What To Do With The Poo?

Grade Level

Grades 5

Engage

This activity is designed to start your students in recognizing themselves as scientists and thinking critically about problem-solving. The goal is to teach concepts through discovery and to encourage using scientific thought processes. As with all lessons provided, please feel free to adapt them according to your students' abilities. Some of your students may be early readers, in which case you may find it more successful to lead activities and discussions as a whole group rather than using individual Research Plan sheets. Certain scientific vocabulary may or may not be appropriate for your students' level of understanding. Take these ideas, make them your own and your students will have a greater chance at success.

How much waste could be reduced if the class composted at school lunch?

1. Begin this lesson by telling students that they will be investigating compost. As a class, have students research the differences between the words "compost" and "recycle." Discuss with the whole group so everyone understands the meaning of the words.
2. If your students are familiar with brainstorming and recording their ideas, break them into small groups. If your students need more guidance, work with them as a large group. Engage your students in a discussion of what they predict the answer to the question to be. More importantly, why do they think this?

Explore

3. Continue with the above discussion and encourage the group to come up with ways that they could investigate the question and test their predictions scientifically (all suggestions are welcomed). What tools might they need to carry out their suggested explorations? Are there materials that would help them find the answer? Should they be making observations? What kinds of records will they need to keep? What will they do with the information once they have it? And how will they know that they have successfully answered the question? Allow a wide variety of ideas and encourage conversation amongst the students to refine the details of their ideas.

4. Ideas should be recorded on the Research Plan sheets. Small groups can record their own answers or you can record ideas as a group.

Explain

5. Explain to the students that you are going to monitor compostable waste from school lunches for a week. They will only monitor the amount of waste their class generates, not the entire school.
6. Have students make a list of typical lunch items that could be composted. If working in small groups, have each group share until a large class list of compostable items is generated.
7. Students will need to determine how best to keep track of the compostable waste. Do they want to weigh the compostables each day? Would they like to count the items that could be composted? Amounts should be recorded for later use.

Adjustments for Social Distancing

How your on-site school days and lunch now operates within your school may change how your class is able to collect their data. Split schedules may mean that you choose to collect data for a set number of days or have students collect data while they are at home. It may be necessary for each student to record the amount of their own compostable waste individually rather than collecting weights or counts together at a trash can.

8. At the end of the week, have students determine how much waste generated by their class could be kept out of landfill if it were composted instead. Can they estimate how much waste this would be if they had measured for the whole school?

Expand

9. Ask students if they can explain why composting waste is beneficial. If the school was able to compost lunch waste, what would students want to do with the compost that is produced? If students are interested in further exploring this concept, they can explore different methods for composting their lunch waste to see if something could be planned for the school or classroom.
10. In addition to food waste, other things are compostable. At the Zoo, waste from herbivorous animals is able to be composted and turned into Zoo Poo, a fertilizer used in the flower gardens across the Zoo and Cleveland Metroparks reservations. For example, one African elephant can generate up to 300 pounds of waste per day! With five elephants at the Zoo, that's a lot of poo! Most of this is plant material that passes through their bodies undigested. Rather than throwing it out in the trash, composting this waste keeps it out of a landfill, allows the decomposers in the environment to do

their thing, and results in a nutrient-rich fertilizer. To see this process in action, watch the decomposer video that accompanies this unit.

Assess

11. Review the information that was collected and discuss if the group's predictions on how much compostable waste they would generate was a match to what was actually observed.
12. If the students are working in small groups, observe their work and review what they are writing on the Research Plan. If working as a whole group, fill in the Research Plan together.

Standards

Ohio Academic Content Standards
Grade 5 Life Science Topic: Interconnections Within Ecosystems All of the processes that take place within organisms require energy.

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Supplemental Materials

My Research Plan

1. What is my research question?
Is it a good question?

How much waste could be reduced if the class composted at school lunch?

2. How can I get my information?

3. What will I do with this information?

4. How will I know I did my job well?