Sources and Sinks - Purpose and Context

In this activity you will: **Explore how plastic gets into and impacts ecosystems.**

Here, we'll share some background information that will be helpful for completing the Image Card activity.

When scientists talk about pollution, they often use the term "source" to describe where a pollutant is coming from and the term "sink" to describe where or in what the pollutant ends up, is stored, or accumulates. To help remember these terms, you can think of a faucet and kitchen sink – the faucet is the source of water, and the basin under the faucet is the sink where the water ends up in. A source could be a certain activity, product, region, or type of infrastructure like a pipeline or factory that releases a pollutant into the environment. A sink could be any physical or biological component of an ecosystem, for example, the air, soil, a body of water, or a certain plant or animal that takes in a pollutant.

It's important to know how plastics get into and travel around the environment and how the pollution is impacting wildlife, so that we can design better solutions to protect habitats and organisms in them.

Scientists have been studying habitats and ecosystems throughout the world to research where plastics are ending up. They are finding plastics everywhere they look – streams, rivers, lakes, and oceans, the atmosphere, our soils, mountain glaciers, icecaps, and even compost [1, 2]. The size, shape, and the density of each piece of plastic pollution each impact how it gets transported, where it ends up, and which organisms are affected by it. We need a diverse set of solutions to address the many forms of plastic pollution and their various impacts on animals, plants, and habitats.

We've assembled ten photos that depict some of the sources and sinks of plastic pollution, and a couple of prompts to help guide your and your student's analysis of the images.

Sources

[1] Zalasiewicz, Jan, Waters, Colin N., Ivar do Sul, Juliana, Corcoran, Patricia L., Barnosky, Anthony D., Cearreta, Alejandro, Edgeworth, Matt, Galuszka, Agnieszka, Jeandel, Catherine, Leinfelder, Reinhold, McNeill, J.R., Steffen, Will, Summerhayes, Colin, Wagreich, Michael, Williams, Mark, Wolfe, Alexander P., Yonan, Yasmin, The geological cycle of plastics and their

use as a stratigraphic indicator of the Anthropocene. Anthropocene http://dx.doi.org/10.1016/j.ancene.2016.01.002

[2] https://www.unep.org/news-and-stories/story/plastic-planet-how-tiny-plastic-particles-are-polluting-our-soil