



Waste Zero Educational Resources for Grades 7-12



These resources have been compiled to teach students about reducing, reusing, recycling, and composting in conjunction with a unit on natural resources, conservation, or environmental science. We hope to help spark a meaningful discussion and inspire students to make a positive environmental impact at home and at school.



Recommended Activity: Material Life Cycle Analysis

- Ask students to pick a material that they frequently encounter (i.e. cardboard delivery boxes, plastic bottles, aluminum cans, plastic bags, paperboard pasta boxes, etc.). Ask them to complete a Life Cycle Analysis on this material.
 - How was this item made?
 - What natural resource is this material made from? (i.e. oil, ore, trees, etc.)
 - What is the extraction and production process like? What effect do these processes have on the environment?
 - Can this item be recycled or composted? You can refer students to our website www.Recology.com/Recology-American-Canyon/What-Bin/
 - What are the environmental impacts of recycling, composting, or landfilling this item?
 - What is the environmental impact of this item being littered or escaping into the natural environment?

Recommended Activity: Visual Waste Assessment

- Have students complete a “waste log” for one week, where they keep track of:
 - What they are disposing of
 - How they are sorting each material
 - Connected to the life cycle analysis activity: what happens once they put their items in the garbage, recycling, or compost?
 - A visual estimation of what percent of their waste is garbage, recycling, and compost
 - Reflect on the experience:
 - Were they surprised by how much they threw away?
 - Were they surprised by the amount of garbage, recycling, or compost they had?
 - Have their observations led them to think of ways to change their behaviors?
 - Does this visual waste assessment have any applications to their regular daily life?

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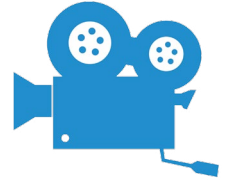
Short Films & Documentaries:



- “Takeout creates a lot of trash. It doesn’t have to.” from The University of California Climate Lab series of videos. (7 minutes)
 - This video dives into how pervasive single-use plastic items are, especially in takeout, and how we can be more mindful about this problem.
 - https://www.universityofcalifornia.edu/climate-lab?utm_source=August+2019+Newsletter&utm_campaign=August+2019+newsletter&utm_medium=email
- “What really happens to the plastic you throw away?” from a TED Talk (4 minutes)
 - Describes what can happen to plastic water bottles after they are used.
 - Note: If you show this video, encourage students to think about the products that recycled plastics make – are any of them recyclable? Usually not.
 - https://www.ted.com/talks/emma_bryce_what_really_happens_to_the_plastic_you_throw_away?utm_campaign=tedsread&utm_medium=referral&utm_source=tedcomshare
- “The Story of Plastic” from The Story of Stuff Project (4 minutes)
 - Details what is going on behind the scenes with our plastics, and what happens to them after we put them in the recycling bin.
 - https://youtu.be/urFZ5o0az_4
- “The Story of Stuff” from The Story of Stuff Project (20 minutes)
 - Focuses on how our linear “stuff” economy can’t work on our finite planet with finite resources.
 - <https://youtu.be/9GorqroigqM>
- “The Story of Bottled Water” from the Story of Stuff Project (8 minutes)
 - Explores how the water bottle industry created demand for a product we do not need, and why we should opt for refillable water bottles.
 - <https://youtu.be/Se12y9hSOM0>
- “We can recycle plastic” from a TED Talk (10 minutes)
 - Talks about the issues with recycling plastic and how one business owner innovated a way to process plastic for reuse.
 - Note: If you show this video, encourage students to think about the products that recycled plastics make – are any of them recyclable in curbside recycling programs? Usually not.
 - https://www.ted.com/talks/mike_biddle

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Short Films & Documentaries Continued:



- “Garbage Dreams” from PBS - (79 minutes)
 - This film follows residents of a community outside of Cairo, Egypt that survives by handling waste, and recycling 80% of the material they handle.
 - Lesson plan and resources here: https://www-tc.pbs.org/independentlens/garbage-dreams/classroom/04_garbage-dreams_lesson.pdf
 - <https://www.pbs.org/independentlens/garbage-dreams/film.html>
- “Plasticized” from Lutman Films (48 minutes)
 - Documentation of the 5 Gyres Institute’s research on ocean plastic pollution, and their research cruise to collect data. Illustrates the scale of the issue of small pieces of plastic in virtually all parts of the ocean.
 - Note that they do use 1-2 swear words when interviewing the scientists. Probably best for a high school audience.
 - <https://www.youtube.com/watch?v=dfcRW7sIrPI>

Reading Resources:



- *The Guardian* has an entire series of articles called “The United States of Plastic” that explore the depth and breadth of our plastic problem.
 - <https://www.theguardian.com/us-news/series/united-states-of-plastic>
- *National Geographic* also ran an entire issue of their magazine called “Planet or Plastic?” and they keep a page on their website updated with recent articles, actions people have taken, and various pledges and ways to get involved.
 - <https://www.nationalgeographic.com/environment/planetorplastic/>