



TEACHER'S SHEET

Presentation

In order to make "preservation of the environment" not only a word, the training must start very early. Through this kit, we propose to you to explore tracks about eco-mobility implying the reasoned use of individual or collective transport. This kit, whose Jules and Lea will be the guides, proposes educational tools usable in the classroom and accompanied by a sheet for the teacher. At the end of each activity, pupil will be able to write with his own words what he remembered and to test his knowledge using a quiz.

Activities

	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5
Tell > Take part in class in a verbal exchange respecting the communication's rules. Use precise words to express oneself.	X	X	X	X	X
Read > Read alone and understand a question, a simple instruction.	X	X	X	X	X
To have a responsible behaviour > Respect the others and rules of the collective life.		X	X		
Humanistic culture > Mobilize its knowledge to give sense to the news.	X	X		X	X
Sciences > Know that energy can take various forms and evolve => Know renewable energies.	X			X	X

Activity 1: Renewable energies

Various natural elements are exploited more and more to produce energies known as "clean". We talk about renewable energies. They can't be exhausted and reject less gas with greenhouse effect.

- > **Teaching objective:** understand which are the natural elements used to produce energy.
- > **Required skills:** to have observed installations like windmills and photovoltaic panels.
- > **Pupils wonder about** the principal natural elements energy producers.
- > **Pupils learn** the name of these energies (photovoltaic, geothermal, etc.).
- > **To reinvest the concepts,** the pupils imagine and draw a solar vehicle for small trips.
- > **Extension:** construction of a solar oven or a windmill in the schoolyard.

Activity 2: Move around the school

According to the place where one lives, circulation is more or less dense. To live downtown or in the countryside includes advantages and disadvantages related to the environment.

- > **Teaching objective:** identify various kinds of pollution (visual, noise and gas emissions).
- > **Required skills:** rather know the concept of gas emission with greenhouse effect than pollution.
- > **Pupils wonder about** advantages and disadvantages of two situations (rural and urban area).
- > **Pupils learn** that beyond the CO2 rejection, a visual and noise pollution can be observed.
- > **To reinvest the concepts,** the pupils must analyze three situations.
- > **Extension:** observe the school's environment, analyze the advantages and disadvantages of the site, carry out measurements of noise (recording) or calculation of the number of vehicles.





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Activity 3: The soft transports

The means of transport without engine (soft transport) have to be privileged for small displacements.

- › **Teaching objective:** Identify different soft transports.
- › **Required skills:** Move in an autonomous way.
- › **Pupils wonder** about the various means of transport and classify them according to two families (with and without engine).
- › **Pupils learn** that using soft transport limits the gas emissions with greenhouse effect.
- › **To reinvest the concepts**, the pupils complete crosswords using the sheet's words.

Horizontaly: 1.Bike, 2.Mobility, 3.Bus, 6.Roller, 8.Sport
Vertically: 2.Move, 4.Skateboard, 5.Greenhouse, 7.Engine, 9.Car.

- › **Extension:** Train to the practice of various displacements with soft transports (circuits in rollerblade/bicycle/child's scooter).

Activity 4: The cycle of water in the factory

Water is essential to life but also to industry. Its treatment allows avoiding any contamination of the medium at the time of its rejection.

- › **Teaching objective:** understand the necessity for the water treatment.
- › **Required skills:** the pupils know the cycle of water treatment.
- › **Pupils wonder** about two types of factory: one rejects dirty water and the second one carries out the treatment of wastewater.
- › **Pupils learn** that the staff of the factories are brought to think of the water treatment before their rejection.
- › **To reinvest the concepts**, the pupils shall draw the pipe circuit bringing water to the various drawn modules (several solutions: a pipe by module starting from the river or grouping, one or more pipes linking the factory to the treatment of wastewater part). Then they shall colour the circuit of water with two colours.
- › **Extension:** visit to a wastewater treatment plant.

Activity 5: The electric car

The electric car is much awaited to compensate for many problems related to the environment. Meanwhile, the purchasers have to pay attention to the label "energy" of their vehicle.

- › **Required skills:** know the different font of energy used for the vehicles.
- › **Pupils wonder** about differences and common points between car using fuel and electric car.
- › **Pupils learn** that the construction of more ecological vehicles is in full development.
- › **To reinvest the concepts**, the pupils have to colour the labels "energy" of the vehicles.
- › **Extension:** work on the labels "energy" of the various electrical appliance of the house.

To go further...

To work about energies at school:

<http://www.lamap.fr>

Rubric « Activités de classe » → « Énergie »

<http://americansolarchallenge.org>

Renault factory in Tangier:

<http://www.renault.com/fr/capeco2/laisser-moins-de-traces/pages/usine-tanger-site-industriel-pilote.aspx>

