WHAT IN THE WORLD IS A TECHNOFOSSIL?

CANADIAN GEOGRAPHIC EDUCATION'S ONLINE Classroom

Subjects:

Plastics, pollution, recycling, technofossils

Time:

45 minutes

Grades:

7-12

What to know before getting started:

There are now more than 7.6 billion people living on Earth. Each year, humans produce more than 300 million tons of plastic (that's more than 25 million garbage trucks full of plastic), most of which is only used once before it is thrown out or recycled. Plastic is durable and made to last. Even when we dispose of it, plastic remains somewhere on Earth in some form or another, perhaps in a landfill or in a recycled product, for decades or even centuries depending on how it's been manufactured. Plastic pollution is accumulating on land and in the oceans and is slowly starting to create a layer that geologists are comparing to the sedimentary rock layers we see in features like the Burgess Shale in the Canadian Rockies. This plastics layer is composed of "technofossils," which include things like furniture, pens, jewelry, water bottles and electronics, that last for hundreds of years and could potentially be uncovered by future generations studying the Earth. **Follow the instructions below to learn more about this new kind of fossil.**

Activity time!

Read this first...

A gigapixel is a collection of superimposed high-quality photographs which, when combined, contain one billion pixels of information. The Recycling Gigapixel is an example of how photography and videos can help us learn about things we might not think about on a daily basis. In this case, we're focusing on plastic, or, more specifically, our plastic production, consumption and disposal habits, which are leading to some serious environmental problems. This is also an opportunity to learn about how we can work to overcome these problems.

...then follow these instructions

Open the Recycling Gigapixel on your computer screen. Start by zooming in and out and exploring all the different items pictured on the gigapixel. Find five items that you recognize or have used in the past six months. Now find five items you have used in the past week.

> **Stop and think:** What types of objects are you noticing? Which objects occur the most often? Why do you think that is? What kinds of words would you use to describe the image? Where do you think this photograph was taken?

Now, it's time for a scavenger hunt. As you are zooming in and out, you might notice several circular, white, spinning triggers. They are well hidden so you will have to look closely. There are seven in total. Find all seven triggers (try to do it without any hints!) and watch the short videos that play when you click on them. Make sure your sound is turned on. For each video, write three sentences in your notebook that describe a) the main point or principal story, b) an environmental or societal issue that was presented, and c) a solution you think could help improve the situation.

> **Stop and think:** What do these videos have in common? Where on Earth are technofossils starting to accumulate? Would you consider technofossils to be an environmental issue?

Now look around you and think about the items that are currently in your home that might end up as technofossils someday. Couches, coffee pots, lamps, pet food dishes, video game controllers, hula hoops—do you see these items in a new light after learning about technofossils?

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Materials you will need:

- A computer (or an electronic device) with internet access and sound
- The Recycling Gigapixel (available here)
- A notebook and writing utensils

Stop and think: If you were an archaeologist studying technofossil layers 50,000 years from now, what types of hypotheses would you make about humans living in the year 2020? What items do you think you would find the most evidence of? What are some ways you think humans can slow the growth of a plastics technofossil layer?

Share your learning adventure with us!

What did you learn by completing this activity? Do you have any questions? Did you take any photos or screengrabs you would like to share with others? Tag @CanGeoEdu on Facebook, Twitter or Instagram and let us know using the hashtag #OnlineClassroom!

Other ways to complete this activity:

- While on a walk in your neighbourhood, take a series of photos that feature plastic waste, either as litter or being properly recycled or disposed of. For each photo, write a 50-word caption that describes the scene. Combine your photos and captions to make a photo essay.
- After exploring the Recycling Gigapixel, film your own video that highlights the recycling strategy you use in your home with your family, pretending this video would be the eighth video on the gigapixel.
- Use the Recycling Gigapixel to create your own "Where's Waldo" style of activity and share it with family and friends. Challenge them to be the first to find the Pizza Pizza box, the Mr. Freeze box or the Allen's vinegar jug!

Interesting extras:

- Determine your environmental footprint with the Environmental footprint calculator (UK-based).
- The Anthropocene Education Program has three more gigapixels to explore!
- The 10,000 Changes website has explainer videos and infographics that cover the seven different types of plastic.