

5th Grade Human Impact on Earth Systems Resources

Next Generation Science Standards:

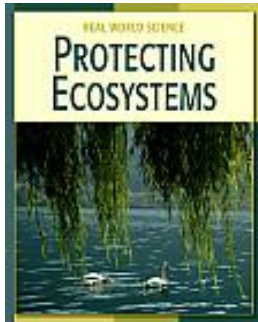
ESS3.C: Human Impacts on Earth Systems

Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments. (5-ESS3-1)

Books:

Protecting Ecosystems by L. K. Currie-McGhee

Includes bibliographical references (p. 31) and index.; Natural changes in ecosystems -- Changes caused by people -- Wise use of ecosystems -- Restoring damaged ecosystems. Activities, exercises, and easy-to-follow text introduce children to the world's ecosystems and the measures that are being taken to protect them.

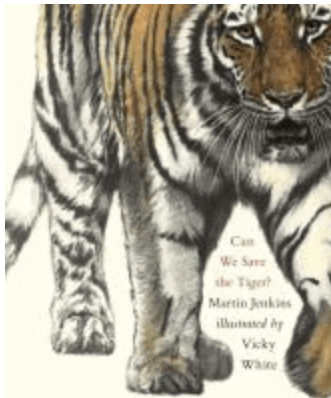


Guided Reading: S

32 Pages

Can We Save the Tiger by Martin Jenkins (2011)

Contains illustrations of rare animals, including tigers, ground iguanas, white-rumped vultures, and others, discusses the impact of human activities on the animals, and looks at how they can be saved.



Guided Reading: S

50 Pages

The Human Footprint by Ellen Kirk (2011)

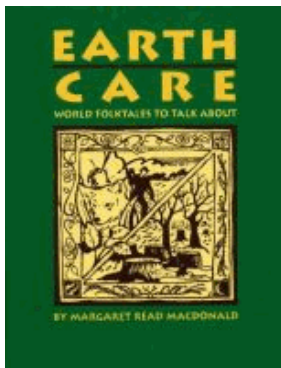
What is your human footprint? Well, it's 13,056 pints of milk, 28,433 showers, 12,888 oranges, 14,518 candy bars, and \$52,972 worth of clothes, all in one lifetime. Makes you want to step more lightly on the planet! This book doesn't preach or judge, but simply shows kids—in an exciting, visual way—how humans interact with the environment and how we can lessen our impact. Includes bibliographical references (p. 32). Helps readers understand the environmental impact of their actions by providing statistics on the amount of food, clothes, gas, milk, water, and other things they will consume in their lifetime.



Guided Reading: V
32 Pages

Earth Care: World Folktales to Talk About by Margaret Read MacDonald (1999)

A collection of traditional tales and proverbs from over twenty countries or ethnic groups, touching upon both human and ecological themes such as environmental protection, the care of other creatures, and the connection of all things in nature. In these forty-one tales, poems, stories, and in numerous proverbs, Margaret Read MacDonald uses ideas held by all peoples to show children how what we do affects our life on Earth. Organized by concept, these tales touch upon both human and ecological themes: caring for the land, the crops, the forests, and the wetlands; caring for other creatures; how all things are linked; how human greed leads to disaster; how nothing is without value; how pollution returns to the polluter; how one person can make a difference; how to husband the future by heeding the experience of the past; and how to unite our voices on the earth's behalf. MacDonald includes two original stories and two contemporary poems with tales from over thirty countries or ethnic groups. Seven stories are from diverse native American peoples.



Guided Reading: N
161 Pages

Planet Patrol: A Kid's Action Guide to Earth Care by Marybeth Lorbiecki (2005)

Giving kids the idea that they have power to effect change is the basic premise of this work. Many of the Earth's environmental problems-climate change, deforestation, shrinking habitat, species extinction, water, air, noise, and light pollution-as well as global conflict and overpopulation are addressed. For each challenge, a success story is shared and an action tip is put forth to help readers do their small share to address the problem.



Guided Reading: V
48 Pages

Getting from Here to There by Anne Flounders (2014)

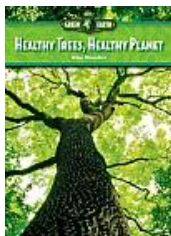
Includes bibliographical references (page 31) and index. Learn about the different ways in which people move from one place to another, how transportation affects our air, land, and water, and how to travel in a way that makes a positive difference for the Earth. Includes step-by-step ideas for taking action, different points of view, an up-close look at relevant careers, and more.



Guided Reading: R
32 Pages

Healthy Trees, Healthy Planet by Anne Flounders (2014)

The quiet nature of trees hides the fact that trees are always working for us and for Earth. Trees give us goods to meet our basic needs. Trees are home to animals, insects, and birds. But their biggest and most important job is playing a role in making Earth and our environment healthy. Learn some of the ways trees help, why they are in danger, and what you can do to help protect them now.



Guided Reading: S
32 Pages

Power for the Planet by Anne Flounders (2014)

Includes bibliographical references (page 31) and index. Discusses the energy sources used to power homes, businesses, and transportation and how to conserve them, details cleaner ways to supply oil and gas, and explains efforts to develop fuels with less negative impact on the planet.



Guided Reading: U
32 Pages

Friends in the Wild by Anne Flounders (2014)

Includes bibliographical references (page 31) and index. Did you know that the grass, trees, and dirt are the habitats or natural homes for insects, birds, and other animals? Learn why biodiversity is important, how the natural homes of various animals are being threatened, and what you can do to preserve and protect our natural environment.



Guided Reading: S
32 Pages

Growing Good Food by Anne Flounders (2014)

Includes bibliographical references (page 31) and index. Introduces the difference between organic and non-organic farming, community-supported agriculture, and how the choices you make at the grocery store can make a difference for your health and for the Earth.



Guided Reading: S
32 Pages

Reducing Waste by Anne Flounders (2014)

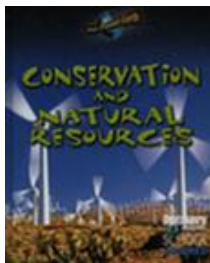
Includes bibliographical references (page 31) and index. Examines the importance of sustainability and discusses ways readers can protect the environment by reducing waste.



Guided Reading: S
32 Pages

Conservation and Natural Resources by Jackie Ball (2004)

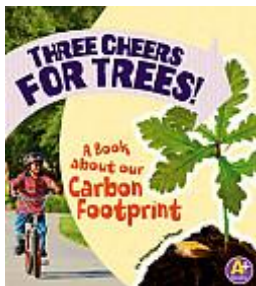
The same water has been cycling Earth for billions of years, and we use the same soil to plant our crops that ancient people used. *Conservation and Natural Resources* explains the issues that concern Earth and affect every living and nonliving thing. Discusses some of Earth's natural resources, threats to their existence, and efforts to protect them. Includes related activities.



Guided Reading: T
32 Pages

Three Cheers for Trees: A Book About our Carbon Footprint by Angie Lepetit (2013)

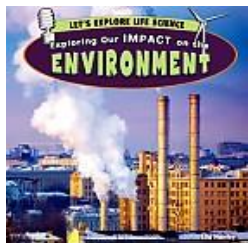
Includes bibliographical references (p. 30) and index. Discusses carbon footprints and how everyday choices affect the Earth. Lights on or lights off? Take your bike or ride the bus? The choices you make every day affect the planet. Learn about carbon footprints and ways to be earth-friendly.



Guided Reading: M
32 Pages

Exploring Our Impact on the Environment by Ella Hawley (2013)

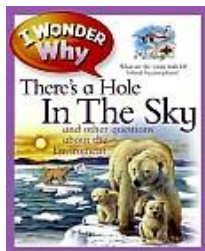
As people, we have a huge impact on our environment, and sadly this impact is not always a positive one. This incisive volume explores concepts such as pollution, habitat loss, and climate change in age-appropriate language. Later chapters explain what people are doing to reduce or reverse negative changes to the environment and provide readers with information on simple things they can do to shrink their carbon footprint.



Guided Reading: S
24 Pages

I Wonder Why There's A Hole in the Sky and Other Questions About the Environment by Sean Callery (2012)

Includes index. Examines various environmental issues, and answers questions for children, and describes why there is life on Earth, discusses the ozone, pollution, improving homes to become more environmentally friendly, and other related topics.



Guided Reading: T
32 Pages

Dirty Air by Ellen Levine (2014)

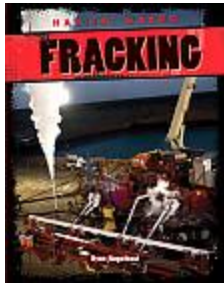
Includes bibliographical references (page 24) and index. Dangerous air -- Burning fuel -- Making electricity -- Pollution all around -- Health effects -- Acid rain -- Reducing air pollution -- Making cleaner electricity -- Be a clean air champion! -- Science lab. Explores what makes air pollution, the dangers, and what can be done to help reduce it.



Guided Reading: Q
24 Pages

Fracking by Ryan Nagelhout (2014)

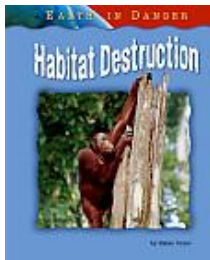
Includes bibliographical references (page 31) and index. Explains what fracking is and how it works, and discusses its impact on the environment.



Guided Reading: W
32 Pages

Habitat Destruction by Helen Orme (2009)

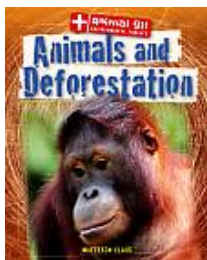
Includes bibliographical references (p. 32) and index. Explains how people are damaging the planet's animal and plant habitats in order to find resources, and examines possible solutions that will protect the land while still giving people what they need to survive.



Guided Reading: S
32 Pages

Animals and Deforestation by Matteson Claus (2014)

Includes bibliographical references (page 47) and index. An introduction to deforestation which threatens local wildlife populations, discussing why it is occurring and what efforts are being made to save the forests. While animals are at risk because of poaching and pollution, the places they call home are also under constant attack. Readers discover what a shrinking rainforest means for the countless animals that call it home, and what human activities like logging and farming have done to forests.



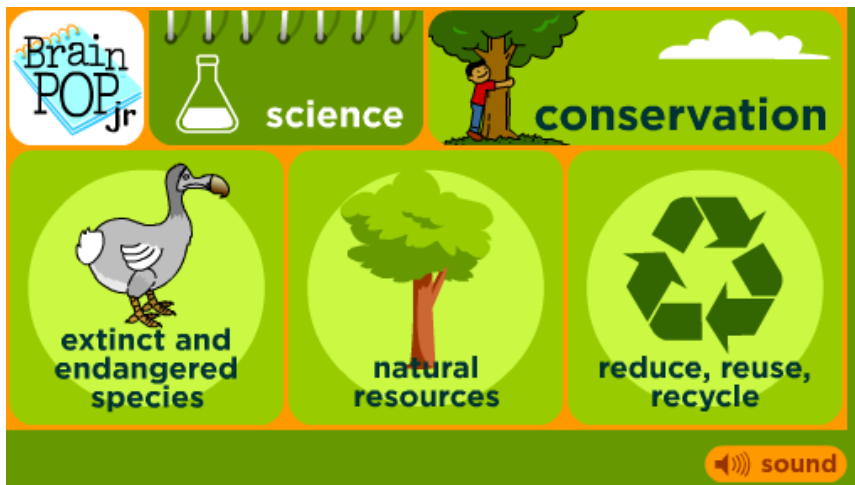
Guided Reading: V
48 Pages

Digital Resources

Databases: (To access these databases remotely, ask your librarian for your school's username and password.)

Brainpop Jr.: *Brainpop, Jr. is a database that provides a 3-6 minute video on informational topics followed by a comprehension quiz. The database includes activities and lesson plans as well. It is geared towards grades K-3, but can be used in 4th and 5th grades as well.*

These videos align with Next Generation Science Standards on Human Impact on Earth Systems for 5th Grade.

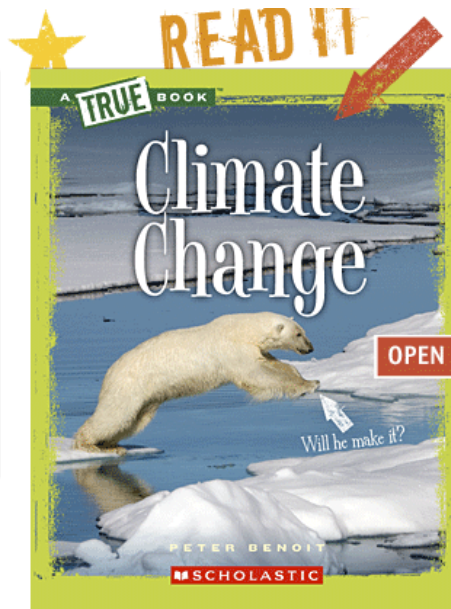


Two different online quizzes are offered after each video to check for understanding. They are entitled “Easy” and “Hard” with 5 questions each.

A screenshot of a "Hard Quiz" interface. The top navigation bar includes icons for science, conservation, and reduce, reuse, recycle. The quiz question is: "2. Some electronic equipment is made with harmful materials. What should you do with old electronic equipment?" The options are: a) Recycle it so the materials are taken out or reused, b) Throw the equipment away in the trash or in a landfill, c) Keep the electronic equipment in your home forever, and d) Bury the old equipment in a hole in your backyard. A "Block..." button is visible in the top right corner of the quiz area.

TrueFlix: Trueflix is a database that includes non-fiction electronic books. Within each selected book you will find a 3-6 minute informational video on the subject, and a list of recommended websites.

Trueflix contains this book on Climate Change which supports the Next Generation Science Standards on Human Impact on Earth's Systems for 5th Grade. The book is 48 pages long, and includes a "Read-Along" button which highlights each word as it is read aloud.



Find the Truth!

What are the signs of climate change?

To get the Truth: Watch the video, then read the book.

Here is an example of the layout and contents of the book *Climate Change*:

TRUE FLIX™ Table of Contents Read Along OFF

Contents

- 1 Rising Temperatures**
What is climate change? 7
- 2 Causes of Climate Change**
Why is the climate changing? 13
- 3 Big Trouble**
What problems does climate change cause? 21

THE BIG TRUTH!

Shishmaref, Alaska
What is climate change doing to this small Alaskan town? 26

Inupiat boy

4



4 A Grim Future
What will happen if we don't fix the climate change problem? 29

5 Solving the Problem
How can we fight climate change? 39

True Statistics 43
Resources 44
Important Words 46
Index 47
About the Author 48



Ice samples from Greenland show changes in Earth's climate dating back 115,000 years.

5

Each subject in *Trueflix* has a part called “Show What You Know.” This is a ten question quiz that can be used to check understanding from the text.

Show What You Know

1. Climate is weather measured _____.



- over a long period of time
- over a short period of time
- for one day
- for one week

SUBMIT

Trueflix also offers word match activity that can be done online. Word match gives a clue that can then be matched with a keyword from the text. As you can see from the toolbar on the left, there are project ideas for the classroom, a list of other non-fiction resources on the same topic in “Explore More,” related websites that have been tested and recommended, and a 3-6 minute video in “Watch the Video.”





- Start
- Watch the Video
- Read the Book
- Explore More
- Project Idea
- Activity Center
 - Show What You Know
 - Word Match
- Explore the Web
- More Space

Word Match

Read the clue below. Click on the word it matches.
Match all the words to uncover a picture.

CLUE: the mixture of gases around a planet

	atmosphere	
greenhouse gases	erode	methane
carbon dioxide	droughts	climate change

Pebble Go! *Pebble Go is a database that includes non-fiction books, videos and activities. The target audience for Pebble Go is Kindergarten through 3rd grade, however Pebble Go can be a great way to pique interest in a topic for 4th and 5th graders. Each book is 5 pages long and includes a read-aloud button that highlights each word as it reads aloud. There are often one or two very short videos on the topic embedded within each book.*

Pebble Go's has several books that align with Next Generation Science Standards for 5th Grade on Human Impact on Earth Systems. To access these titles click on "Social Studies," "People and the Environment" and "Helping the Environment." Here are the subjects covered:

A screenshot of the Pebble Go interface. At the top, a blue navigation bar contains a green arrow pointing left labeled "Back", a small image of a green field, a small image of a person holding a book, and a blue arrow pointing right labeled "Helping the Environment". Below this, a light blue area contains five book covers: "Caring for Nature" (a girl in a garden), "Cleaning Up Litter" (people cleaning up), "Reusing and Recycling" (a recycling symbol), "Saving Energy" (solar panels), and "Saving Water" (a hand turning a water tap).

Here's an example of the inside of one of the books:

A screenshot of the inside of a Pebble Go book. At the top, a blue navigation bar contains a green arrow pointing left labeled "Back", a small image of a green field, a small image of a person holding a book, a small image of a hand turning a water tap, and a blue arrow pointing right labeled "Saving Water". Below this, a light blue area contains five yellow buttons: "How We Use Water", "Water in Danger", "How Communities Save Water", "Saving Water at Home", and "How You Can Help". To the left of the main text is a speaker icon. To the right is a yellow button labeled "Video 1". The main text area contains the following text: "We use water every day. We drink it and cook meals with it. We use it to wash our clothes and our bodies. Water flushes toilets and helps gardens grow. We could not live without water." To the right of the text is a photograph of a young girl watering pink flowers with a silver watering can. At the bottom right is a yellow button labeled "Print This".

World Book Web:

The World Book Web is a suite of online research tools that includes encyclopedia articles, primary source collections, educator tools, student activities, pictures, audio, and video, complemented by current periodicals and related Web sites. Most all of these World Book Web research tools include options where text can be read aloud to the user. All Ithaca elementary school libraries currently subscribe to **World Book Kids**, **World Book Student**, **World Book Discover**, **World Book Timelines** and **World Book Classroom: Early World of Learning**. For specific training in how to use these amazing tools consult Worldbook's training website or ask your school's librarian. <http://www.worldbookonline.com/training/>

World Book Student has an article called "environmental pollution" which aligns with Next Generation Science Standards for 5th Grade. You can use this link to access the article: <http://www.worldbookonline.com/student/article?id=ar182428> OR you can simply type "environmental pollution" in World Book Student and choose the first article. These are the contents of the article.

MAIN SECTIONS Lexile® Measure: 1100L [-] Introduction [🔊] Ocean pollution [-] Types of pollution <ul style="list-style-type: none">• Air pollution• Outdoor air pollution [🔊] Effects of acid rain on a sculpture <ul style="list-style-type: none">• Indoor air pollution• Water pollution• Soil pollution• Solid waste• Hazardous waste• Radiation• Pesticides• Heavy metals• Noise pollution [+] Controlling pollution [+] History [+] Current environmental issues Citation Information	[-] Introduction [🔊] Ocean pollution [+] Types of pollution [-] Controlling pollution <ul style="list-style-type: none">• Government action• Local efforts [📄] Paper recycling <ul style="list-style-type: none">• National efforts [🔊] Government cleanup project Superfund <ul style="list-style-type: none">• Global efforts [🔊] Plane dusts sheep with DDT to kill ticks <ul style="list-style-type: none">• Scientific efforts• Business and industry• Agriculture• Environmental organizations• Individual efforts [🔊] Recycling computers [📄] Aluminum recycling [🔊] Used glass containers [+] History [+] Current environmental issues	MAIN SECTIONS Lexile® Measure: 1100L [-] Introduction [🔊] Ocean pollution [+] Types of pollution [+] Controlling pollution [-] History <ul style="list-style-type: none">• The growth of pollution• Progress in controlling pollution [-] Current environmental issues <ul style="list-style-type: none">• Weighing benefits and risks• Effect of population growth• Wastefulness in the industrialized world Citation Information
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Article Contents

MAIN SECTIONS

Lexile® Measure: 1100L

- Introduction
- Types of pollution
- Controlling pollution
 - Government action
 - Local efforts
 - Paper recycling
 - National efforts
 - Government cleanup project Superfund
 - Global efforts
 - Plane dusts sheep with DDT to kill ticks
 - Scientific efforts
 - Business and industry
 - Agriculture
 - Environmental organizations
 - Individual efforts
 - Recycling computers

Back

Tools

- Print full section
- Highlight search term in text
- Double-click a word to define it.
- View full article
- Save to My Research
- Translate this text
- E-mail article
- Save article
- Hear text read aloud

Controlling pollution

Controlling pollution depends on the efforts of governments, scientists, business and industry, agriculture, environmental organizations, and individuals.
[Print "Controlling pollution" subsection](#)

Government action. In many countries around the world, governments work to help clean up pollution. Such environmental efforts come from both local and national governments, but they also depend on international cooperation. A number of international groups have been established to protect Earth's resources.
[Print "Government action" subsection](#)

Local efforts. Many local governments have enacted laws to help clean up the environment. For example, in 1989, California adopted a 20-year plan to reduce air pollution in the Los Angeles area, which had the worst air quality in the United States. The plan introduced measures to restrict the use of gasoline-powered vehicles and to encourage the use of mass transportation.
[Print "Local efforts" subsection](#)

Related Information

for: **Environmental pollution**

- Encyclopedia Articles
- Questions
- Back in Time Articles
- Special Reports
- Web Sites
- Magazine Articles

Content Standards

This World Book article aligns with New York Learning Standards
[View Learning Standards](#)

Video
[Paper recycling](#)

Other articles on environmental impact can be found by typing the keyword "environmental" in the search bar.

- Encyclopedia Articles (439 items)
- Dictionary (1 item)
- Tables (16 items)
- Pictures (8 items)
- Videos (3 items)
- Back in Time Articles (623 items)
- Special Reports (114 items)
- Web Sites (59 items)
- Research Guides (1 item)

- Environmental pollution**
Environmental pollution refers to harmful chemicals and other contaminants that damage the natural environment.
- Environmental impact statement**
Environmental impact statement is a report that evaluates the likely environmental effects of a planned government project or program.
- Environmental Protection Agency (EPA)**
Environmental Protection Agency (EPA) is an independent agency of the United States government.
- Environmental Defense Fund**
Environmental Defense Fund is a private organization in the United States that works to protect the environment.
- Greenpeace**
Greenpeace is an international environmental organization.
- Exxon Valdez oil spill**
Exxon Valdez oil spill was one of the worst environmental disasters in United States history.
- Saro-Wiwa, Ken**
Saro-Wiwa, Ken (1941-1995), was a Nigerian writer and environmental activist.
- Earth Day**
Earth Day is an annual observance, held on April 22, to increase public awareness of environmental issues.

Videos

Check All | Clear All | Save to My Research

-  **WB Explains: Why are so many rivers polluted?**
-  **WB Explains: What were Lady Bird Johnson's major accomplishments?**

These two videos touch on the same subject.

Websites:

Greenhouse Effect lesson plan and activity

<http://www.explorelearning.com/index.cfm?method=cResource.dspDetail&ResourceID=617>

Within this simulated region of land, daytime's rising temperature and the falling temperature at night can be measured, along with heat flow in and out of the system. The amount of greenhouse gases present in the atmosphere can be adjusted through time, and the long-term effects can be investigated.

Water Pollution lesson plan and activity

<http://www.explorelearning.com/index.cfm?method=cResource.dspDetail&ResourceID=445>

Get to know the four main types of pollution present in the environment, and then look at a variety of real-world examples as you try to guess what type of pollution is represented by each situation. All of the real-world situations can be viewed every day in different parts of the world.

Eekoworld: PBS Kids

<http://pbskids.org/eekoworld/index.html>

This website has an activity called “EekoHouse” where users go from room to room in a house clicking on household objects (like newspapers, bottles and a faucet left running). They are then presented with a choice of what to do with the object. The user then decides what would be the better choice for the environment to lessen human impact on the world. The “EekoCreature” feature on this website allows users to choose an animal and play with that animal in a online gaming environment with other users who are online around the world.

Greenhouse Gases

<http://www.epa.gov/climatestudents/basics/today/greenhouse-gases.html>

A student’s guide to global climate change. Includes effects on people and environment.

NASA’s Climate Kids

<http://climatekids.nasa.gov/big-questions/>

Subjects include air, oceans, fresh water, carbon’s travels, climate, energy, plants and animals. Big questions include “what is the greenhouse effect,” “what’s happening to our oceans,” “what can we do to help” and more.

National Geographic Video: Greenhouse gases

<http://video.nationalgeographic.com/video/greenhouse-gases>

Three and a half minute video follows scientists in Wisconsin studying increased *greenhouse gases* and their effects.

iPad apps:

Environmental Science Buddy - by Feraco Media, Inc.

Cost: \$1.99

Includes lessons, quizzes, videos and flash cards by topic. Topics include: air pollution, water quality, waste management, energy efficiency, water resources and much more.

Newfoundland and Labrador: A Sea of Change

Cost: Free

A great resource with quizzes, infographics, and case studies involving climate change from Newfoundland and Labrador. Talks about climate change, how oceans are changing, and how students can make a difference. High quality graphics. App works offline if necessary.

Green Center Recycling - by Dot

Cost: Free

Sort trash into the correct recycling bins in a race against the clock. Includes compost and varied recyclables.