

7 TYPES OF PLASTIC

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Subject/topic

Geography/Social Studies

Time

60 minutes (can be adapted for longer or shorter periods)

Grade level

K-12 (can be adapted for all grade levels)

Learning Objectives

- Students will learn about the seven types of plastic.
- Students will examine the types of plastics they use in their classroom or at home and conduct an audit.
- Students will assess the different types of plastic they use and make a plan to reduce their plastic use.

Materials

- 10,000 Changes website (10000changes.ca)
- Recycling: A numbers game infographic (accessible on website)
- Recycling: A numbers game video (accessible on website)
- Technology needed to access the website (not included)
- 7 Types of Plastic template (included)

Focus Questions

Why are there different types of plastic? How much of the single-use plastic that we use in our everyday lives can be recycled? Can the planet benefit from humans using less single-use plastic? How can I reduce my plastic use?

Lesson Description

Minds on

Students will discuss how plastic plays a role in their daily lives and will brainstorm a list of plastic items they put in their recycling box.

Action

Students will learn about the seven categories of plastic used by Canadian citizens and which ones can and cannot be recycled in curbside bins. Students will assess their classroom or their school's recycling habits and audit the contents of select recycling bins on school property.

Conclusion

Students will discuss how they can reduce plastic use in their classroom, school or community and make a commitment on the 10,000 changes website.

Lesson Implementation

Minds on

Ask students to walk around the classroom and make a list of everything they see that is made of plastic. Afterwards, have students share their ideas with the class as you make a list on the board. Next, have students think of their lives outside of school and independently make their own list of all the things they use on a daily basis that are made of plastic. Remind students to consider the items used to package their food, bathroom supplies and clothing.

Ask students what role plastic plays in our lives. If they get stuck, have them reflect about what life would look like without plastic. Ask students to reflect on why plastic pollution is a problem. Where is it a problem? Ask them if they think it is important to reduce plastic use. Have them explain their reasoning.

Action

Bring attention to the recycling box in your classroom. Ask students what items go into this bin. What about the recycling bins at home? Have students make a final list of every item they have seen or put in a recycling bin (at home or at school).

Explain to students that although most Canadians throw all their plastic waste into one recycling box, there are in fact seven different types of plastic that end up being discarded. Of these seven types, only some are actually recyclable, while the others get sent to landfills or end up in our waterways. Furthermore, not all communities in Canada recycle the same plastics.

Project the 10,000 Changes website on the board. Click on the education tab, and then on the "7 types of plastic" link. Watch the "Recycling: A numbers game" video and ask students to note the different categories of plastic and write an example under each category. Afterwards, discuss everyone's answers as a group.

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Next, display the “Recycling: A numbers game” infographic. (Option: you can print this out and distribute it to students or make it available on their Google Classroom by downloading the PDF). Allow time for students to review the information on the infographic and encourage them to compare it to their notes from the video, making any corrections necessary.

Revisit the lists of plastics made at the start of class, focusing on the list of items that go into the recycling box. In pairs or small groups, have students use the “7 types of plastic template” (included below) to categorize the different types of plastic from that list and indicate which ones can and cannot be recycled in your community. If students are not sure about which types of plastics can and cannot be recycled in their community, encourage them to look at their community’s website to learn more.

To end this activity, perform an audit of the class recycling box. (Option: compare this to an audit of a cafeteria or library recycling box). What percentage of plastic material going into your class recycling box can actually be recycled in your community? Which items, and how many, can actually be reused if they were cleaned properly? Which items, and how many, could be replaced by other, more recyclable or reusable alternatives?

Conclusion and Consolidation

Now that students are familiar with the different categories of plastic, and which types can and cannot be recycled, discuss what students have learned. Possible discussion questions include:

- Have you ever referred to the numbers in the recycling triangle logos on the bottoms of plastic containers? What is the purpose of them?
- What surprised you the most about the different categories?
- Why can't some plastics be recycled?
- Why do some communities recycle certain types of plastic while others do not?
- How can we ensure that we predominantly use recyclable or reusable materials in our everyday lives?
- How can we educate others to do the same?
- What small actions can we take to ensure we only add recyclable materials to our recycling boxes?

Head back to the 10,000 Changes website and this time, allow students to explore the website themselves, paying special attention to the “Participate” section. Discuss with the class what kind of commitments they can make (individually, as a class and as a school) and have students sign up, or register their commitment on the website.

Extend Your Geographical Thinking

Encourage students to use their new knowledge of different types of plastics to educate their families. Ask students to assess the plastic materials going into their recycling boxes at home and determine how many items can and cannot be recycled. Encourage students to discuss with their families how they can reduce their plastic use and create a family action plan. Encourage parents to go to the 10,000 Changes website and register their own commitments.

Connection to the Canadian Geography Framework

Concepts of Geographic Thinking

- ▷ Patterns and trends
- ▷ Interrelationships
- ▷ Spatial significance

Inquiry Process

- ▷ Formulate questions
- ▷ Gather and organize
- ▷ Interpret and analyze

Geospatial Skills

- ▷ Foundational elements
- ▷ Spatial representations
- ▷ Technology
- ▷ Fieldwork

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Modifications

Lead a school-wide audit. Rather than students examining what they put in their classroom's recycling box, have students audit what they are putting in their school's recycling boxes (e.g., cafeteria, library, gymnasium, atrium, portables, etc.). Are there plastic items that everyone uses that could be swapped for more recyclable or reusable alternatives? Have students make a list of these items and research more recyclable or reusable alternatives for each and share them with the school.

Assessment Opportunities

Teachers can assess how students engage in discussion and their understanding of different types of plastic based on their responses on the "7 types of plastic template."

Students can assess each other on how they work together in pairs or small groups and how everyone contributes to group discussions.

Sources and Additional resources

- 10,000 Changes website (10000changes.ca)
- Recycling Council of Ontario (rco.on.ca/resources)
- Environment and Climate Change Canada (canada.ca/en/environment-climate-change)
- Environment and Climate Change Canada - [Towards Zero Plastic Waste](#)
- Waste 4 Change (waste4change.com/7-types-plastic-need-know)
- Plastic Action Centre (plasticactioncentre.ca)
- Plastic Bag Grab Challenge (plasticbaggrab.com/en/resources)
- DivertNS School Resources (divertns.ca/education/lesson-plans)

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7 types of plastic template

1. PETE (POLYETHYLENE TEREPHTHALATE)	2. HDPE (HIGH-DENSITY POLYETHYLENE)
3. PVC (POLYVINYL CHLORIDE)	4. LDPE (LOW-DENSITY POLYETHYLENE)
5. PP (POLYPROPYLENE)	6. PS (POLYSTYRENE)
7. OTHER	OPTIONAL: Any items that do not have a clear category

Questions I have about the types of plastic I see in the recycling box:

- _____
- _____
- _____