

Recycling Lesson Plan- Don't Waste the Moment

Driving question- How much of the waste which is thrown away in the school cafeteria may be composted or recycled?



Lesson- Divide students into groups so that each group may be given a different assignment for collecting data about the waste generated in the school cafeteria; some students may collect data in different locations, during different breakfast and lunch periods, or on different days during the week. Students will survey and record items placed in the trash and record the number of students eating during that time. Their data collecting may include categories such as Styrofoam plates, plastic forks, food scraps, paper products, and packaging materials. After collecting data, information must be categorized as compostable, recyclable, or trash.

Information from each group may be compiled on charts. If students have experience working with spreadsheets, they may consider using Microsoft Office Excel or Google forms; tutorials are available online. TechSteps also provide instruction for Excel. Graphs may be created to illustrate data from the cafeteria waste research.

After analyzing their data, students will be asked to identify how much waste was generated; they may express it as the mass or the volume of the waste. They should provide details about what was thrown away and state what could be have been recycled or composted. Students should be able to answer questions about how they determined what could be composted and what the triangles on plastic materials represent.

Following their research, student teams should propose a solution to reduce the amount of solid waste in the garbage and present it to the class. They should consider the best way to manage the sorting of the waste materials from the school cafeteria. How might students be involved in the process? Students should cite resources used in their research.

Informational Text- As part of their presentations, students should be prepared with an, “If you want to learn more...” recommended reading for their peers, which includes the book or article and the name of the newspaper or magazine, author, a quick summary, and the ISBN.





Additional Information

For more than thirty years, the U.S. Environmental Protection Agency (EPA) has been collecting data on the generation and disposal of waste in the United States. Waste reduction and recycling programs across the country are measured and used to determine the amount of waste generated. In 2010, Americans generated about 250 million tons of trash and recycled and composted over 85 million tons of material, which is equivalent to a recycling rate of 34 percent. On average of the 4.43 pounds of solid waste generated by every person each day, we recycle or compost about 1.51 pounds of that waste.

Recycling is the process of turning used waste and materials into new products. This prevents potentially useful materials from being wasted, as well as reduces energy use and pollution.

The energy required to convert raw materials such as minerals, oil, and trees into metals, plastics, and paper is far greater than the amount of energy required to collect and recycle our paper, bottles, and cans into new products.

A wide variety of different materials can be recycled, including paper, plastic, glass, metal, textiles and electronic equipment. Historical evidence shows that humans have been recycling various materials for thousands of years.

Recycling Resources

<http://www.wvcommerce.org/directory/recycling/default.aspx>

Find recyclers in WV.

<http://www.state.wv.us/swmb/> Solid Waste Management Board

<http://www.terracycle.com/en-US/> Recycling systems for previously non-recyclable or hard-to-recycle waste.

<http://www.facingthefuture.org/> A nonprofit leader whose mission is to create tools for educators that equip and motivate students to develop critical thinking skills, build global awareness and engage in positive solutions for a sustainable future.

<http://www.epa.gov/recycle/> Learn how reducing, reusing, and recycling can help you, your community, and the environment by saving money, energy, and natural resources.

<http://www.epa.gov/osw/nonhaz/municipal/msw99.htm> Characterization fact sheet and data tables provide the most recent available data on annual US waste generation, recycling, and disposal, as well as the benefits of recycling.

http://www.afandpa.org/docs/default-source/default-document-library/recycling-and-epr_white-paper.pdf American Forest & Paper Association report on recovery, 2012.

<http://plastics.americanchemistry.com/Education-Resources/Publications/2011-National-Post-Consumer-Plastics-Bottle-Recycling-Report.pdf> 2012 study to quantify the amount of high density polyethylene (HDPE) and polypropylene (PP) bottles collected and the rate of recycling of those bottles.

<http://www.cancentral.com/curriculumSelect.cfm> Can Manufacturers Institute's educational curriculum.

<http://www.jason.org/partner/isri> School curriculum regarding scrap metal recycling.