Age .....

Name .....

Date .....

MY SPHERES™ HANDBOOK



Find out more at **maintenant.org.uk/games**

Get in touch at **games@maintenant.org.uk**

EARTH SYSTEM SCIENCE EDUCATION™

MAINTENANT
Sustaining Now
maintenant.org.uk

What is Sustainable Development?

Pick as many answers as you wish

	YES	NO	MAYBE
Is it protecting animals?	○	○	○
Is it disobeying your parents?	○	○	○
Is it preserving water and energy?	○	○	○
Is it removing stains from your clothes?	○	○	○
Is it eating healthily?	○	○	○
Is it working together?	○	○	○
Is it opening an envelope in secret?	○	○	○
Is it waste recycling?	○	○	○
Is it developing a scientific mindset?	○	○	○

SPHERES

CRYOSPHERE HYDROSPHERE ATMOSPHERE BIOSPHERE MAGNETOSPHERE LITHOSPHERE TECHNOSPHERE

What are the Global Goals?

Global Goals are 17 projects to achieve Sustainable Development worldwide.



Which Global Goal is the most important to you? Put the number in the box:

Who is who?

Can you match the name to these real life personalities?

Rachel Carson ○ ○

Vandana Shiva ○ ○

Wangari Maathai ○ ○

Pierre Rabhi ○ ○

René Dubos ○ ○

Rizwana Hasan ○ ○













Rachel Carson

Pioneer of the ecological movement in the world

My name is Rachel Carson and I was born in 1907 in the USA. Thanks to my mother, I learned about nature and writing and they became my greatest passions. I wrote my first novel at the age of 10.



After completing my biology studies in 1932, I studied marine life and wrote environmental and natural resource books.

Visit maintenant.org.uk to discover the rest of my story …

Your turn to write a story

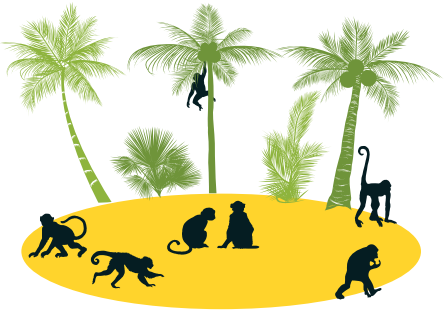
Navdanya or The Nine Seeds

Help Vandana Shiva to reach the 9 lost native seeds



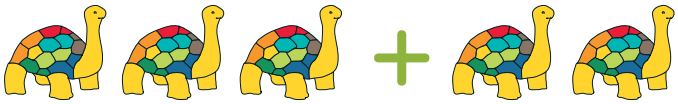


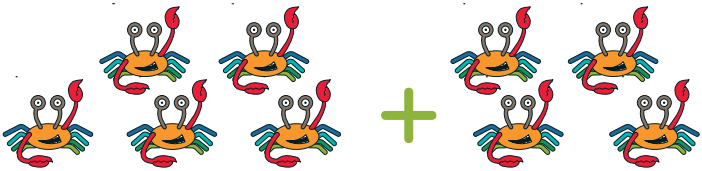
Can you count?



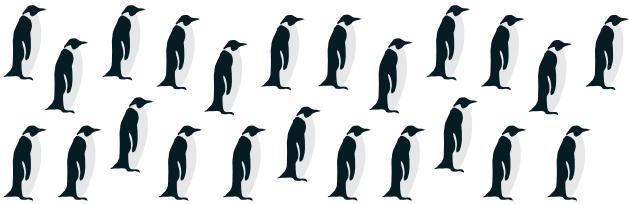
To be a good scientist you need to know your maths

How many monkey can you count on this island?





There were 23 penguins on an ice floe. 9 left the ice floe.



How many penguins remained?

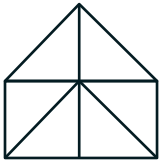
How many triangles?

How many triangles are their in each picture below.
Be careful one triangle can hide in another.
Ask an adult to help you with this geometry task!

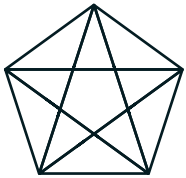
1



2



3

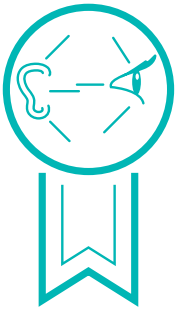


Example:



So, are you a good scientist?

To be a good scientist, knowing your maths is not enough, you also need to:



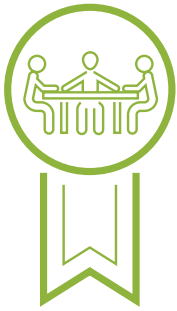
Observe & learn



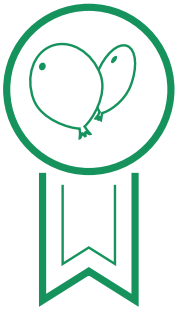
Work safely



Be patient



Collaborate



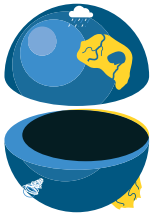
Enjoy!

CRYOSPHERE HYDROSPHERE ATMOSPHERE BIOSPHERE MAGNETOSPHERE LITHOSPHERE TECHNOSPHERE

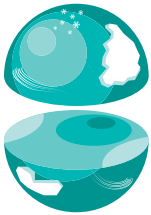
7 SPHERES

These 7 SHPERES help us understand how planet Earth works and evolves.

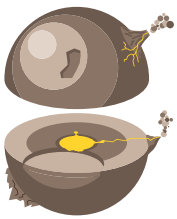
HYDROSPHERE



CRYOSPHERE



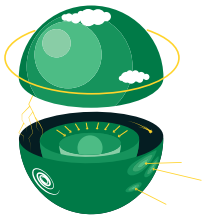
LITHOSPHERE



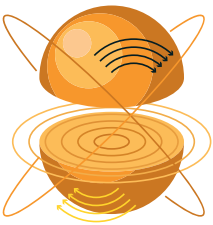
BIOSPHERE



ATMOSPHERE



MAGNETOSPHERE



TECHNOSPHERE



Tick the sphere(s) you have already heard of.

Hydrosphere

The hydrosphere is all the water found on planet Earth: in the air, below and on the surface of the Earth.



Greek "hydōr" means "water"

Which forms can the water take?

Can you guess its 3 states?
Write the answer in the box.



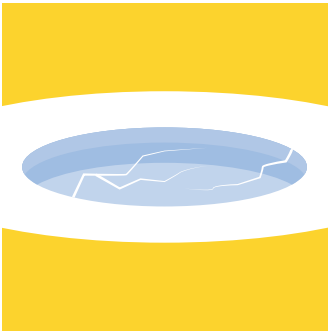


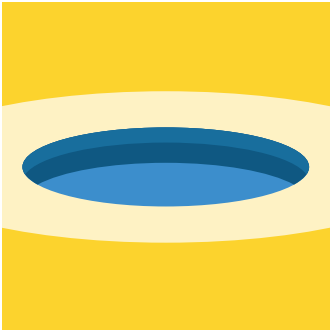


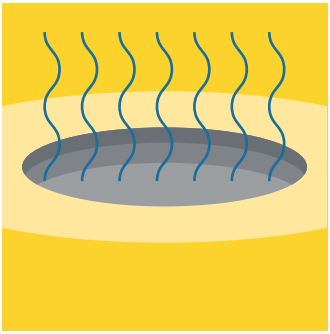
.....

.....

.....

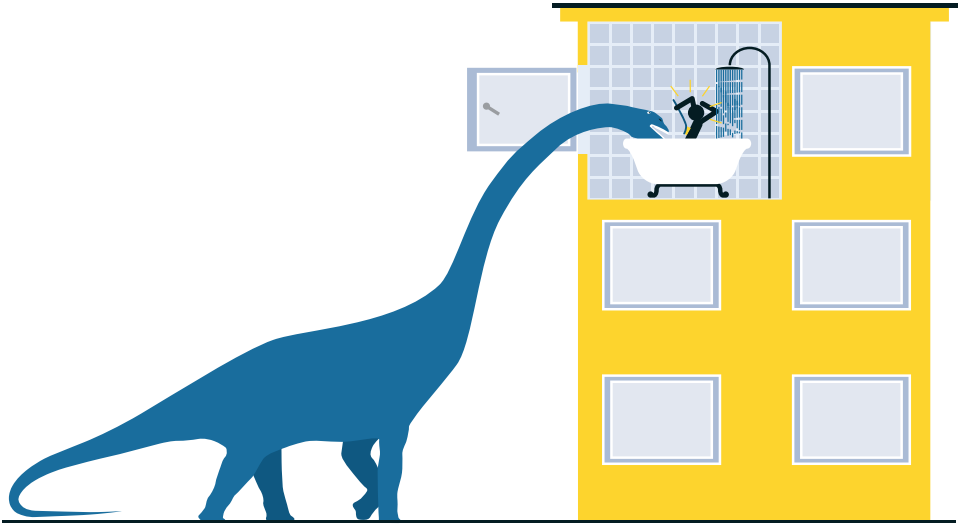






There is no new water

The same water has circulated through our water cycle for billions of years.



This dinosaur may have drank the water you took your shower with this morning.

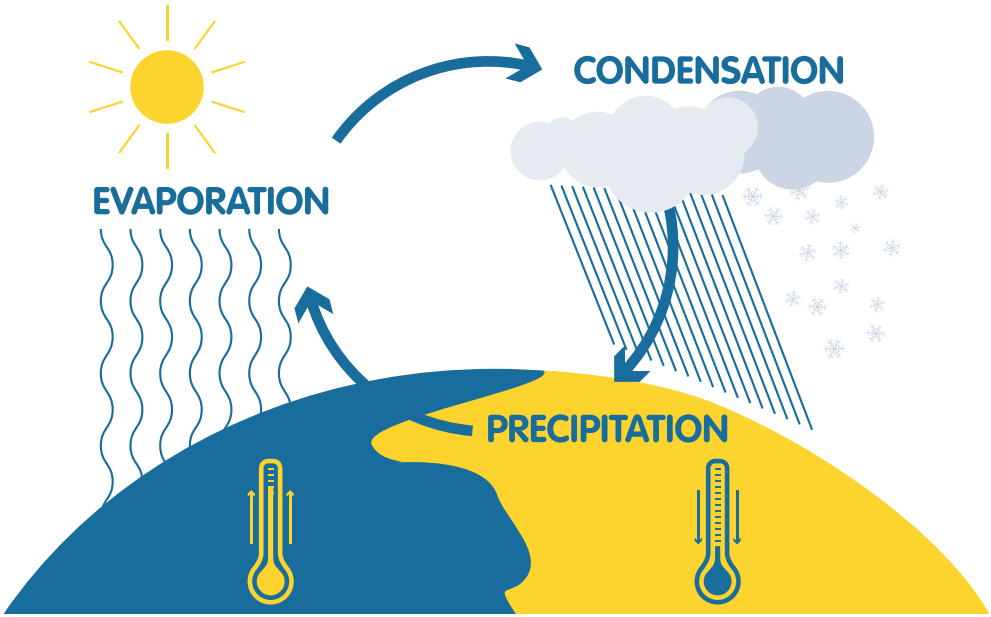
Water is a limited resource

This little ball represents all the water on planet Earth



Water Cycle & Climate

Global Water Cycle influences the Earth's climate and vice versa



Released energy warms the environment

It gets colder as the energy is taken out of the environment

Cryosphere

The Cryosphere represents all the ice on Earth: snow, glaciers, ice caps, ice floes and icebergs.



The Cryosphere is the planet's main stock of cold, which is redistributed through winds and ocean currents. It is one of the main regulators of the Earth's temperature.

Greek "kryos" means "cold" or "ice"

Make a snowflake

Steps:

1

Take 3 pipe cleaners, fold them in half



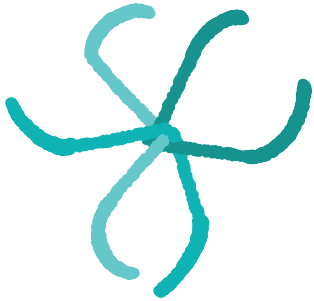
2

Twist them all together in the middle, so you have a star shape



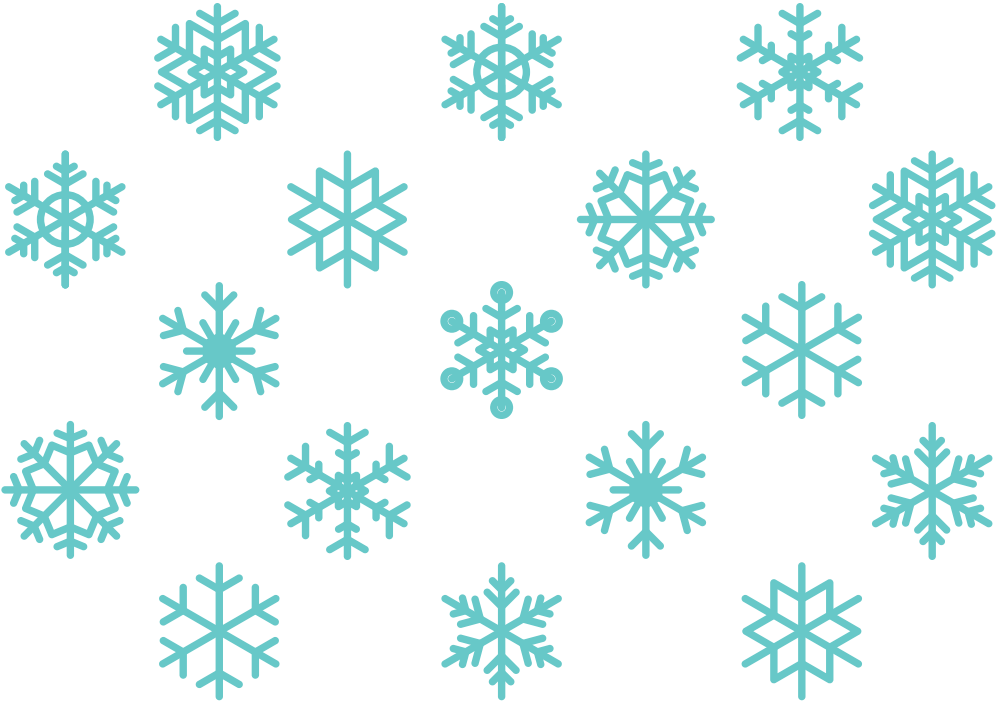
3

Then bend or curl the ends to make your own unique shape



Pair the snowflakes

… and find the odd one



The Earth's Poles

Where are the North Pole and the South Pole?

Arctic Ocean

Ice on an ocean



Antarctic Continent

Ice on land

Ice melting speed experiment 1/2

Steps:

1
Pour warm water in both containers



2
In the first container add blue dye



3
In the second container, add yellow dye + salt



4
Mix well



5
Put one ice cube in each basket



6
Wait for the signal



7
Put the basket on the top of the blue container



8
Drop the ice cube in the yellow container



Ice melting speed experiment 2/2

Results:

Which ice cube is the quickest to melt?



South Pole

North Pole

Artic & Antarctic Fauna

Very rich biomes thanks to the shallow continental plates



The Antarctic Continent is the coldest place on Earth.
There aren't any terrestrial mammals so birds are in peace, especially non flying ones like penguins.

Colouring

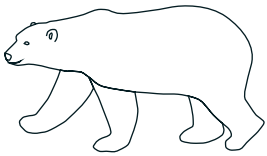
Name then colour the animals below, and mark if they are from the North Pole or the South Pole or both.



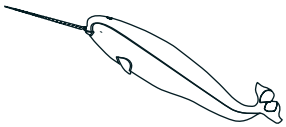
North Pole South Pole



North Pole South Pole



North Pole South Pole



North Pole South Pole



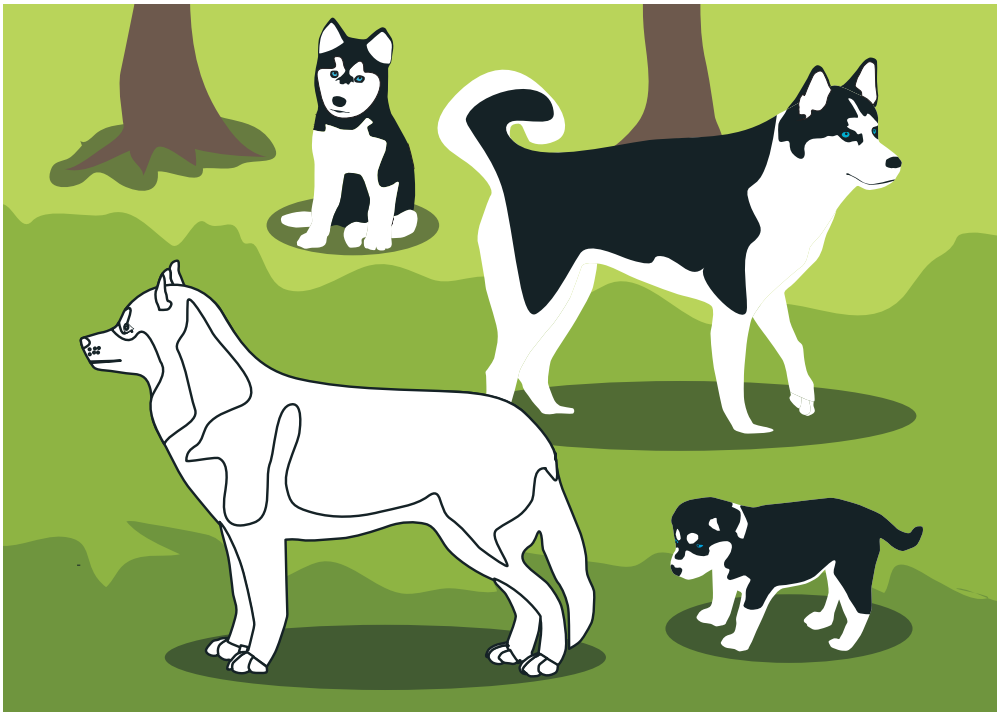
North Pole South Pole



North Pole South Pole

Huskies

Huskies don't bark, they howl.



Colour your own husky if you want to adopt one!

Colour these animals

Scientists follow instructions.
Can you?

Colour six birds



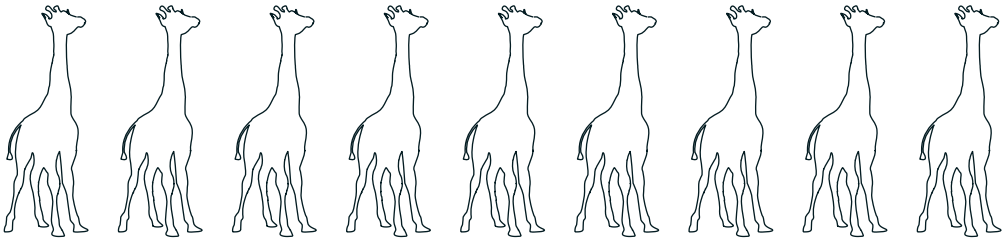
Colour the last five ammonites



Colour every third elephant



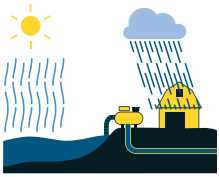
Colour 2nd, 5th and the last giraffe



And you, what do you want to be?

Match the science discipline with its picture.
Then circle the one you prefer.

Glaciology ◯



◯

Astrophysics ◯



◯

Hydrology ◯



◯

Botany ◯



◯

My favourite activity

Rank using numbers your favourite activities with MAINTENANT

- ☐ Playing 7 SPHERES
- ☐ Playing SNAP cards
- ☐ Atmospheres
- ☐ Water is life
- ☐ Making snowflakes
- ☐ Poles discovery

Questions

What did you learn?

What would you like to learn next time?

Have you changed your mind about science?

Do you think you can have an impact

- ◯ on the world
- ◯ in your town
- ◯ in your school
- ◯ at home

Draw what you preferred at MAINTENANT:

7 SPHERES Science certificate

Thank you for being such an Amazing Scientist!
You will be awarded our 7 SPHERES Science Certificate when you fill in the handbook and once we have checked it.



MAINTENANT
Sustaining Now
maintenant.org.uk

MAINTENANT Sustaining Now has for social purpose to raise awareness on Sustainable Development for children and adults, push the whole community to act more responsibly so we can adapt the way in which we live our lives to ensure a more sustainable world now and in the future.

Learn about sustainable development's sciences with our playful educational approach



The Earth is a dynamic planet in constant evolution. The Earth System Science represents our planet as a set of strongly interconnected spheres.

EARTH SYSTEM SCIENCE EDUCATION™

MAINTENANT Sustaining Now adapted this global and multidisciplinary approach to tell children about the sciences of sustainable development such as Earth's climate, renewable energy and biodiversity conservation.

Earth System Science Education™ and logo are trade marks of Maintenant Community Interest Company
7 SPHERES® and logo are trade marks of Maintenant Community Interest Company
DIVERSITY DECK® and logo are trade marks of Maintenant Community Interest Company
© 2020 Maintenant Community Interest Company All rights reserved

CERTIFIED SOCIAL ENTERPRISE • BUSINESS FOR GOOD •

games@maintenant.org.uk
@Maintenant.Sustaining.Now
@Maintenant.Sustaining.Now
@Maintenant_Now

BUSINESS Bromley AWARDS 2019
WINNER
BEST GREEN BUSINESS