

Pressures on the Earth

Students will use a model to develop an understanding of how their actions and behaviours impact on the Earth.

Context:

Individual action
Experiential learning
Global Issues and resources

Concepts:

Sustainability
Responsibility for action

Level:

Curriculum Level
3 upwards

Timeframe:

One activity

EfS in the NZC

- Students are encouraged to value ecological sustainability
- Key competency:
 - Relating to Others- Students participate and contribute as a group member and realise the results of their collective actions.
 - Participating and Contributing- Students develop an awareness of their own actions on a global scale and a willingness to change behaviour.
 - Thinking- Students critically think about why their action may be sustainable or environmental damaging.

The Learning Context

Students transfer their responses to sustainable actions onto a balloon model of Earth in order to see the benefits of sustainable choices. They then reflect on their own responsibility and willingness to change or maintain their sustainable behaviours. It can be used or adapted as a quick introduction to a variety of contexts in order to develop an understanding of personal responsibility for a sustainable future.

<p>Student learning outcomes</p> <p>Possible learning outcomes that could be achieved through this activity:</p> <ul style="list-style-type: none"> • Students will understand why some actions benefit the environment. • Students will develop awareness of the consequences of their actions. • Students will make choices about their own behaviours in relation to a sustainable future. 	<p>Teaching inquiry</p> <p>Will this strategy support my students to learn this? How will we know?</p>
<p>Suggested teaching and learning sequence</p> <ol style="list-style-type: none"> 1. The teacher organizes groups of four-five students. 2. The teacher gives one student in each group a balloon, who blows it up until it is firm and each balloon is about the same size. Students do not tie a knot in the balloon, but hold it tightly. 3. The teacher explains that this balloon represents the earth. The teacher then asks the students to describe the balloon in terms of it representing the earth, texture, colour, shape. There are many human activities that affect the earth and its resources. The teacher asks students what are some activities? 4. The teacher asks verbally the sustainability action questions. 5. Each member of the group, including the person with the balloon contributes their answer either yes or no. For every environmentally sustainable answer - let a little bit of air out of the balloon - a little bit of stress is taken off the Earth. For other answers - add another puff of air to the balloon. What happens? 	<p>Teaching and learning</p> <p>Learning inquiry</p> <p>What happened during the learning? How did my students respond? How will this learning contribute to a sustainable future? How can this learning make a difference?</p>

Sustainability Action Questions	Add a puff	Let out air
1. Do you walk, bike or travel by bus to school?	No	Yes
2. Do you wrap your school lunch in gladwrap?	Yes	No
3. Do you collect food scraps for the compost or worm bin?	No	Yes
4. Do you grow vegetables at home?	No	Yes
5. Do you turn off a light whenever you leave a room?	No	Yes
6. Do you leave the tap running when you clean your teeth?	Yes	No
7. Do you throw paper away when you have only used one side?	Yes	No
8. Do you turn off the TV at the wall?	No	Yes

Possible Explanations

1. Do you walk, bike or travel by bus to school? **Our reliance on cars that burn fossil fuels is one of the major causes of increased levels of carbon dioxide in the atmosphere and it a major cause of air pollution**
2. Do you wrap your school lunch in gladwrap? **Gladwrap may take up to 40 years to breakdown.**
3. Do you collect food scraps for the compost or worm bin? **Compost and worm farms reduce the amount of waste going to landfill**
4. Do you grow vegetables at home? **Fresh cooked vegetables cook more quickly and are usually more nutritious than frozen or canned. No transport costs.**
5. Do you turn off a light whenever you leave a room? **Turning off lights saves energy and money. The more energy, the more rivers are dammed or more fossil fuel is burned, causing air pollution and increased carbon dioxide emissions**
6. Do you leave the tap running when you clean your teeth? **Turning off the tap saves water and money. The more water used the more water catchment areas needed and the increased cost of treating water.**
7. Do you throw paper away when you have only used one side? **Paper comes from trees. The more used, the more trees we need to cut down. Why is it important to conserve forests?**
8. Do you turn the TV off at the wall? **Turning off appliances saves energy and money. The more energy used, the more rivers are dammed or more fossil fuel is burned, causing air pollution and increased carbon dioxide emissions**

<p>Reflective questions/discussion</p> <ol style="list-style-type: none"> 1. What happened to your 'Earth'? Why did this happen? 2. What could we do to stop that from happening? 3. What is one thing we could do to change our behaviour? 4. Identify the prior knowledge that assisted students to make the choices they made. <p>The Earth is always in a state of change. People can make choices about the way they treat the environment. Sustainable actions counteract the environmentally damaging choices people make.</p> <p>Once the balloon has had stress put on it, it will never go back to its original state or condition. Once certain actions or resources have been used and imposed on the Earth, it will never go back to its original condition e.g. fossil fuels used up.</p>	<p>Focusing inquiry</p> <p>What are my student's needs and abilities?</p> <p>How do I know?</p>
<p>Next steps:</p> <p>Next steps for teacher practice: The classes choose one sustainable action that they want to carry out at school e.g. turn off lights when leaving the room.</p> <p>Students design their own questions related to another sustainable context e.g water.</p> <p>Next steps for student learning: Students choose one sustainable action they want to carry out in their lives.</p>	<p>What is the next focus for our learning?</p>