

The Butterfly Effect

Carbon

Age	We are learning	Resources
5-6	Exploring climate through Goldilocks and the Three Bears.	Digital Matching Sheet.
6-7	Clean air vs dirty air sensory activity.	Carbon Clean and Dirty Air PowerPoint. Coloured crayons, black paint, paper, brushes.
7-8	Travel survey.	Recycled paper and pencils to complete survey.
8-9	Creating a carbon footprint wall display.	Carbon Footprint Activity Sheet.
9-10	Exploring Blue Carbon.	Computers for research, paper and pens.
10-11	Looking at alternatives to 5-minute car journeys using a Google Maps challenge.	5 Minute Carbon Challenge Activity Sheet, Google Maps, pens/pencils and recycled paper to record answers or copy of the activity sheet.
11-12	Meal planning to reduce our carbon footprint.	Carbon Impact Graphic.

Teachers Notes:

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We are learning

That things can be too hot, too cold or just right.

We can now...

Describe why it is best if things are not too hot, not too cold, just right.



Activity

Read Goldilocks and the Three Bears. Discuss with the class how they, like all living things, like things a certain way. Touch on the subject that the world needs to be not too hot or cold for things to live and that it's important to keep the planet 'just right' for all living things.

Digital / At Home Version

Completed in the same way as in class, with the teacher reading the text.

Additional Challenge

Think of other adjectives for 'Hot', 'Cold', 'Hard', 'Soft', etc.

Additional Support

Ask pupils to work in pairs for support.

Resources

Goldilocks and the Three Bears book or search for the story online.

Suggested Follow-On Activities

Think of what 'Just Right' means for different animals. What do they like to eat, where do they like to sleep and how warm do they like it to be? Draw pictures to show your thinking OR retell the story from the point of view of the bears. How did they feel when someone destroyed things in their home?

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We are learning

About clean air and dirty air.

We can now...

Describe what we see, feel, smell, touch and taste when the air around us is dirty.

Activity

Discuss how it feels to breathe clean air or dirty air. Where might you find clean air or dirty air? Do you know why air becomes dirty? Play the PowerPoint to the young people showing forest landscapes gradually changing into a smoggy city. Ask the children how it might feel to be there? What can they see in the pictures? Ask the children to explain how it looks and feels to be in each location. How is their own environment different? Create a picture using lots of bright, beautiful colours of crayon. Now, use a wash of watered down black paint over the top to show what happens when the air becomes polluted.

Digital / At Home Version

Complete the activity in the same way.

Additional Challenge

Use an air quality map to explore different air quality around the world.

Additional Support

List some adjectives on the board or create a cheat sheet to help pupils with their descriptions.

Resources

Clean and Dirty Air PowerPoint, black paint, coloured crayons, paper, brushes.



Suggested Follow-On Activities

Read The Lorax by Dr Seuss. Discuss how and why the Lorax's home became more and more polluted and the animals needed to leave.

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We are learning

That there are different forms of travel and some are better for the environment than others.

We can now...

Discover some of the ways that we can travel to and from school.



Activity

Discuss the different ways that we move and travel. Explain that, when we get from one place to another using our bodies, it's called 'Active Travel'. This can be cycling, running, walking, using a scooter etc. Conduct a survey throughout the school to find out how people travel to school. What are some of the reasons people may need to use a car rather than active travel? Create a graph as a wall display. Can you think of any ways to encourage more people to use active travel to get to and from school?

Digital / At Home Version

Complete the activity using the school's website, email or messaging system.

Additional Challenge

Use tally marks to calculate the data.

Additional Support

Use appropriate peer support.

Resources

Recycled paper and pencils to complete survey if not completing online.

Suggested Follow-On Activities

Ask others to participate in the survey on the school website or social media page. Suggest ways to safely increase the active travel in your community.

Use the hashtag #STEAMatJacobs to promote your findings and suggestions.

Have a 'Beat my Steps' challenge against your teacher. Who can get the most steps in a week!

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We are learning

About our own carbon footprint.

We can now...

Identify the factors that contribute to our own carbon footprint.

Activity

Class discussion about footprints. What are footprints? They are an imprint that show where we have been. Wherever we go we leave an impact on the world around us. Our carbon footprint is the amount of carbon we use, and this affects the world we leave behind. Draw around your foot on a large piece of paper. On the paper write the ways you use carbon using the Carbon Impact Information Sheet as a guide. Use strategies such as varying sizes of writing or traffic light colours to show how regularly you do something, or, how significant the carbon impact may be. Compare your footprint with others in your class. Create a display showing the carbon footprint of the class.

Digital / At Home Version

Create a digital version of your 'Carbon Footprint' in Microsoft Word.

Additional Challenge

Add images to illustrate each element of your carbon footprint OR calculate the impact each element has using online calculators.

Additional Support

Use images instead of text.

Resources

Carbon Footprint Activity Sheet. (Can be completed as a whole-class using the board or using a digital device.)



Suggested Follow-On Activities

Put your footprints up on the wall around the school to remind pupils of their own carbon footprints. Explore some of the ways the school contributes to carbon emissions and research how to reduce these.

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We are learning

That plants both on land and in water, can absorb carbon.

We can now...

About the value of blue carbon as a resource in tackling climate change.

Activity

Explore the idea that different things either produce or reduce the carbon in our atmosphere. While humans produce carbon and have a 'Carbon Footprint', trees and plants absorb carbon and remove it from the Atmosphere. However, trees and other plants on land aren't the only living things that absorb carbon. Research 'Blue Carbon' to find out more about why the plants in our oceans and other water can also help remove carbon from our atmosphere. Design a poster raising awareness. Share your posters online using the hashtag #STEAMatJacobs.

Digital / At Home Version

Complete the activity in the same way.

Additional Challenge

Work out the total amount of carbon stored by all the trees in your garden, playground or local area by completing this calculation for each one and adding the answers together!

Additional Support

Use appropriate peer support.

Resources

Computers for research. Paper and pens.

Suggested Follow-On Activities

Discuss what can be done by individuals, organisations and government to protect blue carbon and maximise its impact in protecting our environment.

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We are learning

That the first 5 minutes of a car journey are the most environmentally damaging.

We can now...

Come up with strategies to avoid taking the car for shorter journeys.

Activity

Discuss the idea that you can make a significant difference to your carbon footprint by cutting out car journeys that last 5 minutes or less. What barriers, apart from distance, might prevent you from choosing to make shorter journeys by foot or using another form of Active Travel? Using Google Maps, either in groups or as a class, complete the 5 Minute Carbon Challenge Activity sheet.

Digital / At Home Version

Complete the activity in the same way.

Additional Challenge

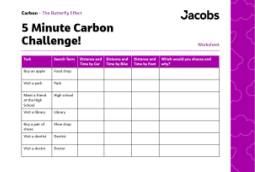
Research some other animals and their homes.

Additional Support

Teacher completes a couple of the answers in advance.

Resources

5 minute carbon challenge activity sheet, access to Google Maps, pens/pencils and paper to record answers or copy of the activity sheet. (Sheet can be completed digitally or on the board.)



Suggested Follow-On Activities

How could you re-design the local area to make it easier for people who choose Active Travel? Consider how things may need to be adapted to allow those with additional needs to also make sustainable choices when it comes to travel.

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We are learning

About how to reduce our carbon footprint through the food we eat.

We can now...

We can now explain how the food choices we make can have an impact on our carbon footprint and how to make more sustainable food choices.

Activity

We know that travel affects the carbon impact of things, but it's not the only factor. Sometimes it's actually better to buy things from further away as the energy needed to produce them locally would be more damaging. Eating meat can also significantly increase our carbon footprint too, and half of all carbon emissions coming from meat are from beef and lamb. Look at the Carbon Impact Graphic and discuss. Notice that even the highest carbon emission plant-based food has a smaller impact than the lowest impact animal product. Plan a meal for a family of four, including starter and dessert, that has as small a carbon footprint as possible.

Digital / At Home Version

Complete the activity in the same way.

Additional Challenge

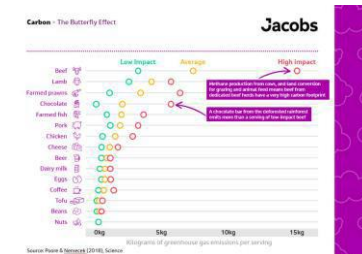
Calculate the cost of the meal using an online shopping website for a local supermarket. Now compare this to a meat alternative.

Additional Support

Plan only one course of the meal.

Resources

Carbon Impact Graphic.



Suggested Follow-On Activities

Search for a food carbon calculator and use it to calculate the impact your diet choices may have on the environment.

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