

Here Today... Here Tomorrow???: Biodegradable Experiment

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| Grade Level (Req.): 3rd-4th grade | Content Area (Req.): Human Geography, Physical Geography, Science | Unit (Opt.): |
| Connections to Other Disciplines (Opt.): • • • | | |
| Time Frame (Req.): 2-3 class periods | Goal (Req.): To help students understand the importance of biodegradable materials and the effects on our environment. | |
| | Objective (Req.): Students will be able to see the importance of using biodegradable materials to help the earth. | |
| Materials Needed (Req.): • Biodegradability Activity Sheet (adapted version taken from: "Gifts of Gold" – 4H Cooperative Curriculum System) • Packing peanuts • Eco-foam peanuts • Two clear bowls • Water • 3-4 containers for each small group or partners (experiment) • Website: www.iowacom.org (activity book) | New Vocabulary (Opt.): • • • • • | |
| Anticipatory Set/Introduction [Inquiry Question is required] (Req.): What does it mean when something is "biodegradable"? | | |
| Instructional Sequence/Procedure (Req.): 1. Start the lesson by showing the students packing peanuts and Eco-foam peanuts. Discuss how packing peanuts are used and how they are disposed. 2. Put some packing peanuts in one bowl of water and Eco-foam in the other. 3. Discuss the differences they observe. 4. Introduce the word "biodegradable". 5. Compare the biodegradability of the two types of packing peanuts. 6. Discuss whether we should try to invent more products that are recyclable or biodegradable. Then in small groups, have students brainstorm things that would be good to produce as recyclable or biodegradable. Have them record these products on large sheets of paper. Display their results and discuss as a large group. 7. Assign students to bring in one item from home to test for biodegradability. These items should be things that are usually thrown in the garbage/landfill and will fit in a container of water. 8. (Day 2) Make a list of the items brought in for the experiment. Make predictions as to whether or not the items will show evidence of being biodegradable within the time frame of our experiment. In their small group, or with their partner, start the experiment. Write down | | |

observations at the times indicated on the activity sheet. Go back to the list of items. Highlight items that were found to be biodegradable. Discuss results. What can we do with this information?

9. Extensions: 1) Choose a disposable product. Write the company to find out what they are doing to help the environment (i.e.: if that product is recyclable/biodegradable, is made from recyclable or biodegradable products...) 2) Make "Biodegradable Corn Plastic." (pg. 8 of "Corn is A-Maize-ing" activity book)

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Formative Evaluation (Req.): Class participation and discussion

Assessment (Req.): Complete the Biodegradable Activity Sheet

Iowa Core Curriculum Standards Used (Req.):

- Geography, grade 3-5: Understand how physical processes and human actions modify the environment and how the environment affects humans.
- Earth & Space (Science), grade 3-5: Understand and apply knowledge of properties and uses of earth materials.
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Common Core Curriculum Standards Used (Opt.):

- Speaking and Listening, grade K-5: Participate in collaborative conversations with diverse partners about specific grade level topics and texts, building on others' ideas and expressing their own clearly.
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NGS Standards Used (Req.):

- How Human Actions Modify the Physical Environment
- How Physical Systems Affect Human Systems
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Five Themes of Geography Used (Req.):

- Human-Environmental Interaction
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School District Standards and Benchmarks (Opt.):

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21st Century Universal Constructs (Opt.): Critical Thinking

Other Disciplinary Standards (Opt.):

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Other Essential Information (Opt.):

Other Resources (Opt.):

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