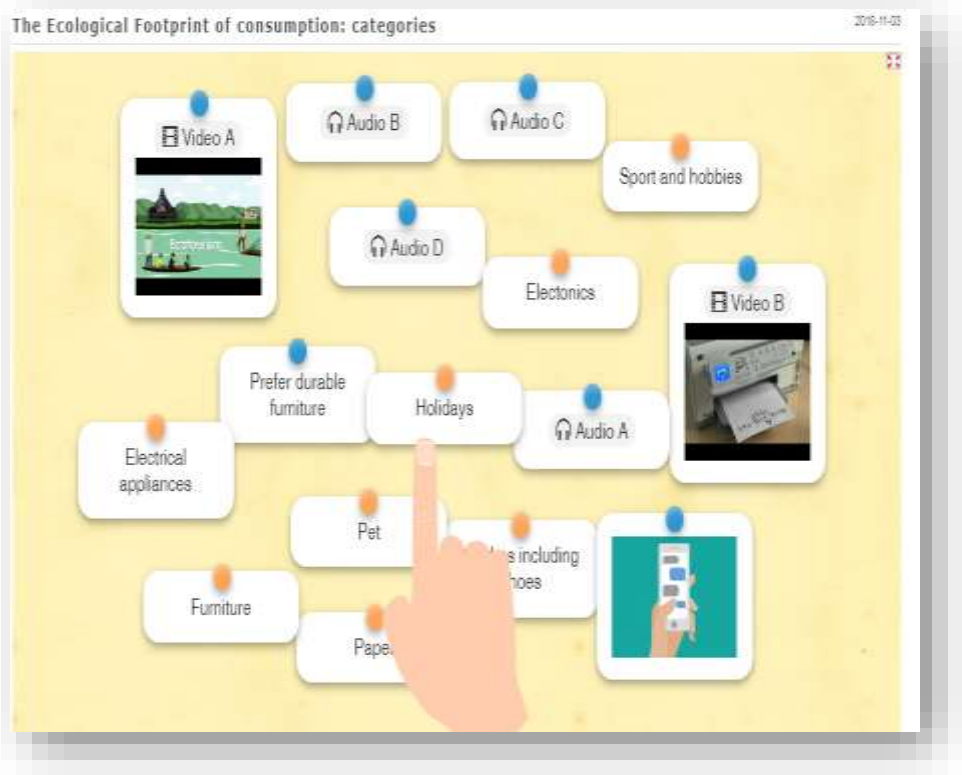
1. Exercises

1.1 The Ecological Footprint of consumption: categories

https://learningapps.org/display?v=pxf6rbc8a18

Read, listen, watch and match the ways of reducing the Ecological Footprint with the categories of consumption.

Duration: 10 - 12 minutes



1.2 Crossword

E-game https://learningapps.org/display?v=pzs28u72v19
Answer the questions to solve the crossword puzzle

1. It measures the Ecological Footprint (two words)
2. Category of consumption
3. A way of reducing the Ecological Footprint of pets
4. Travel without .....
5. Hobby with a small Footprint
6. We reduce the Ecological Footprint of sports by renting .....
7. Accommodation with small Footprint
8. Smartphones: prefer texting than .....
9. Refuse to follow the “fast ..... ”
10. By recycling paper we save many .....

CAMPING
ADOPTION
READING
EQUIPMENT
TREES
AIRPLANES
FASHION
SPEAKING
FURNITURE
e-co foot

2 Homework

2.1 Paper consumption

HOW MUCH PAPER DO WE USE, HOW MUCH FOOTPRINT DOES IT NEED, HOW CAN WE REDUCE IT?

For a ton of fresh paper about 17 medium-sized trees are cut and an Ecological Footprint of 1.8 gha is caused. By reducing our paper consumption, we contribute enormously to the reduction of pollution, to saving forest from extinction and to the reduction of our Ecological Footprint. Let's see how much paper you need in one year. The idea is to identify solutions to reduce our paper consumption!

Build 4 groups: one for „School", one for „Cleaning", one for „Packages" and one for „Reading". Ask at home, count and estimate.

For…		***How many do you need, per year? estimate***			***Any solution to reduce it?***
	category	***pieces***	***kg / piece***	***kg***	
School	A4 size notebook				
	A5 size 48 sheets notebook				
	Medium-sized school book				
	Set of drawing sheets				
	Pack of 500 A4 paper sheets (for printing)				
Sum School		.....	.....	.....	
How many trees are cut?1 t paper = 17 trees	.....				
Cleaning	Kitchen roll				
	Napkins				
	Toilet paper				
	Handkerchiefs				
Sum "Cleaning"		.....	.....	.....	
How many trees are cut? 1 t paper = 17 trees	.....				
Packages	Food				
	Goods				
	Shopping bags				

Sum Packages		.....	.....	.....	
How many trees are cut?1 t paper = 17 trees	.....				
Reading	Newspapers				
	Advertising brochures				
	Letters, books				
Sum Reading		.....	.....	.....	
How many trees are cut?1 t paper = 17 trees	.....				

Sum up of your paper consumption *(School, Cleaning, Packages, Reading)*	**.....trees are cut**			.....kg /year	
Compare with average in AUT				230 kg /year	

Calculate, how big the Ecological Footprint of YOUR paper consumption is. *1 t of paper = 1.8 gha*

Calculate now, how big the Ecological Footprint of the paper consumption of all Austrians is.

EACH SCHOOL YEAR, A HIGH-SCHOOL STUDENT NEEDS AT LEAST:

- *15 school manuals/additional books*
- *10 A4 size notebooks*
- *20 A5 size 48 sheet notebook*
- *1 set of drawing sheets*
- *1 pack of 500 sheets printing paper*

1. ***How many paper products do you need, per category?***
2. ***Weigh one piece of each category with the scale.***
3. ***Multiply.....***
4. ***.....***
5. ***Can you name at least one solution to reduce paper consumption from each category listed above?***
6. ***.....***
7. ***.....***
8. ***.....***

2.2 Energy inspectors

Energy Inspectors

We instruct students to measure the energy consumed in their home in two weeks with the electric metre. We give them a datasheet to record the following measurements

Electricity measurement with waste of energy

		Electricity measurement with waste of energy				Outdoor temperature measurement			
No	**Date**	**Morning 8:00**	**Afternoon 14:00**	**Evening 22:00**	**Consumption of the day (KWh)**	**Morning 8:00**	**Afternoon 14:00**	**Evening 22:00**	**Average temperature (ºC)**

Then, for the next two weeks, they record consumption, avoiding the waste of energy according to the instructions of the following “Energy saving” leaflet *.

Electricity measurement with savings

		Electricity measurement with savings				Outdoor temperature measurement			
No	**Date**	**Morning 8:00**	**Afternoon 14:00**	**Evening 22:00**	**Consumption of the day (KWh)**	**Morning 8:00**	**Afternoon 14:00**	**Evening 22:00**	**Average temperature (ºC)**

Then, calculate the difference and translate it into earned money. Finding how much money is saved in two weeks, you can calculate the annual savings.

Consumption with waste of energy - Consumption with savings=
..... -……=…….KWh for the 2 weeks

Saved energy per week = (KWh for the 2 weeks) / 2 =……

Saved energy per year……. KWh = (Saved energy per week) x (52 weeks)

The price of 1 KWh of electricity is: ..... euros / KWh

In one year…….. euros could be saved = (Saved energy per year) x (price of 1 KWh)

If a roller skate costs 50 euros, with this money we could buy: ..... roller skates!!!

Do you believe that the outdoor temperature affects the energy consumption?

……..

……..

……..

……..

……..

* Leaflet

Energy saving leaflet:

1. We take advantage of the sun in the winter.

1.1 We open the curtains during the day.
1.2 We shut down the shutters in the evening in order not to lose energy.

2. We "hide" from the sun in the summer.

2.1 We lower the awnings during the day to protect from the sun.
2.2 We open the windows at night to create a draught of cool air.

3. We "close the exit door" to heat.

3.1 When the heating is in operation, we don't open the windows.
3.2 We change windows from single pane to double glazed.
3.3 We seal any gaps in the windows and doors.
3.4 We adapt our dressing habits according to the season, even at home. Clothes are the thermal insulation of the body.

4. Proper use of electric lighting.

4.1 We turn off the lights of the school and the house when we don't need them.
4.2 We change the incandescent lamps to fluorescent lamps (economic light bulbs, LED technology).

5. Proper use of electrical appliances.

5.1 We place the electrical appliances correctly in the room (the refrigerator not near a heat source, the fan on the ceiling rather than on the floor).
5.2 We don't leave the refrigerator door open.
5.3 We select economical washing programs on dishwashers.
5.4 We don't leave chargers in the socket and electrical devices on a standby mode.
5.5 We set the air conditioner to 23-24°C.
5.6 We set the thermostat to 20-22°C.