

GRADE 4 LEARNING EXPERIENCE

How Plankton, Plastic and Polar Fleece are Connected

Summary

Learners will investigate how plastic is formed and how recycling helps create a clean environment. Learners will create a commercial to demonstrate their new understanding of the process from plankton to plastic to polar fleece.

Objective

To teach students how plastic is made and recycled and to instill positive behaviours regarding recycling.

Pre-Activity

DISCUSSION AND PHOTO ACTIVITY

DIRECTIONS

GROUP AND CLASS DISCUSSION

Divide the students into small groups, and ask them to discuss why they think it is important to recycle. They can record their findings on sticky notes or chart paper and share a summary with the rest of the class.

As the groups share, probe so that students explore the concept of resources on earth being limited, and how recycling helps reduce the extraction of natural resources.

Discuss the link between resource extraction and climate change. Explain that fossil fuel extraction increases the amount of carbon in the atmosphere, and how deforestation decreases the amount of carbon reabsorption, etc.

OPTIONS Choose a discussion format that works best for your class, such as: small groups, whole class, Think-Pair-Share, Mind Mapping

MATERIALS

Whiteboard and markers

Sticky notes or chart paper

DURATION

10 mins

MAIN LEARNING OUTCOME

GRADE:

4

SUBJECT:

Science



Outcome 8

Students will explore how the earth's surface changes over time.

Indicators

- Explore the connections among the rock cycle, soil, and weather

CROSS-CURRICULAR LINKS

English Language Arts



Outcome 7

Writing and Other Ways of Representing

Students will be expected to use writing and other representations to explore, clarify and reflect upon thoughts and experiences.

Indicators

- Explore various forms/genres of writing to develop imagination.
- Experiment with the purpose(s) of specific pieces of writing.
- Consider the audience(s) for specific pieces of writing.

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#NothingWasted

DISCUSSION AND PHOTO ACTIVITY (cont'd)

DIRECTIONS

CLASS / PAIRS DISCUSSION

Pair students up and ask them to guess the link between **plankton** and **polar fleece**.

Explain that plankton are small, microscopic organisms drifting or floating in the sea or freshwater. Plankton is an essential source of food for larger aquatic animals like fish and whales.

Choose a couple of groups to share their answers. There will likely be some funny answers!

CLASS AND GROUP DISCUSSION

Divide the class into small groups and give each a copy of the **Photo Activity (Appendix 1)**. Explain that the ten photos on the page represent the transformation from plankton to polar fleece. Ask each group to try to put them into the correct order.

You will need to explain that plankton and other organic matter decomposed and was compressed under layers of rock and earth for millions of years* and became oil. The oil is harvested and transformed into plastics, which are transformed into a myriad of products, including polar fleece.

***OPTION** Go into more in depth with the rock cycle.

MATERIALS

Appendix 1:
Photo Activity

Scissors and glue

Answer Key for Appendix 1:

Correct order for the process from plankton to polar fleece



Activity

CREATE A COMMERCIAL

DIRECTIONS

Students will demonstrate their understanding of how plankton becomes polar fleece by creating a commercial to sell a polar fleece product, such as a scarf or a vest. They will promote their product by explaining the journey of how it was made.

Break students into small groups and ask them to complete the **Commercial Checklist and Planning Sheet (Appendix 2)**. You may choose to have students create a video of their commercial or perform it live in class.

MATERIALS

Appendix 2:
Commercial Checklist and Planning Sheet

DURATION

1 hour planning
1 hour presenting

ENVIRONMENTAL EVENTS

There are many great opportunities throughout the year to highlight the 3Rs in the classroom. Check out these annual events:

Waste Reduction Week

October (3rd week)

Earth Day

April 22

Compost Awareness Week

May (1st full week)

Environment Week

June (1st full week)



Post-Activity

TRUTH-TRUTH-LIE

DIRECTIONS

After all of the students have presented their commercial, each student will create two truths and one lie about what they learned from watching all of the commercials. Students will then exchange their two truths and one lie with another student. Each partner will identify the lie, correct it and hand it in as an **Exit Pass (Appendix 3)**. Remind them that their "lie" needs to be on topic.

MATERIALS

Appendix 3:
Exit Pass

DURATION

10 minutes

Assessment

FORMATIVE Observe and check-in with students at various points throughout the lesson to check understanding.

SUMMATIVE (OPTIONAL) Evaluate student presentations (commercials).

ABOUT DIVERT NS

Divert NS is a not-for-profit organization championing recycling in Nova Scotia. For over 20 years we've helped build a culture of recycling through environmental stewardship, education, and innovation. Divert NS operates the **Beverage Container Deposit-Refund Program** and the **Used Tire Management Program**. In addition, we work in collaboration with government,

industry, and academia to divert waste-resources from landfill. Divert NS, in partnership with municipalities, delivers education and awareness programs to schools, businesses, and community groups. Divert NS also works to develop stewardship agreements and funds innovative research and development initiatives.

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APPENDIX 1:
PLANKTON, PLASTIC AND POLAR FLEECE

Photo Activity

Cut out these 10 pictures and arrange them in the correct order to show the process of how PLANKTON can become POLAR FLEECE.



APPENDIX 3:
PLANKTON, PLASTIC AND POLAR FLEECE

Exit Pass

Name: _____

Identify the lie your partner told you and explain to me why it is a "lie".

Commercial Checklist and Planning Sheet

Create a commercial to sell a polar fleece product of your choice. You could choose to sell a blanket, winter hat/gloves, sweater, coat, pyjamas, pet blanket, etc.

Your commercial **must explain** how the product was created. **Use this checklist** to make sure you include all the necessary information.



In my commercial, I explained:

- How ancient plankton was compressed under layers of rock and mud
- The plankton became oil
- The oil was extracted and processed into plastic
- The plastic became a product that was then recycled
- Through the recycling process, plastic can become polar fleece

Group members: _____

Product we are selling: _____

Summary of our commercial:
(What happens in your commercial?)

Props and other materials we need for our commercial: