



# EDUCATION, ENERGY AND THE ENVIRONMENT

## SUSTAINABLE DEVELOPMENT >

Session plan



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In partnership with:

**Howden Group**  
Holdings

# AT A GLANCE

This is the first session in the 'Education, Energy and the Environment' unit. Young people will be introduced to the concepts of sustainable development and climate change, and they will start to consider the negative impact schools and other education settings can have on the environment.

Please note: The emerging nature of this topic means new evidence and information is being released every day. While we strive to keep this content up-to-date, we actively encourage you to incorporate any new and evidenced information that may arise.



## CURRICULUM LINKS

- ✓ SMSC: values and ethics
- ✓ PSHE and citizenship: personal values



## MATERIALS

- ✓ What is sustainable development? and climate change videos
- ✓ Sustainability impacts worksheet
- ✓ Thinking climate worksheet
- ✓ Match up cards
- ✓ Home activity worksheet

# LEARNING OUTCOMES

- ✓ Understand what sustainable development means and how it can help improve lives and the environment
- ✓ Learn about a range of environmental impacts that an education setting can have
- ✓ Consider how everyday activities can be improved to prevent pollution and reduce energy use

# ACTIVITIES

| ACTIVITY   | TIME          | PAGE               |
|--|---------------|--------------------|
| <a href="#">What is sustainable development?</a> | 15-20 minutes | <a href="#">03</a> |
| <a href="#">Negative impacts</a>                 | 20-25 minutes | <a href="#">04</a> |
| <a href="#">Climate change</a>                   | 20-25 minutes | <a href="#">07</a> |
| <a href="#">Match up</a>                         | 10-15 minutes | <a href="#">09</a> |
| <a href="#">Wrap up</a>                          | 10 minutes    | <a href="#">10</a> |

## WHO CREATED THIS SESSION PLAN?

This session plan was co-created with Justine Oakes. Justine Oakes CEnv, MIEEnvSc, MIEMA is an environmental professional with over 25 years experience in both the public and private sector. She is currently the Sustainability Manager at the University of Suffolk and Business and Research lead for the Suffolk Sustainability Institute. Working in partnership with local and national sustainability initiatives, the University of Suffolk is a transformational university, absorbing the best of UK University traditions and aligning them with a modern world of employment and entrepreneurship.

# WHAT IS SUSTAINABLE DEVELOPMENT? >



## TIME REQUIRED

15-20 minutes



## MATERIALS

- ✓ What is sustainable development? video
- ✓ Computer (to show video)
- ✓ Downloadable copy of the United Nations Sustainable Development Goals from <https://www.globalgoals.org/>

## ACTIVITY STEPS >

1. Introduce this new topic to the young people by explaining that you will be exploring sustainability and how your setting can be more sustainable in the next few sessions. Ask them what 'sustainability' and 'being sustainable' mean. You may want to look at or teach the Sustainability and Ethics unit before this one to give young people a grounding in the topic.
2. Explain to the learners that the first thing they will learn about is sustainable development. Before playing the video, explain that the United Nations (UN) is an international organisation made up of almost every country on Earth. Its aim is to ensure peace and better lives for people, and protect the environment.
3. Tell the learners that they will now learn about sustainable development and the UN's involvement in trying to get the world to be more sustainable. Play the short animated video titled 'What is sustainable development?'
4. After watching the video, hand out the UN SDGs downloadable sheet so each young person can see the SDGs as a point of reference. Now, have a group discussion, you could ask:

- ✓ Are you surprised at how many things sustainable development covers?
- ✓ Is there a particular goal that interests you? Why?



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# NEGATIVE IMPACTS



## TIME REQUIRED

20-25 minutes



## MATERIALS

- ✓ Sustainability impacts worksheet

# ACTIVITY STEPS

1. Learners will be introduced to three factors covered by the SDGs that can create negative impacts within an educational setting. Short explanatory descriptions are available to you under the heading 'Environmental impact' in each table below and questions are provided in the final row to help stimulate group discussion.
2. Go through each factor in turn and provide learners with their version of the tables. These will not include the explanatory descriptions but will be a helpful aid for discussion. You could choose not to go through each factor, but ensure you discuss travel and commuting as this knowledge will be needed for later activities.

|                                 |  |
|---------------------------------|--|
| <b>FACTOR</b>                   | Travel and commuting   |
| <b>RELATED SDGs</b>             | 3. Good health and wellbeing; 7. Affordable and clean energy; 8. Decent work and economic growth; 11. Sustainable cities and communities; 13. Climate action   |
| <b>ENVIRONMENTAL IMPACT</b>     | <ul style="list-style-type: none"> <li>• Being able to travel from your home to your workplace or educational setting is an important part of your daily activity.</li> <li>• As our population grows, more people choose to live in cities and towns, or travel in from the surrounding countryside to access the facilities they need. This causes:               <ul style="list-style-type: none"> <li>• Congestion (traffic jams) and poor air quality at street level from vehicle exhausts and carbon dioxide (CO<sub>2</sub>).</li> <li>• Global pollution problems in the atmosphere, like global warming, which in turn causes climate change.</li> <li>• A rise in accidents</li> <li>• The loss of green spaces for roads and parking facilities.</li> </ul> </li> </ul> |
| <b>MORE SUSTAINABLE OPTIONS</b> | <p>Q: What other types of commuter travel, other than not travelling alone in a car can you think of that would be sustainable?</p> <p>Suggested answers: Walking, cycling, taking the bus, car sharing, skateboarding riding a scooter, etc.</p> <p>Q: How does sustainable commuting and travel help meet the SDGs above and improve the environment?</p> <p>Suggested answers: Improved health through exercise, connects peoplesocially, reduces the number of traffic accidents, reduces traffic jams and congestion, improves air quality, reduces CO<sub>2</sub> emissions, increases attractiveness and quality of cities and towns, etc.</p>  |



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|                                 |   |
|---------------------------------|---|
| <b>FACTOR</b>                   | Heating, electricity and lighting   |
| <b>RELATED SDGs</b>             | 3. Good health and wellbeing; 4. Quality education; 7. Affordable and clean energy; 9. Industry, innovation and infrastructure; 11. Sustainable cities and communities; 12. Responsible consumption and production 13. Climate action   |
| <b>ENVIRONMENTAL IMPACT</b>     | <ul style="list-style-type: none"> <li>• Buildings are responsible for approximately 40% of the total world annual energy consumption. Most of this energy is used to power, light, heat and cool the building.</li> <li>• Many of the energy sources we depend on, like coal and natural gas, can't be replaced; once we have used them up, they are gone forever.</li> <li>• Another problem is that most forms of energy cause pollution and it is a big contributor to climate change.</li> <li>• All of the energy a building uses adds up and much of it is wasted by old and inefficient heating and electrical equipment and by not using it wisely.</li> </ul>   |
| <b>MORE SUSTAINABLE OPTIONS</b> | <ul style="list-style-type: none"> <li>• Explain to the learners that when people try to limit the amount of energy that they use, it is called energy efficiency.</li> <li>• Sustainable buildings try to reduce the amount of energy that is used within the building by using some sort of renewable energy, like solar panels that create electricity from the sun, or will have extra layers of insulation in the walls and ceilings, a bit like putting a blanket around the building to help keep the heat in.</li> <li>• Another approach is to replace halogen light bulbs with modern LED light bulbs that only use a very small amount of energy to produce the same amount of light.</li> </ul> <p>Q: What other sorts of things do you think people could do to improve energy efficiency in a building?</p> <p>Suggested answers: Turning heating down or off on warmer days, switching off lights, using renewable energy, e.g. wind, solar, hydrogen, unplugging non-essential electrical equipment when not in use, insulating pipes and boilers, making sure all equipment is well maintained, repairing windows and external doors to stop warmth leaking out.</p> |

|                             |  |
|-----------------------------|--|
| <b>FACTOR</b>               | Catering management and food waste   |
| <b>RELATED SDGs</b>         | 1. No poverty; 2. Zero hunger; 3. Good health and wellbeing; 6. Clean water and sanitation; 7. Affordable and clean energy; 12. Responsible consumption and production; 13. Climate action; 15. Life on land   |
| <b>ENVIRONMENTAL IMPACT</b> | <ul style="list-style-type: none"> <li>• What we grow, eat and throw away has an impact on the environment, our health and wellbeing, farm animals' quality of life and the natural world.</li> <li>• Intensive farming is currently a contributor to climate change, but it is also vulnerable to the damage caused by climate change. See the bottom of page 8 for more information about this.</li> <li>• The increased consumption of meat and foods high in sugar, salt and saturated fat is linked to the rise in a number of diseases.</li> <li>• Educational settings have to try to guess what people would like to eat throughout the week and plan a menu that meets everyone's preferences and cultural needs.</li> <li>• It's important that the food is cooked and stored properly so that people don't become ill.</li> <li>• All that cooking, refrigeration and extraction of cooking smells uses energy, with waste from packaging and uneaten food being produced at the end of every day.</li> <li>• One third of all food produced for human consumption is lost or wasted. Imagine you bought three loaves of bread and when you got home, put one of them straight in the bin!</li> </ul> |



# CLIMATE CHANGE >



## TIME REQUIRED

20-25 minutes



## MATERIALS

- ✓ Climate change video
- ✓ Computer (to show video)
- ✓ Thinking climate worksheet (optional)

# ACTIVITY STEPS >

1. During the discussions in the previous activity, you will have noticed that climate change is a recurring issue when trying to address the challenge of sustainability. Watch the video that explains climate change.
2. Explain to the learners that energy use that is associated with travel (electricity, heating and pollution), is one of the most important things to combat to prevent climate change.

## OPTIONAL EXTENSION

Hand out the 'Thinking climate' worksheet. In pairs or groups, young people should write down their ideas in response to the questions about climate change. Below are some potential answers the young people may come up with or that you can use to help generate discussion.

| DISCUSSION QUESTION  | EXAMPLE ANSWERS  |
|--|--|
| Global warming and climate change was scientifically proven by 1988. Why do you think it took so long for most of the scientists to agree? | Scientists need a lot of evidence to prove that something is true.<br>Science equipment has got better over the last 30 years.   |
| How important are governments and legislation in making sure we reverse climate change?  | Dealing with climate change means we will all have to change the way that we live our lives.<br>Governments can provide money for business to help them improve the impacts they have on the climate.<br>Governments can also make energy bills more expensive, so that business put more measures in place to reduce the amount energy they use.<br>Sometimes individuals and business will not change behaviour unless the law requires them to. |



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| DISCUSSION QUESTION                                    | EXAMPLE ANSWERS   |
|--|---|
| What impact is climate change having around the world? | <p>Extreme weather events causing floods, fires, hurricanes and land loss have an effect on people and wildlife.</p> <p>People having to move homes and live somewhere else.</p> <p>Pollution to local air traffic, making it hard to breathe.</p> <p>If it gets too hot or too cold, life on earth will become too difficult for humans and wildlife to survive.</p> |
| How are humans causing climate change?                 | <p>Using diesel and petrol engines</p> <p>Generating electricity from coal and gas</p> <p>Cutting forests and trees and clearing natural habitats</p> <p>Rotting waste</p> <p>Mining for resources</p> <p>Burning resources and waste</p>   |
| What can we do to stop it?                             | <p>Use renewable energy</p> <p>Use transport that is powered by electricity</p> <p>Plant more trees</p> <p>Walk and cycle, share lifts, or take a bus/train</p> <p>Save energy by switching off equipment, lights or heating when not needed</p> <p>Waste less resources</p>  |

### DISCUSSION TIP

Learners may wish to discuss the impact of dietary choices on climate change, such as eating less or no meat, or moving to a plant-based diet. These personal choices can be further explored (if the learners are interested) by using the BBC's Climate Change Food Calculator here: <https://www.bbc.co.uk/news/science-environment-46459714>.

This discussion may also lead to conversations about the impact of farming. Click [here](#) to read about the environmental impact of agriculture, and [here](#) to read about how UK farmers are trying to tackle climate change.

# MATCH UP



## TIME REQUIRED

10-15 minutes



## MATERIALS

✓ Match up activity cards

# ACTIVITY STEPS

1. Thinking about the topic areas in the last activity, this match up activity seeks to check and consolidate learners' understanding.
2. On three separate tables, place each of the A4 printed images for:
  - Travel and commuting
  - Heating, electricity and lighting
  - Kitchen: Catering management and food waste
3. Four sets of the cards should be downloaded and cut out ahead of the session. You should now have a pack of cards, on which you will see different images for a range of sustainability challenges and solutions. The cards should be shuffled and the learners split into 4 groups. Deal the cards out evenly between the groups.
4. Groups should then be invited to place each of the cards on the table under the image that they think they relate to. The winners will be the first group to have placed all their cards on the tables correctly.

## CORRECT RESPONSES

Travel and Commuting: Walking, climate change, good health, cycling, traffic jam, bus, air pollution

Heating and Electricity: Computer, broken window, solar panels, switching off a light, old boiler, lightbulb, climate change, overhead projector

Kitchen: Good health, healthy food, leaky tap, ridge, waste packaging, waste food, planned menu



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# WRAP UP >



## TIME REQUIRED

10 minutes



## MATERIALS

- ✓ Home activity worksheet

# ACTIVITY STEPS >

1. Discuss with the learners what they have learnt about today: Was there anything in particular that they were surprised by/interested in?
2. Hand out the home activity worksheet. Between now and the next session, learners will be asked to make a note on their sheets of any good examples of energy efficiency they observe in their community. For example:
  - Have they seen any solar panels on roofs or are there electric car charging bays at their local supermarket?
  - Have they been into a room where the lights come on automatically?
  - What about nature? Are there any tree planting schemes going on around them, or areas that have been pedestrianised with planting added?

## FEEDBACK

If you would like to share your feedback on this session plan or the entire unit, please complete our survey [here](#).



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