



**Lesson Plan
Suggestions –
Elementary
School**

Helpful Links

50+ activities, divided by subject area (history, math, science), to engage students and teach environmental awareness [found here](#)

EPA's list of lesson plans, activity guides, and other online environmental resources, divided into sections like air, climate change, ecosystems, energy, health, waste, and water [found here](#)

NEEF's list of activities and resources for any lesson or subject area imaginable [found here](#)

This resource from NEEF has lesson plans for activities in gardening, geography, water resources, math, energy efficiency, weather, and climate: [Greening STEM Toolkit](#)

National Geographic's lesson plan database has tons of well-designed activities that fit in an entire class period: [right here](#)

NASA has a fun website that students can explore to learn more about sustainability and pollution called [NASA Climate Kids](#)

[Environmental Education Games](#)

Grades K-3

For Science Class:

The Life of a Plastic Bottle

Read book *The Adventures of a Plastic Bottle* (you can buy it [here](#)), or watch the storytelling video [here](#)

[More videos on the Plastic Bottle Life Cycle](#)

Ask students how they could make the life of a plastic bottle longer. (Answers: they could recycle the plastic bottle, they could use the plastic bottle again, they could even turn the plastic bottle into something else, like a bird feeder or a pot for a plant)

Have students write a story about the life of a plastic bottle and draw their plastic bottle.

Our Natural Resources

Students learn about what natural resources are, read a natural resource poem and map, and draw natural resources.

In addition to the material provided, discuss with students how they can preserve natural resources (e.g. What can you do at home to use less natural resources (water, paper)? Sample answers: Turn off faucet when brushing teeth, turn off lights when not using them, use both sides of paper)

For Engineering Class:

Sort that Recycling

Materials: Cans, papers, plastic bottles, plastic bags, other recyclables, and trash. Also 4 bins labeled plastic, paper, metals, and trash.

Have students work together to sort materials into the 4 bins: hold up each material and pass it around, have class vote on which bin it goes in, have one student throw it in once the class decides. Tell class whether they were right or wrong, and why.

Upcycle: Design a bird feeder with household trash

Materials: Have teachers and parents donate any kind of durable household trash: Cans, plastic bottles, plastic bags, old toys, unused building materials such as PVC pipes and mesh (Optional: bird seed).

Discuss with students that household trash builds up in landfills, and in landfills this trash decomposes even slower than usual because of the airtight nature of landfills, plus it takes up a lot of space and energy to maintain a landfill! Tell them that when we reuse items that would usually go in the trash, we are helping the environment by keeping this trash out of the landfills and making sure that new items don't have to be made (making new stuff like a plastic water bottle uses natural

resources and energy, often causing pollution as the byproduct of creating this energy in power plants). So, the students will be solving this problem through reusing everyday trash to make a birdfeeder.

Show the class different pictures of bird feeders, ask them what features these bird feeders all have in common and write these out on the board.

Either in groups or individually, have students look at the materials available, and have them pick out a few. Then, have them draw out 3 different designs that they think would work to build a bird feeder with the objects they picked out. Have students talk about least 1 pro and 1 con for each of their designs, and then choose their final design based on these pros and cons.

Have students build their bird feeders, and then present them to the class once everyone finishes. Students can either bring their bird feeders home or hang them up around the school!

Grades 4-5

For Science Classes:

About Electricity

Ask students about how they use electricity every day. When do you use electricity? (Possible answers: when charging electronics, when using lights, when watching TV, even when taking a shower!)

Watch: [Fossil Fuels 101](#) and discuss alternatives to fossil fuels, what are other ways that we can generate electricity?

Talk about the different methods of reusable energy: Solar power, wind power, water power

Watch: [Renewable Energy](#)

During video: Have students write down 5 facts that they learned about renewable energy.

Discuss with students how they will use less electricity (Possible discussions: turning off lights, unplugging devices when not using them)

Homework: Have students draw a sustainable house: what types of renewable energy would they include in their house?

Earth's Water Cycle

Students work together to illustrate the water cycle as a class. Each student writes an imaginary story about the journey of one drop of water going through the water cycle. Then students discuss some of the reasons why our ocean is important.

For Engineering Classes:

Build a Water Filter

Materials needed: 'polluted' water, coffee filters, sand, pebbles, sponges, cloth, paper, used plastic water bottles, and any other methods of filtration you can think of! (optional: charcoal), to make 'polluted' water: take a bucket of water, mix in soil from outside.

Have students watch [Water Pollution](#) and [Why Care About Water?](#), Ask students: Why is water such an important resource? Why is it so scarce in some places? How do you know that the water you drink is clean? What should clean water look like? What should it taste like?

After discussion, point out that different things need to be taken out of the water before it is drinkable. First sediment and other suspended particles, and then microorganisms and bacteria.

Have students work in groups to brainstorm different ways to get suspended particles and bacteria out of the water, have them write down their ideas and present these to the class.

Give each group of students their materials and tell them to brainstorm and draw a diagram of how they could make a filter using just these materials.

Have students make their water filters, and once all groups are finished pour the dirty water into each filter,

compare each group's water clarity. Point out how hard it is to filter just suspended particles, and how important clean water is to humans and how some people do not have access to this clean water.

Upcycle: Design a bird feeder with household trash

Materials: Have teachers and parents donate any kind of durable household trash: Cans, plastic bottles, plastic bags, old toys, unused building materials such as PVC pipes and mesh (Optional: bird seed).

Have students go through engineering design process to build their bird feeders.

Find the problem: Discuss with students that household trash builds up in landfills, and in landfills this trash decomposes even slower than usual because of the airtight nature of landfills, plus it takes up a lot of space and energy to maintain a landfill! Tell them that when we reuse items that would usually go in the trash, we are helping the environment by keeping this trash out of the landfills and making sure that new items don't have to be made (making new stuff like a plastic water bottle uses natural resources and energy, often causing pollution as the byproduct of creating this energy in power plants). So, the students will be solving this problem through reusing everyday trash to make a birdfeeder.

Research: Have students research what bird feeders generally look like and write down these common characteristics. Have a couple of students read what they wrote aloud, and discuss with the class to see if they agree with these common characteristics.

Discuss limitations: What does this bird feeder need to be able to do? What does it need to have so that birds can use it? Have students write these limitations on the bird feeder down. If they are stuck, give some examples: It needs to be able to support the weight of at least 2 birds. It needs to be able to be off the ground (either on a tree or on a pole). It needs to hold bird seed without it falling out.

Brainstorm Solutions: Have students look at the materials available, if there are many unique materials, have students pick out a few now (If there are not, they can get their materials later). Then, either in groups or individually, have them draw out 3 different designs that they think would work. Have students write down at least 1 pro and 1 con for each of their designs, and then choose their final design based on these pros and cons.

Design Prototype: Have the groups/individual students design their prototype based on the final design they chose in the brainstorming phase.

Test Prototype: Have students take their designs home to hang up or hang them up around the school, watch how they hold up over time!