

ENVIRONMENT

Objectives

- Students will be encouraged to become responsible for the environmental impact of their choices.
- Students will examine how they can take responsibility for lessening their impact on the environment through recycling.
- Students will take their new knowledge and use it to educate others in their school, family, and community.

Essential Questions for Students

- How do personal choices impact the environment?
- What personal responsibilities do students, as consumers, have toward others?

Outcomes

- Students will realize their ability to impact the environment.
- Students will develop written and oral presentation skills, such as considering claims and evidence, evaluating a speaker's point of view, posing and responding to questions, writing informative texts, and integrating qualitative analysis with quantitative analysis.
- Students will enhance their ability to conduct research effectively.

Common Core State Standards

English Language Arts Standards, Speaking & Listening, Grades 9-10

- Comprehension and Collaboration: CCSS.ELA-Literacy.SL.9-10.1 – Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on graded 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

English Language Arts Standards, History/Social Studies, Grade 9-10

- Integration of Knowledge and Ideas: CCSS.ELA-Literacy.RH.9-10.7 – Integrate quantitative or technical analysis (e.g. charts, research data) with qualitative analysis in print or in digital text.

Literacy in History/Social Studies, Science, & Technical Subjects, Writing, Grades 9-10

- Text Types and Purposes: CCSS.ELA-Literacy.WHST.9-10.1A – Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons and evidence.
- Text Types and Purposes: CCSS.ELA-Literacy.9-10.2 – Write informative/explanatory texts, including the narration of historical events, scientific procedures, or technical processes.

Community Connections

- Order educational materials from a local recycling facility. Invite the facility to send a speaker to the school.
- Visit a local recycling facility.
- Visit a local green business, such as a restaurant that uses local foods or a business that uses recycled materials or solar power.
- Check with local libraries to see if student work can be displayed for the community.

Materials

- Pre-planning for the Trash Demo lesson (see below): Ideas include, but are not limited to, saving the classroom trash for a week before the lesson, having students bring in all their snack trash for a week (wrappers, chip bags,



soda cans, etc.), or collecting paper in a special trash can for one week. Ask a custodian for a large trash bag or trash can for your project.

- Scale for weighing trash.
- Books about the impact recycling has on the environment

Vocabulary Terms

- **Environment** – The circumstances or conditions that surround someone or something; surroundings. The totality of circumstances surrounding an organism or group of organisms: especially the combination of external physical conditions that affect and influence growth, development, and survival.
- **Recycle** – To extract and reuse materials or substances from garbage or waste.

Lessons

Students will research the development, production and disposal of a product they personally use. Examples include cell phones, clothing, cosmetics, and even the food they eat. Final student projects are intended to be displayed and shared in order to help educate others about the environmental impact of consumer choices. The objective of this project is for teenagers to begin to see the global impact made by their consumer choices.

Building Knowledge (approximately one to two class periods)

- Trash Demo: After collecting trash (see Curriculum Resources), have the students weigh it and discuss how much this really represents. For example: Is it trash from snacks for one week? How much would the class's snack trash weigh if it were collected every week for the entire year? What if they collected snack trash from every student in the entire school? Where is all the trash going? How long will it stay there?
- As a class, have students list the consumer products they use the most (gaming systems, cell phones, computers, cosmetic products, beverage and snack containers, clothing, etc.).
- When they are done, break the class into teams of three to four students and have them select one of the items off the list they brainstormed. Have the teams predict the answers to the following questions regarding their chosen product:
 - Where is the product manufactured?
 - What natural resources are used to manufacture this product?
 - How is this product transported from the manufacturer to the store where students buy it?
 - How long will this product be in a landfill after it is thrown away?
 - What communities are negatively impacted by this product?
- When the teams are done, have them present their predictions to the class.
- After the presentations, explain to students that this concept will be the basis of informative presentations/displays they will create.

Building Compassion (approximately one class period)

- Read article(s) or watch a video regarding the impact of extracting natural resources on the environment.
- Have a whole-class discussion on how this process affects them directly and indirectly as well as how they, as consumers, may be contributing to this problem.
 - What natural resources are used to create this product? Where do the ingredients listed on the product come from? Do students know what all those words on the label mean?
 - After the product is manufactured, how is it shipped to stores around the country—or around the world? What is the environmental impact of the transportation? Is the cost of transportation built into the cost of the product? What is that cost?
 - Is the product, or some portion(s) of the product, recyclable? How convenient is it to recycle this item in your community? If not, how long will it remain in a landfill? What effect might landfills have on the environment in years to come?



Taking Action (approximately two to four class periods)

- Have students each select (or assign to them) a consumer product they purchase and use on a regular basis. Suggestions include: gaming systems, cell phones, computers, cosmetic products, beverage and snack containers, clothing, etc.
- Students will each research their product and create a presentation to help educate others. Areas of product research should include:
 - Natural resources consumed to manufacture this product.
 - Natural resources affected by the manufacturing process of this product.
 - The impact that the manufacturing of this product has on the animal community and the human community.
 - The environmental impact of transporting this product to market.
 - The packaging used in the product.
 - The average life span of the product.
 - The environmental impact of disposing of this product.

This is an excellent opportunity to allow students creativity in their presentations. Ideas include brochures, speeches, skits, or creating a digital presentation (see Communication Resources – Digital Media Resources section for ideas).

- Students should also be encouraged to investigate alternatives to this product that have less of an impact on the environment and are currently on the market.
- Invite local “green” businesses to come to speak to the class. Examples include a grocer who sells locally grown food, or a business that uses solar power.
- Plan a “Green” Science Fair:
 - Together with students, decide on a day or evening when you can have your fair.
 - Invite students, parents, members of your community, and the media to attend the Fair.
 - Have students create visual displays of what they learned over the course of the project; including how they pledge to change their consumer spending habits to have less of an impact on the environment.
 - Have students create pledges that people attending the fair can sign—thereby involving the community in their efforts to keep our planet healthy.

Extension Activities

- Prepare presentations for younger students about recycling.
- Find ways to bring recycling into your school.

Journal Questions

- Many products currently have international trade laws and/or tariffs that impact their production or distribution. Select a product you are familiar with and research any international trade restrictions or tariffs associated with this product. How has this process impacted the product you can purchase in the store?
- How have your attitudes toward consumerism changed?

Accommodations/Modifications

- Have the entire class work on tracking one product, such as a food item or cell phone.
- Track a product from consumer purchase to disposal.
- Create art projects out of reused materials to demonstrate the ability to repurpose items.

Additional Taking Action Activities

- Organize a “Going Green” contest for the school. Have classes submit ideas on how to make the school more environmentally friendly. Find ways to implement the top three ideas.



- Start a school garden to help provide organic vegetables for student lunches or snacks. Pizza and salsa gardens (cultivating herbs and other ingredients for those dishes) are both fun to grow and grow well in containers.
- Host a “Worm Composting Night” at school. Have fun working together to build composting bins for families to use at home. Families can bring their own supplies or locate a donor for the supplies. This could also be used as a school fundraising activity.
- Research a common food item from the school’s lunch menu and find out what it takes to get this item to the table. Discover how many miles it has to travel before it comes to your school, how long it takes to get to school, what chemicals are used in the process, and how much fossil fuel is used in growing and transporting it. Can you figure out what the food’s carbon footprint is? Once you have all the answers, find a way for your school lunch to make less of an environmental impact.
- Conduct a “water use audit” for your school and the school grounds. Look at where water is being wasted and what products or chemicals are being put into the water on a regular basis. Investigate ways your school can be less wasteful and more water-wise.
- Write your local representatives regarding environmental issues that are affecting you and your community.

Portfolio Development

- This is an excellent project to turn into a portfolio, especially if students choose to take their knowledge past the classroom. Encourage students to write about their findings and how this project has changed their perspective on global issues surrounding manufacturing and consumerism. Encourage students to use their knowledge to take further action toward making the school greener or volunteering on behalf of other environmental efforts.

Family Connection

- Send an informative letter or email outlining your project to students’ families.

