

Environmentalism: Biodegradable Cutlery

Adventure Description:

In this adventure, you will think like an environmentalist and create knives, spoons, and forks that are biodegradable and won't harm the environment.

Activity

Step One: Background on Plastic Utensils (5 to 10 minutes)

- As a class, brainstorm pros and cons to why people use plastic utensils.
 - Pros:
 - You throw them away instead of having to take the time to wash them and put them away.
 - They are very inexpensive.
 - Using them could cut down on the spread of disease.
 - Cons:
 - They are a single-use item. You use them once, then throw them away. Very wasteful!
 - They sit in landfills for 100's of years before they break down into smaller pieces. Some parts of plastic utensils are harmful to the soil.
 - They are created using petroleum, which is oil. Oil is a natural resource which is in high demand and hard on the environment.
- Next, Show **Handout: Calculating Plastic Utensil Use**. Explain to students that the class will calculate how many plastic utensils are used by kids across the United States.
- Explain that environmentalists are concerned about the huge number of knives, forks, and spoons which sit in a landfill every year. Environmentalists are scientists who work to understand and protect the environment.
- Explain to students that environmentalists have come up with an idea to solve the problem of plastic utensils' sitting in landfills. They will create utensils that are biodegradable! 'Biodegradable' means that a material can break down and not harm the environment. When materials are biodegradable, they don't sit around in a landfill!

Step Two – Creating Biodegradable Utensils (20 minutes)

- Explain to students that they will create biodegradable silverware and then test them out to see if they work.
- Show **Handout: Steps to Make Biodegradable Utensils**.
- Lay out materials that are biodegradable and not biodegradable. Students will have to choose which materials to use for their utensils.

Please contact Allison Bischoff, Director of Teacher Support, at allison@rozzylearningcompany.com or 314-272-2560 with questions.

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- Examples of biodegradable materials:
 - Cardboard
 - Wood Chips
 - Paper
 - Cotton Balls
 - Yarn or string
 - Popsicle sticks
- Examples of non-biodegradable materials:
 - Tape
 - Pipe cleaners
 - Paper clips
 - Styrofoam
 - Plastic wrap
 - Aluminum foil
 - Straws
- Have students choose materials that are biodegradable and begin to build their utensils.

Step 3: Testing Utensils (15+ minutes)

- Explain to students that they will now test their utensils to see if they will work! For example, a fork or spoon should be able to pick up a piece of food and a knife should be able to cut a piece of food.
- Provide each student with a small piece of banana on a paper plate.
- Have students experiment to see if they can cut or pick up a piece of banana with their new utensils.

Step 4: Reflection (5-10 minutes)

- As a class, discuss whether students' utensils were able to work. What would they change about their design to make them work better?
- Next, have students volunteer to present their utensils to the class. Have a class discussion on whether all materials selected were biodegradable.

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Materials List

Provided online:

- Handout: Calculating Plastic Utensil Use
- Handout: Steps to Make Biodegradable Utensils

Not provided (Each group needs):

- Examples of biodegradable materials:
 - Like: Cardboard, Wood Chips, Paper, Cotton Balls, Yarn or string, Popsicle sticks
- Examples of non-biodegradable materials:
 - Like: Tape, Pipe cleaners, Paper clips, Styrofoam, Plastic wrap, Aluminum foil, Straws

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