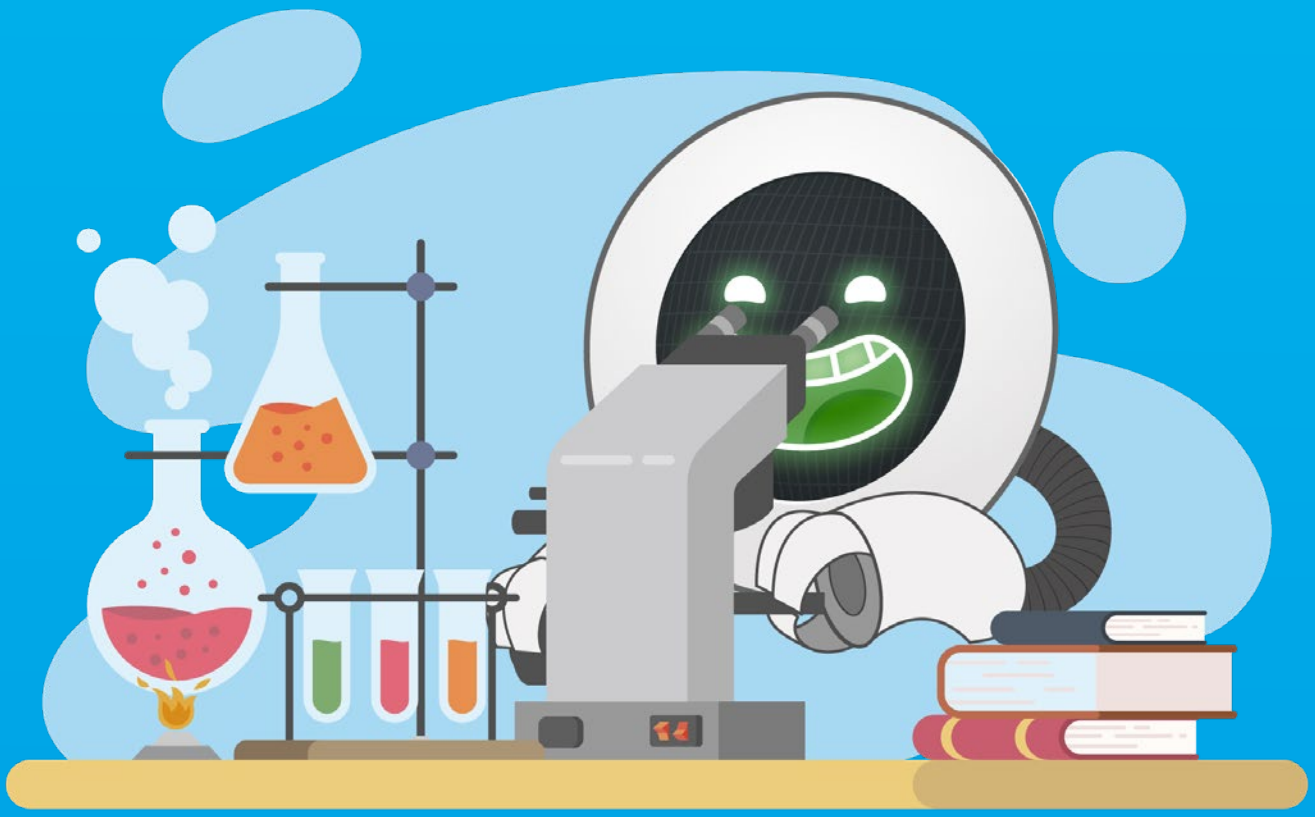
Experiments and workshops: Other activities



SCHOOL CAMPAIGN
AGAINST CLIMATE CHANGE

Mission:
Take climate action

Other activities

In addition to the activities carried out using the Campaign materials, the following activities can be carried out in and out of the classroom to continue promoting the Campaign's sustainable message.

These activities aim to strengthen communication by collaborating in planning specially marked days relating to the environment. In the same way, as the aim is to extend these habits into the students' daily lives and to motivate them to continue recycling, these activities and competitions take on a global dimension by allowing the students to learn to take care of the environment in a fun way.

Primary school, grades 1 and 2

1 2

1. Guessing game

To introduce the theme of renewable energy, there will be a small activity involving riddles, such as:

- I give off heat and my shape is round. At the end of the day I leave quickly westbound (the Sun).
- It whistles without a mouth and without wings it flies. It can push you without hands, but you can't see it with your eyes (the wind).
- Since my first day I have run and forever running I will be. Never stopping night or day until I finally reach the sea (rivers).
- They make noise and they come, they make noise and they go. When they return tomorrow, it will be the same old show (waves).

2. Starting the class

With the help of the teacher, the class will prepare the following cardboard boxes:

- 1. Yellow Box: the students can put soft drinks cans, juice and milk cartons, plastic sweet wrappers, etc. into this box.
- 2. Blue Box: the students can put all the papers and cardboard that cannot be used any more into this box. The Campaign sticker will be put on this box.
- 3. Grey box: the students can put everything else into this box.

The students can be organised into groups, with each one in charge of emptying the boxes into the appropriate container when it is their turn, with the help of the teaching staff.

3. Water at my school

The students should observe the use of water across the school's facilities to then produce a poster on what they have learned.

On a large map of the school, the students should mark the points of water consumption, identifying any possible incidences (dripping taps, leaks, etc.).

The groups should then work on good practices to be implemented at each point in order to use water more efficiently, under the premise of saving water. These tips will be written down by each group on a sheet, which will be placed over each previously identified point of water consumption, so that the plan of the school will become a plan of efficient uses of water.

The tips compiled should be written on a poster so that it is visible next to each point of consumption at the school.

The students can likewise identify points for collecting water. On the same map, they should mark the ideal places for collecting rainwater, and think about what it could be used for.

4. Transforming waste materials into toys

The students should be asked to bring some household packaging waste to class (it should be stressed that the waste must be empty, clean and dry).

With all the packaging waste they bring, they should be encouraged to make their own toys, to remind them how important it is to reuse the waste before throwing it away.

Primary school, grades 3 and 4

1. How the greenhouse effect works

To understand the greenhouse effect, the students should use two medium glass beakers, one large glass beaker, two small alcohol thermometers, a lamp and a bulb over 60 watts. The small thermometers should be placed inside each medium beaker, so that the temperature data is easy to read. The thermometer will record the room temperature. The two beakers should then be placed under the light of a lamp that generates heat. The temperature of the air inside the beakers will begin to increase. One of the beakers should be covered with another larger beaker or container. The larger beaker that covers the small one lets the light through and the small beaker will heat up. However it does not let out the heat that is generated inside it, in the greenhouse effect mode, which is reflected in the thermometer reading.

2. Recycling map

The students will draw up a recycling map of their town or city, indicating collection points for paper, glass, packaging and used button batteries as well as shops that collect second hand books, clothing, household appliances and furniture, etc.

The students will then share their results, and decide where there should new collection points for the different materials.

Students will also be asked to note down all their daily activities and fill in the attached table, keeping note of all the waste generated by each activity.

After this, the students should pool their results, highlighting the amount of waste that we generate in our daily lives:

- What is the most common kind of waste?
- Does all this waste go in the general rubbish bag? Where should this waste be disposed of?
- Do we separate the waste so we can dispose of it in different containers?
- Where does the waste go once we dispose of it?

Time	Activity	Waste materials	What do I do with them?

3. Let's save water

This activity involves making a set of cards which show daily activities that involve using water. For example:

- Washing your hands, leaving the tap running the whole time.
- Washing your hands, turning the tap off when you're not using the water.
- Brushing your teeth, leaving the tap running the whole time.
- Brushing your teeth, turning the tap off when you're not using the water.
- Washing your face, leaving the tap running the whole time.
- Washing your face, turning the tap off when you're not using the water.

Distribute the cards randomly. Each student has to find their partner who does the opposite to them (if someone does the activity with the tap left running, they have to find someone who does the same activity with the tap turned off).

In pairs, the students should place a volume meter under the tap and carry out the activity on the card. Then, they should measure how much water there is in the volume meter. This is the amount of water that can be saved simply by turning off the tap when carrying out these activities.

Each pair should share their results with the class and write a list of good practices to save water. This list can be placed in all school bathrooms and in places in the local area where there are taps.

4. Let's save energy

In pairs, the students should walk around the school and note down all the areas where energy is used. They should also note down if they find lights switched on in empty rooms, or rooms where there is sufficient sunlight.

Next, the students should make stickers with drawings and messages reading "Please turn off the light when you leave", to stick on all the school's light switches.

Primary school, grades 5 and 6

5 6

1. Let's take a look at desertification

To understand the problem of desertification (soil erosion and the loss of vegetation cover) associated with climate change, teachers should carry out an experiment aimed at teaching the students about the importance of taking care of vegetation.

Three large containers with some form of drainage will be needed. The first should contain soil with vegetation. The second should contain soil with a layer of organic material (for example pine bark). The third should only contain soil.

Once the containers are ready, the students should pour water, little by little, in each one.

They should observe that in the first container, the water flows through the vegetation on the surface, draining away quite clear and without drawing away any sediment.

In the second container, the water that drains away will be slightly darker, but it won't contain too much sediment.

In the third container, the water will be cloudy, and it will draw away some of the soil.

2. Melting ice and the consequences

To understand melting ice and its consequences, teachers should attempt to reproduce the melting of floating ice (Arctic model) and that of continental ice (Antarctica, Greenland, mountain glaciers) with a pair of glass cubes, ice, blue-tinted water to simulate the ocean, and a container and rocks to build the Antarctic continent.

The ice cubes are placed floating in one container and sat on top of the rocks in the other. The containers should then be filled to the brim and the students should wait a few minutes to observe the difference between the two models.

The teacher should then guide a class reflection to help the students understand that the melting of floating ice (Arctic model) does not change the sea level, although it can significantly change the climate of many regions due to the impact of this on ocean circulation.

On the other hand, the melting of continental ice (Antarctica, Greenland, mountain glaciers) increases the sea level, subsequently causing the flooding of islands and coastal areas, which will disappear underwater, and especially affecting highly populated areas of the planet.

3. CO_2 and global warming

Place the small thermometer inside each medium beaker, so that the temperature data is easy to read. The thermometer will measure the temperature inside the beaker. The two beakers should then be placed upright under the light of a lamp that generates heat.

The temperature of the air inside the beakers will begin to increase. In a small pot that fits inside one of the

beakers, two small tablespoons of baking soda should be mixed with 40 ml of vinegar. The reaction between these two ingredients will produce CO_2. The mixture should then be decanted into one of the beakers exposed to the light bulb, next to the thermometer. After a few minutes the students will be able to observe that in the beaker containing the baking soda and vinegar mixture the temperature is higher, due to the higher concentration of CO_2.

4. Ocean currents

For this activity, several blue or black ice cubes should be made, adding food colouring or squid ink to the water before putting it in the freezer. You will also need to heat up 40 ml of water and pour this, and a few drops of red food colouring, into a small bottle with a weight at the bottom of it (for example, nuts). Both the ice cubes and the bottle of hot water should be placed in a large, transparent container filled with water.

The bottle filled with warm water should sink to the bottom. However, the ice cubes will remain floating on the surface of the water, in the same container. The students will then be able to observe how the red, warm water in the bottle rises, while the dark, cold water of the melted ice sinks.

Ice cubes are placed floating in one container and sat on top of the rocks in the other. The containers should then be filled to the brim and the students should wait a few minutes to observe the difference between the two models. The teacher should then guide a class reflection to help the students understand that the melting of floating ice (Arctic model) does not change the sea level, although it can significantly change the climate of many regions due to the impact of this on ocean circulation.

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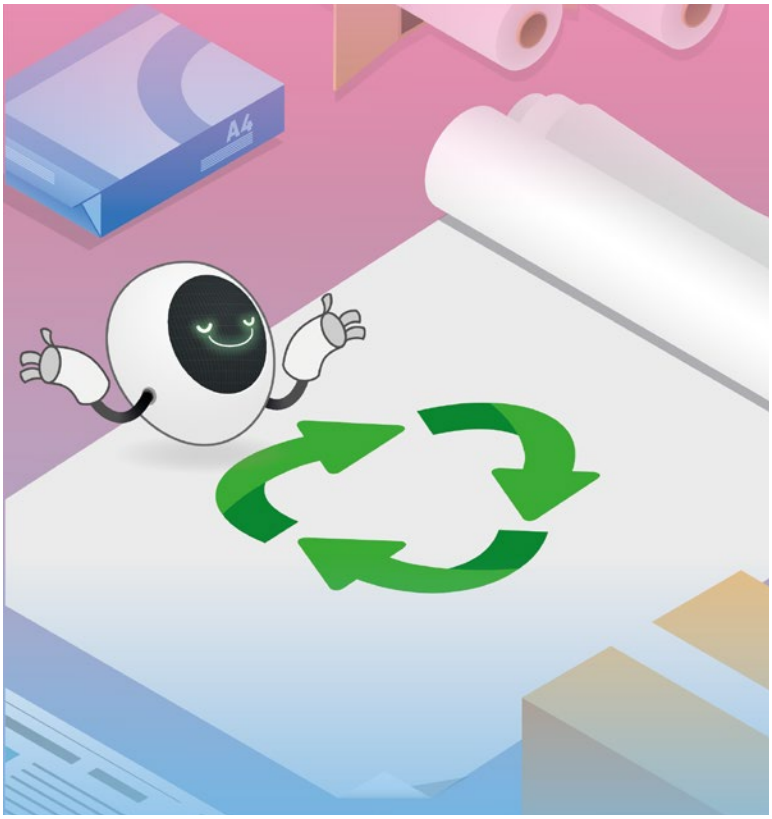

5. Making recycled paper

To start the paper recycling workshop, you will need: newspaper, sheets of paper or cardboard, a large container to hold the paper, a blender, a large spoon and a vegetable drainer, a mesh rack and several pieces of fabric in different sizes on which to eventually place the recycled paper.

The first step is to cut the paper into small pieces. These pieces should be placed in the large container, such as a bucket, and mixed with hot water, at a ratio of about twice as much water to paper.

The paper should then be blended into a thick paste, which is left to rest for a few hours.

The draining rack should then be used to remove excess water. Once the paper has been drained, it will need to be rinsed well under the tap with cold water. The paper paste should then be drained again.

Using a spoon, some of the paste should be spread out on the mesh rack. This process will determine the size of the resulting sheet of recycled paper.

Once it has been spread out, a cloth should be placed over the paper pulp. Then the mesh should be turned over, to release the sheet of paper. The paper pulp then needs to be completely covered with the fabric.

A weight can be placed briefly on top of the fabric to make the recycled paper thinner. Then, once the fabric has absorbed the water, it should be removed and the paper sheet will need to be left to dry for at least a day.

The recycled paper is now ready to be used!

6. Climate memory

To better understand the changes that are taking place in the climate, it is very helpful to consult people's climate memory.

With the help of the teaching staff, the students will establish years and events to talk about with their relatives, neighbours and friends.

The aim is to collect information on the differences in temperatures or meteorological phenomena between the current day and the past that demonstrate climate change.

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