A FREE RESOURCE PACK FROM EDMENTUM

Earth Day

PreK-6th

Grade Range

Earth Day Topical Teaching Resources

What Does This Pack Include?

This pack has been created by teachers, for teachers. In it, you'll find high quality Lesson Plans, Activity Sheets, posters and a Fact Sheet to support your students as they celebrate this worldwide annual event about the environment.

To go directly to the content, simply click on the title in the index below:

FACT SHEETS:		
Grades 3-5	**Pre-K – Grade 2**	**Pre-K – Grade 6**
Explore the background behind Earth Day and learn why this event is celebrated around the world.	Learn about how long it takes for waste to break down and decompose.	Discover what a carbon footprint is and the impact it can have on the environment.

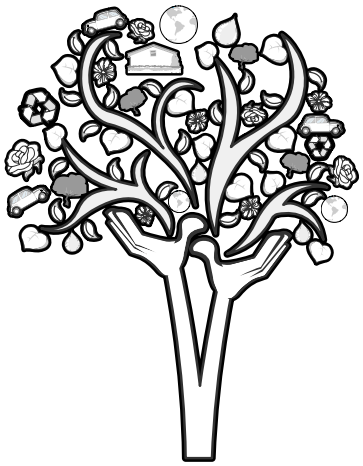
CRITICAL THINKING QUESTIONS:
Pre-K – Grade 6
Discuss how using different forms of transport can help the environment.

LESSON PLANS:	
Pre-K - Grade 6	**Pre-K - Grade 6**
Students are to carry out an experiment on how much carbon dioxide is produced from different cars.	Students are to consider how green their school is and to think about other ways they can help the environment.

REFERENCE SHEET:
Pre-K - Grade 6

POSTERS:		
Happy Earth Day!	**Earth Day (Color)**	**Earth Day (Black and White)**

edmentum™



Earth Day

- Earth Day is celebrated on April 22nd of each year. It was first observed in 1970.
- The founder of Earth Day is Gaylord Nelson, who was a U.S. Senator from Wisconsin.
- On Earth Day, events are held around the world to bring attention to the need for environmental protection.

By the Numbers

- The average American generates 4.3 pounds of waste per day.
- Americans waste about 33 million tons of food per year.
- About 40% of all food in the U.S. goes uneaten each year.
- In the U.S., there was 32 million tons of plastic waste in 2012. Only 9% of this waste was recovered for recycling.
- Americans throw away 25 billion plastic foam cups every year.
- People in the U.S. throw away 2.5 million plastic bottles every hour.
- Glass is 100% recyclable and can be recycled endlessly without loss in quality or purity.
- Over a ton of natural resources is saved for every ton of glass recycled.
- It takes about 1 million years for a glass bottle to decompose.
- Americans use about 69 million tons of paper and paperboard each year.
- The average family in the U.S. uses about 400 gallons of water per day.
- A bathroom faucet runs about 2 gallons of water per minute.

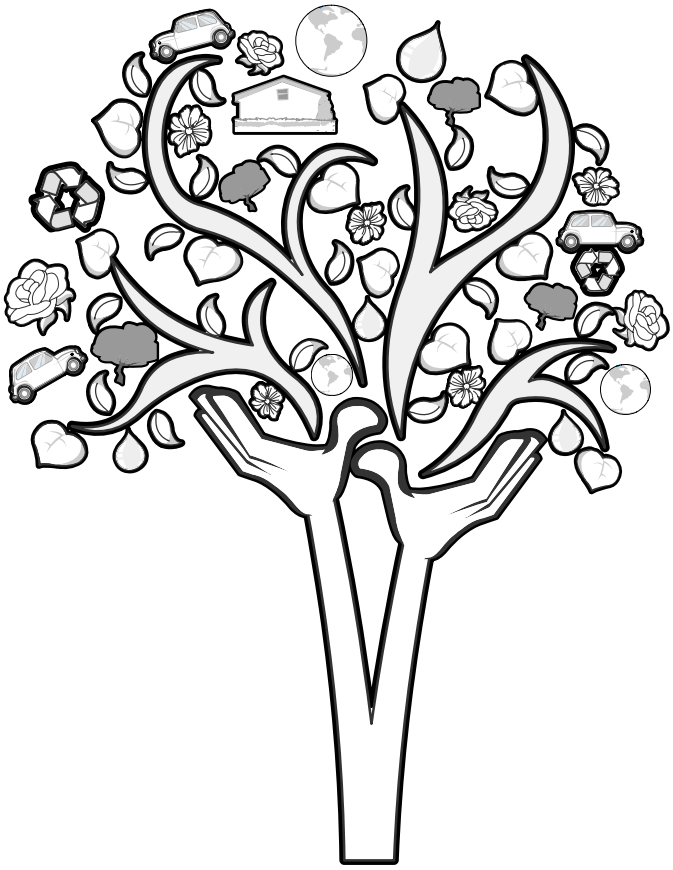
Earth Day

- Earth Day is celebrated on April 22nd of each year. It was first observed in 1970.

- On Earth Day, events are held around the world to bring attention to the need for environmental protection.

Each year, the UK produces about 31 million tons of solid waste. How long does it take for all this waste to break down?

- **Glass bottle** 1,000,000 years
- **Plastic bottle** 450 years
- **Aluminum can** 80-200 years
- **Disposable nappy** 450 years
- **Tin can** 50 years
- **Leather** 50 years
- **Plastic bag** 10-20 years
- **Apple core** 2 months
- **Newspaper** 6 weeks
- **Banana peel** 2-5 weeks
- **Paper towel** 2-4 weeks



Earth Day – Carbon Footprint
Fact Sheet

edmentum™

What is a carbon footprint?

- Imagine you went for a walk on a rainy day and then went inside without wiping your feet. You would leave wet, muddy, footprints behind showing where you had walked.
- A carbon footprint is similar to this but we can't see it. It is the amount of carbon dioxide that gets released into the environment every day as a result of the things we do.

What harm can carbon dioxide cause to the environment?

- Carbon dioxide is a greenhouse gas. Many scientists believe that too much carbon dioxide is causing the planet to warm up too quickly.
- Carbon dioxide is released into the atmosphere when we use fossil fuels, such as electricity and gas.

What adds to our carbon footprint?

- Our carbon footprint is determined by many things, such as our mode of transportation, and how much we heat our homes.
- We also add to our carbon footprint when we watch TV, use a computer, and throw away rubbish. We can calculate our carbon footprint using tools found on the Internet.

Carbon footprints across the world

This 2009 survey shows which countries have the highest and lowest carbon footprints across the world.

Country	Average carbon footprint
America	29 tons
Australia	21 tons
Canada	20 tons
Switzerland and Finland	18 tons
The Netherlands and Belgium	17 tons
Cyprus	16 tons
United Kingdom, Denmark, Germany	15 tons
China	3.1 tons
India	1.8 tons
Bangladesh and Mozambique	1.1 tons
Malawi	0.7 tons

(Source: http://www.clickgreen.org.uk/analysis/general-analysis/12268-us-tops-global-carbon-footprint-league-table-%E2%80%93-uk-comes-10th.html)

How could we reduce our carbon footprint?

- We could walk or bike to school instead of going by car, and we could recycle more.
- What else could you do?

Critical Thinking Question

edmentum™

How does it help the environment if kids **walk**, ride the **school bus**, or **carpool** to school?

Critical Thinking Answer

edmentum™

Did you know that vehicles produce about one-third of all U.S. air pollution?

Earth Day
Activity Sheet

edmentum™

Name: _____ Class: _____

Write your own Earth Day acrostic!

E

A

R

T

H

Earth Day
Activity Sheet

edmentum™

Name: _____ Class: _____

Write your own Earth Day acrostic!

Every day should be Earth Day.

Always try to

Recycle and reuse and

Treat our planet with care.

Have respect for all that Earth gives us.

Earth Day – Walk to School
Lesson Plan

edmentum™

Overview

In this 60-minute lesson, students will model the amount of carbon dioxide produced from different cars. They will be able to draw conclusions about the number of trees needed to offset the emissions produced by coming to school in a car. (For this lesson, it has been presumed that a round trip to school is 2 miles, and this occurs 180 days of the year. The counters are rounded up for ease and to ensure timings are manageable.)

Materials

- clock/timer/stopwatch; two for each group of four students
- counter chips; groups will need 24, 36, or 48 for every minute the activity runs
- Reference Sheet, "Walk to School"

Lesson Preparation (5 minutes)

Organize students into groups of four. Distribute the timers and counter chips to each group.

Lesson (55 minutes)

Introduction

Ask the students to work in mixed ability pairs to consider how green their school is. You may need to direct the discussion with some prompts, e.g., Does the school recycle? Is there a school allotment where students can grow their own vegetables? Do they realize the importance of a healthy mind and how activity can help develop this? They could record their ideas on individual whiteboards.

Procedure

Part I

- Facilitate the activity from the Reference Sheet.
- Choose one of the following cars to assign to each group:
  Car 1 (160g/mi) = 2 counters every 5 seconds
  Car 2 (256g/mi) = 3 counters every 5 seconds
  Car 3 (320g/mi) = 4 counters every 5 seconds
- Do not be concerned if students are not too accurate with their timings; however, a reasonable pace should be maintained to adequately illustrate the concept.

You may wish to allow the groups to have a practice run.

- Run the activity for 1-3 minutes. At the end of the activity, there should be a pool of of counters on each desk at which the students are working. The desks represent air. The groups that were assigned car 1 should have the fewest counters in the air. The groups that were assigned car 3 should have the most counters in the air.

Part II

Ask students to think about what they learned from the lesson. If carbon dioxide levels in the air are to be reduced, what do they think is the most important thing to do: walk to school, ban cars with high carbon emissions, or plant more trees? Give them a short time to think about this and ask for a hands-up vote. Ask for volunteers to give the reasons for their answer.

Part III

- You may wish to discuss the reasons why consumers choose to drive cars with higher emissions rather than opting for cars with lower emissions, such as initial cost, efficiency over time, and operating costs. Other topics for discussion could include government programs that offset carbon emissions, such as carpool lanes, and how to make cars more efficient, such as keeping tyres at the correct pressure, unloading unnecessary weight, and adjusting driving styles.
- You may also extend discussion by considering what would happen if a car travelled twice as many miles a day (car counter output doubles, tree intake stays the same). Predict how many trees would be needed to offset a car.

Assessment

Informally assess students' understanding of the topic as they progress through the activity, offering assistance as needed.

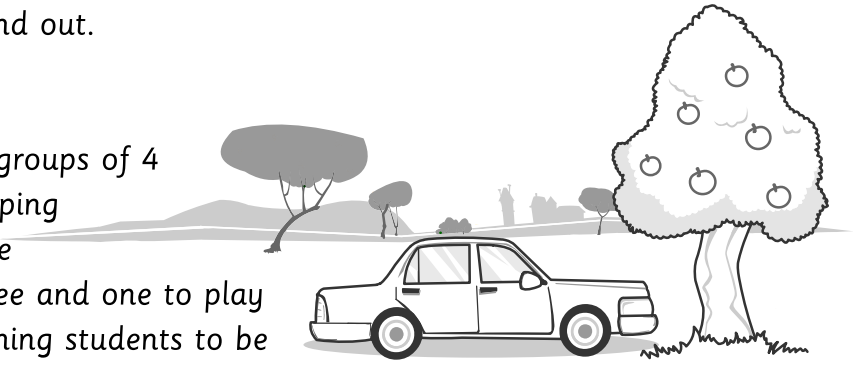
Earth Day – Walk to School
Reference Sheet

edmentum™

Carbon dioxide is believed to be linked to climate change. If there is too much carbon dioxide in the air, the effects of climate change will worsen and have more of an impact around the world.

In the UK, cars are now advertised showing the amount of carbon dioxide they produce for every mile they are driven. According to information reported by American Forests, one tree can absorb up to 22 kgs of carbon dioxide a year

So, if everyone who came to school in a car planted a tree, would the carbon dioxide be balanced out? Use this activity to find out.



Organization

Your teacher will organize you into groups of 4 and distribute counters and timekeeping devices. Once in your groups, choose one student to play the part of a tree and one to play the part of a car. Choose the remaining students to be the tree timer and the car timer.

Instructions:

- The car will start with all of the counters.
- The student who is the car timer will tell the student playing the part of the car every time time 5 seconds pass.
- For every 5 seconds that pass, the car will place the designated number of counters on a desk, which will represent the air. The number will be given to you by your teacher.
- The student who is the tree timer will tell the student who is playing the part of the tree every time 10 seconds pass. Every 10 seconds, the tree will remove 1 counter from the air.
- Everyone will start at the same time. Your teacher will tell you when to start, and when to finish.

What did you find?

Look at the number and location of the counters. Did the tree absorb all of the carbon dioxide? How many trees do you think would be needed to balance the carbon dioxide for the car? What about the other groups' results? What does this tell you about different cars? Can you determine what the impact would be if half of the class walked to school?

Extension

Form groups of 6 students. Have 1 student represent a car, have 3 students represent trees, and have the final 2 students serve as the car timer and tree timer. Compare these results to the previous results.

Earth Day – How Green Is Your School?

Lesson Plan

edmentum™

Overview

In this 50-minute activity, students will consider how green their school is and think about ways they can develop their school's green status.

Materials

- Carbon Footprint Fact Sheet; one for each student pair
- paper and pencils; one for each student pair
- chart paper and markers

Lesson Preparation (5 minutes)

Organize the students into pairs. Distribute the Carbon Footprint Fact Sheet to each pair.

Lesson (30 minutes)

Introduction

Discuss the information included on the Carbon Footprint Fact Sheet. Talk with the students about the importance of reducing their own Carbon Footprint and how they may already be trying to do this.

Procedure:

Part I

Have students work in pairs to consider how green the school is. You may need to direct the discussion with some prompts, such as **Does the school recycle? Can students grow their own vegetables at school?** Have them record their answers on a sheet of paper.

Part II

Have each student group present their ideas to the class.

Conclusion

Discuss with students any ideas they may have that could further develop the school's green status. For example, could they promote a walk-to-school week, or have a fundraiser to develop an area of land into a forest or school garden area?

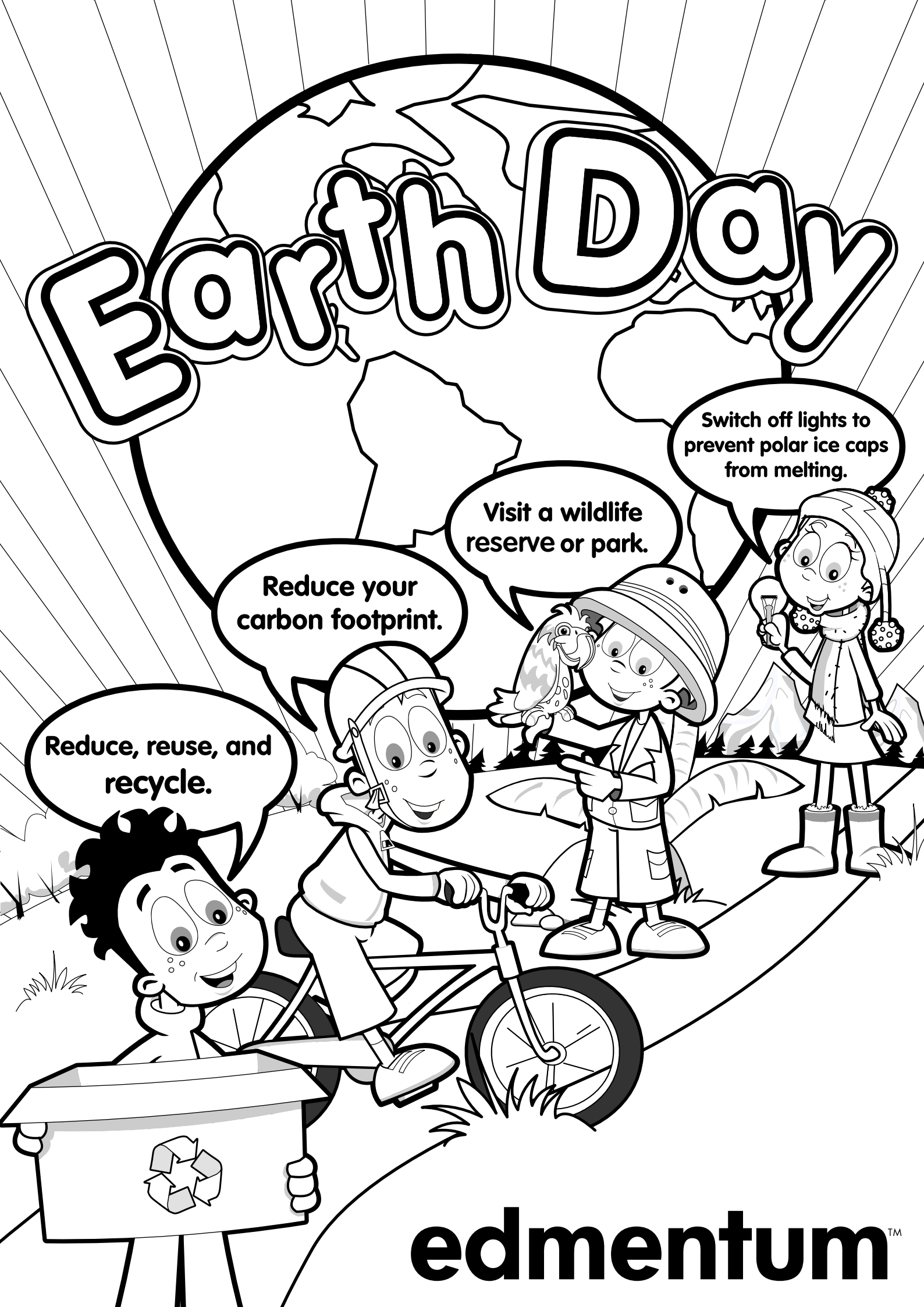
Assesment (15 minutes)

Have the students continue to work in pairs to make a poster and advertise their idea for how to make the school greener. Informally assess students' understanding of the topic as they complete this task. If time permits, have the pairs present their posters to class.

Happy Earth Day!

edmentum™


Earth Day
Reduce, reuse, and recycle.
Reduce your carbon footprint.
Visit a wildlife reserve or park.
Switch off lights to prevent polar ice caps from melting.
edmentum™


Earth Day
Switch off lights to prevent polar ice caps from melting.
Visit a wildlife reserve or park.
Reduce your carbon footprint.
Reduce, reuse, and recycle.
edmentum™

Human Impact

Activity Sheet

edmentum™

Name: _____ Class: _____

In what ways can humans affect the environment?
List as many harmful and beneficial ways that you can think of.

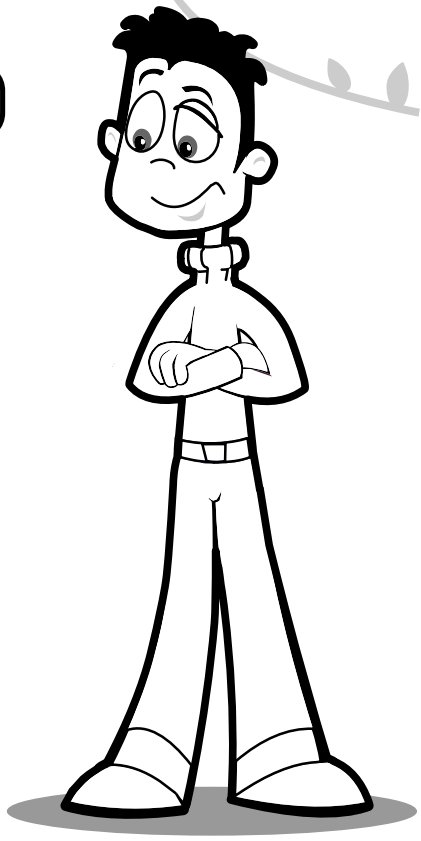
Positive effects on the environment	Negative effects on the environment
Suggested answers **Planting more trees.** **Caring for endangered species.**	**Pollution from industry.** **Litter.**

How can humans support the environment?

Suggested answers

Recycling

Replanting trees



Human Impact

Activity Sheet

edmentum™

Name: _____ Class: _____

In what ways can humans affect the environment?
List as many harmful and beneficial ways that you can think of.

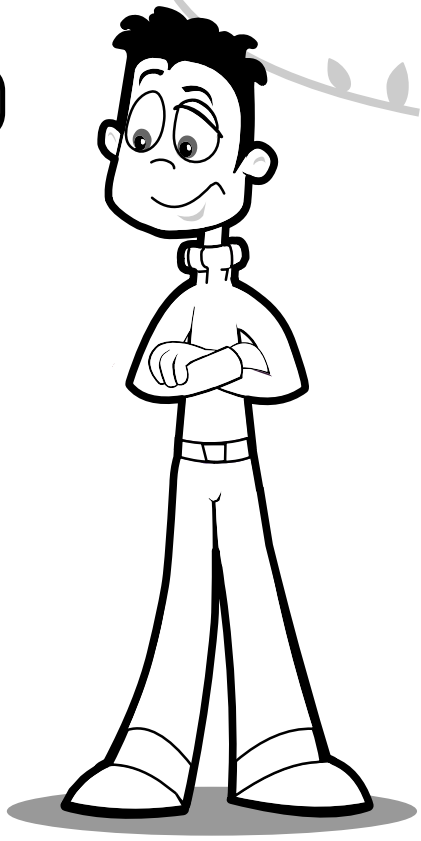
Positive effects on the environment	Negative effects on the environment
Suggested answers **Planting more trees.** **Caring for endangered species.**	**Pollution from industry.** **Litter.**

How can humans support the environment?

Suggested answers

Recycling

Replanting trees



About Edmentum

A world-class partner you can trust

Edmentum is founded in innovation and committed to being a trusted partner to create successful student outcomes everywhere learning occurs. We can give you the resources – and the expertise – to leverage the power of effective learning solutions.

- Grades K-12
- US, UK & International Curricula
- Supports Various Learning Models
- Subject Coverage

Growth

We know that not every student learns in the same way and at the same pace. Edmentum puts individual student growth first - giving students the tools to take control of their own academic journey while providing educators insight to facilitate targeted support.

Assessment

Our products come with rigorous assessment options, including diagnostic assessments, online tests, high-stakes test preparation, and more. The testing options can help you pinpoint exactly where students are at in their learning.

Research

All of the product developments we make are fuelled by your opinions, feedback, and research. Our research papers and case studies will help you gain a deeper insight into our success in supporting schools around the world.

Curriculum

Edmentum programs are aligned to globally recognized standard. Our products encompass and address a vast array of courses and subjects (over 600) and are fully aligned to curriculum standards.

EducationCity | **Exact Path** | **Courseware** | **Study Island** | **Academy**

Contact us today for more information.

www.edmentuminternational.com | +44 (0)1572 492576

edmentuminternational.com
+44 (0)1572 492576
international@edmentum.com

Edmentum International
c/o EducationCity Ltd
8/9 Saddlers Court
Oakham, Rutland
LE15 7GH, UK

edmentum™