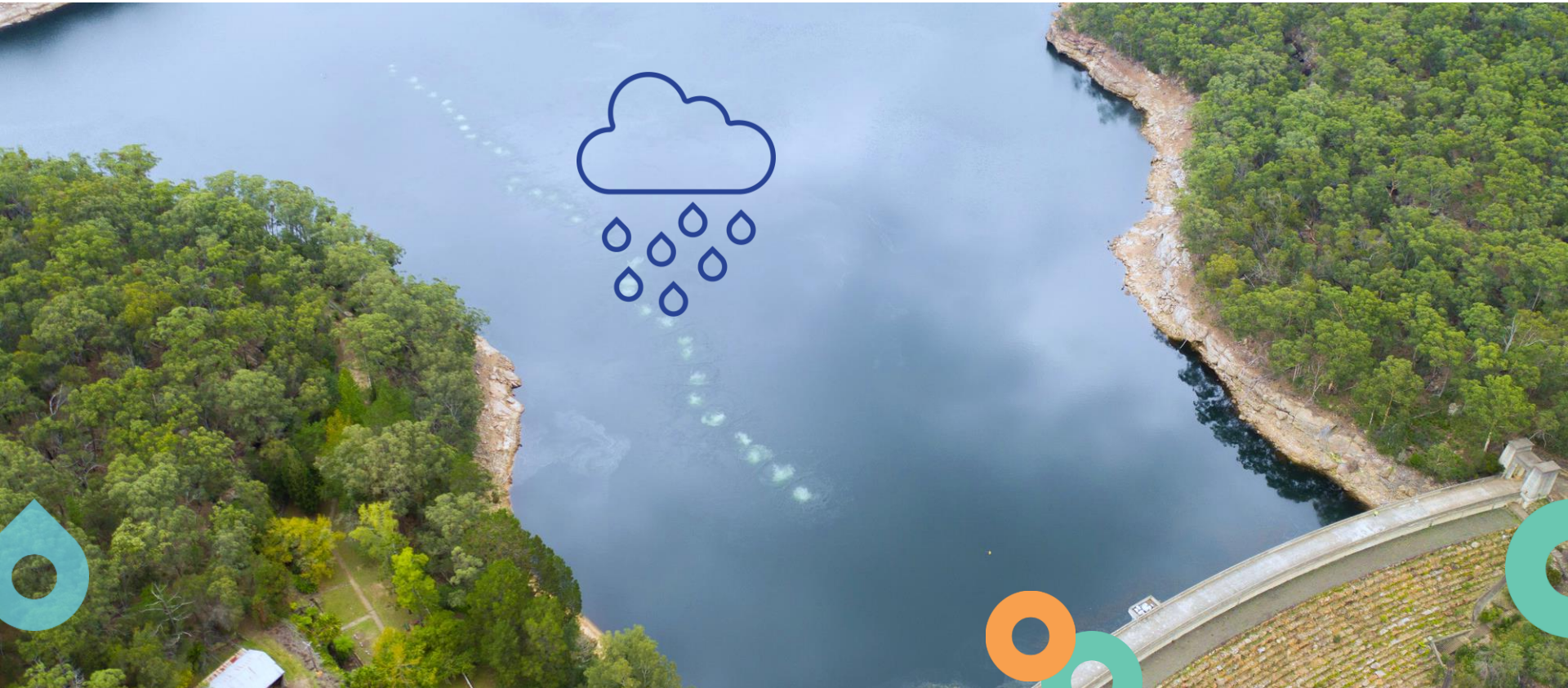
# We change the water cycle so we can...

# Where does our water come from?




# Dams

We build dams to store rainwater.



# Oceans

We can also get water from oceans by removing the salt.

# Other sources of water

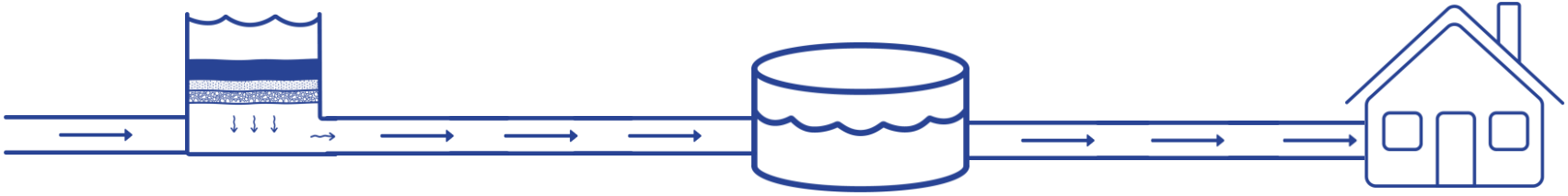
We can also get water from rivers, recycled water, rainwater and groundwater.

rivers

recycled water

other sources

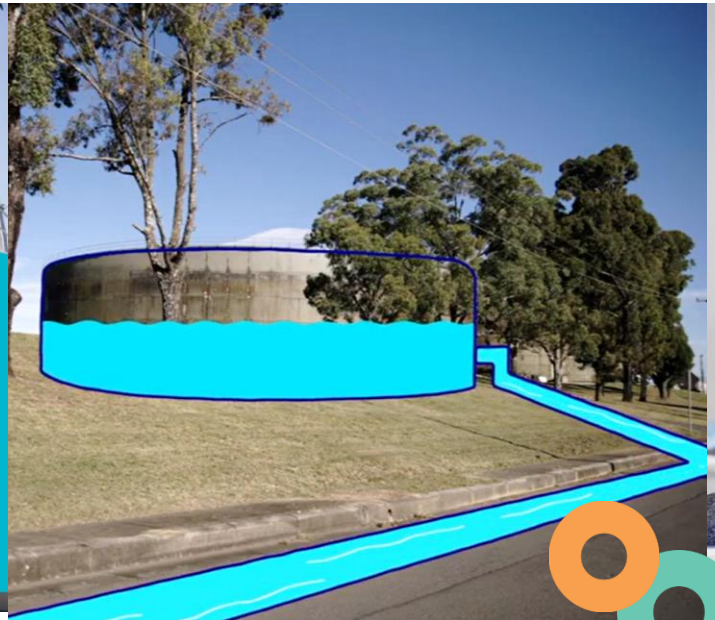
# Is our water cleaned? How does it get to us?



Water filtration plant
cleans and filters all our drinking water

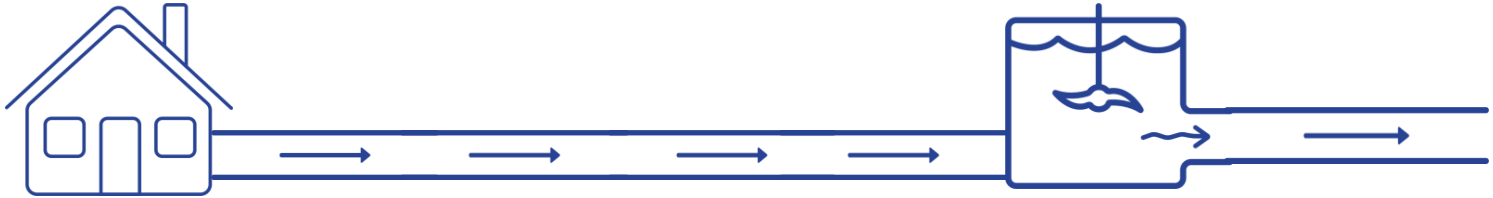
Reservoir stores our clean drinking water

Our homes



# What happens after we use our water? Where does it go?

# Our used water gets cleaned...



Used water goes down drains

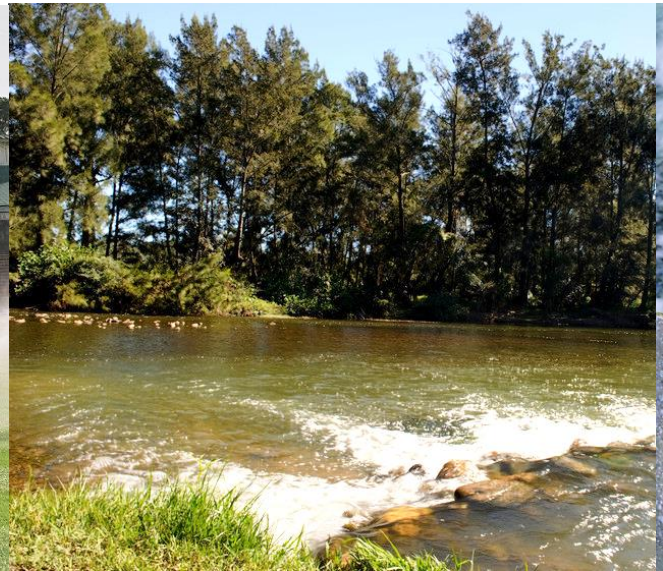
and gets cleaned at a Water recycling plant

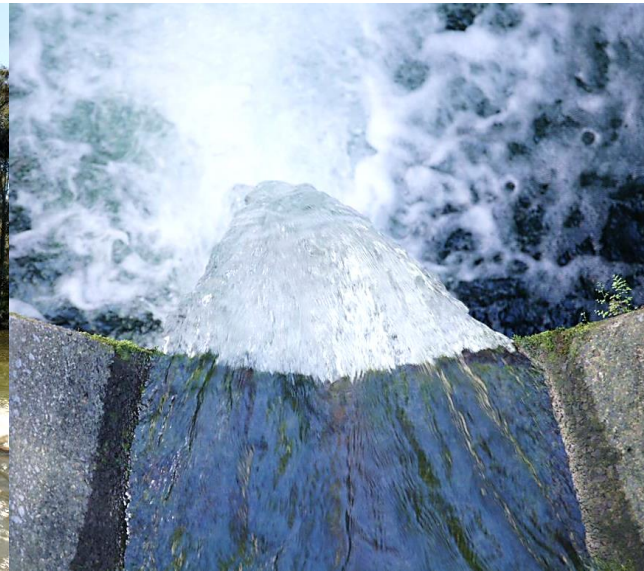
# and can be used again...

recycled water

rivers

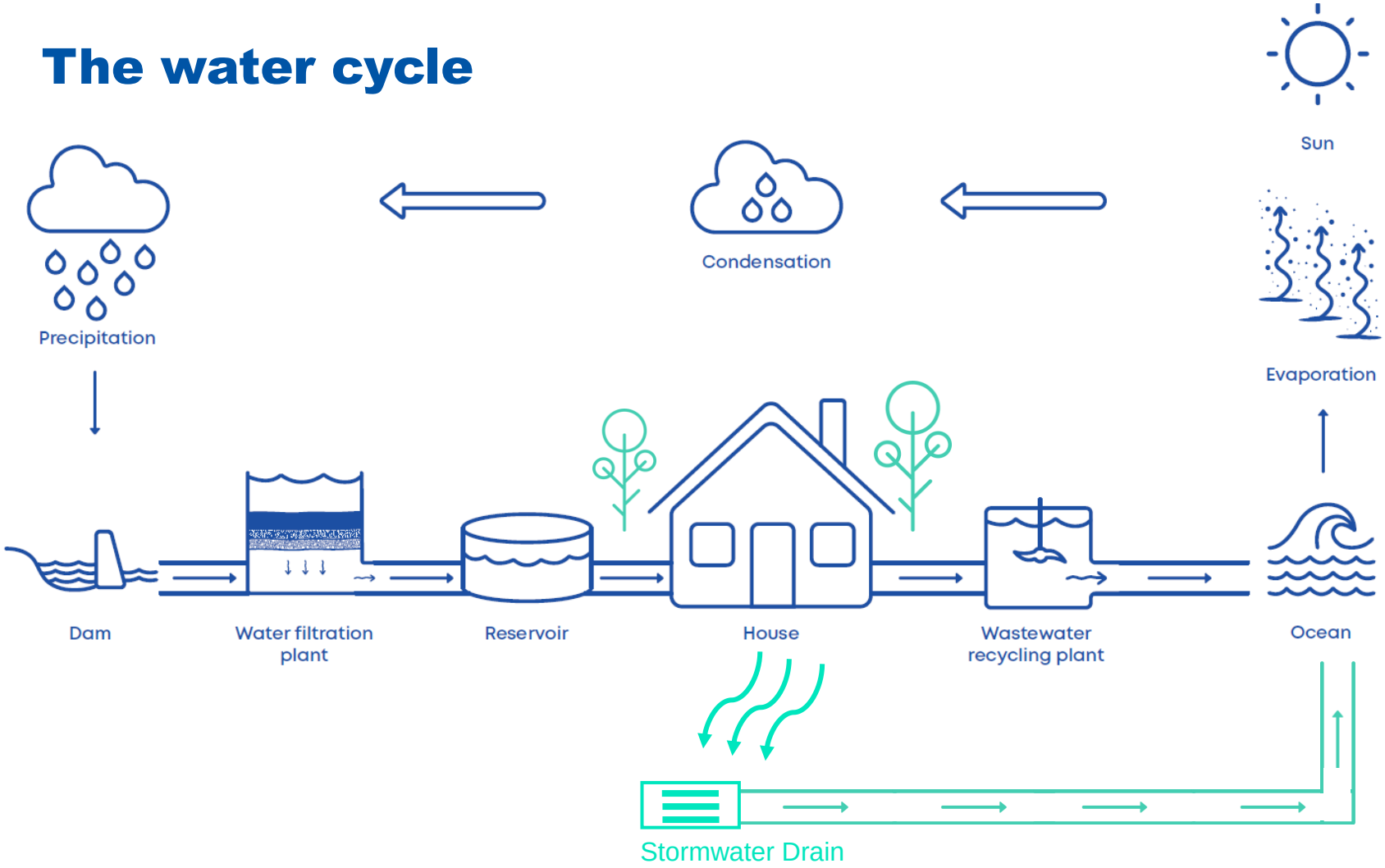
ocean





# Where does water (stormwater) outside our homes go?

# The water cycle



# Lesson 3
# The urban water cycle

Activity 1:  What's my urban water cycle

Sydney WATER

# Where does your water come from?

Check on our Water network website

dams

ocean

rivers

recycled water

other sources

# Build your own water cycle!


# What I learned about water

Write or draw in a droplet.