Rubbish and Recycling

Upper Primary

Key Inquiry Questions

1. What is waste, and where does waste go?
2. What are the 3 R's of recycling?
3. What can be done to dispose of waste properly or eliminate it altogether?

Learning Outcomes

1. Students will be able to define what waste is and where it should go by the end of the lesson.
2. Students will learn how to properly dispose of waste or eliminate creating waste at all by the end of the lesson.
3. Students will be able to promote the 3 R's and reducing waste by creating an informational poster by the end of the lesson.

Sustainability Curriculum Goals

Systems Thinking:

1. All forms of life, including humans, are connected to each other through man-made and natural ecosystems on which their well-being depends on.

Sustainable Futures:

1. A sustainable future across social, economic, and ecological systems is accomplished through informed action and decision making at the individual and community levels that place a value on fairness across both present and future generations.
2. Actions associated with a sustainable future reflect values of care, respect, responsibility, empathy, and compassion for all living and nonliving things.

Activities/Goals:

1. Students will engage with sustainable agriculture, water and land conservation, and proper waste disposal practices.

Overview:

The lesson will begin with students collecting their trash for a week to see how much waste they actually create. After students analyze their waste, they will participate in a reading comprehension activity that teaches them how to properly dispose of waste, reduce waste, and recycle it (if possible). Students will then create posters to showcase and share what they have learned with the community.

Materials

SolarSPELL Resource:

1. "A Story About Waste Management" (Environment > Waste Facts > "A Story About Waste Management")
2. "What a Waste" (Environment > Waste Facts > "What a Waste")

Other:

1. Science journals
2. Pencils
3. Trash collection from throughout the week
4. Sheets of paper, colored pencils, markers, or crayons for posters

Suggested Procedure

- Instruct students to collect their trash for one week.
    - Tell students that they will only be collecting their own trash, not their entire families' trash. However, if a piece of trash comes from something the whole family used (as in a shared item), like an empty gallon of milk, then the student should collect those items.
        - Trash will not include food waste for this exercise.
    - If students are unable to collect their trash for a week, ask students to write down everything they throw away for one week.

Before Lesson:

- After a week has passed, ask students to write down two qualitative and two quantitative observations they have about their trash.
    - Qualitative observations are non-numerical observations.
        - For example, there is more plastic trash than paper.
    - Quantitative observations are numerical/math based observations.
        - For example, I collected 12 plastic water bottles.
    - Call on a few students to share their observations.
- After the observations are complete, ask students how they usually dispose of/get rid of their waste.
    - Possible answers: throw it away in a trashcan, throw it outside, burn it, recycle it
    - If most students say they throw it in a trashcan, follow up by asking where they think their trash goes.
        - Trash that is not burned or thrown straight on the ground often goes to a landfill.
            - A landfill is a large hole in the ground where your trash is buried.
- Lastly, ask students which of the items they collected they think they could live without.
    - Possible answers: plastic bags, plastic water bottles, and/or styrofoam.

During Lesson:

- Instruct students to sort their waste by putting similar items together.
    - Ask students what the items have in common.
    - General categories: paper, plastic, metal, glass
- Pair students up.
- Give each group the worksheet titled *"What in the Waste?"*
    - If printing is not an option, ask students to read their sections, talk with their group about what they learned, and then go over the questions as a class.
- Assign every other pair "option 1," "option 2," or "option 3".
    - Option 1: Instruct students to read "A Story About Waste Management" and page 31 of "What A Waste!"
    - Option 2: Instruct students to read "What A Waste!" (pages 3 - 8)
    - Option 3: Instruct students to read "What A Waste!" (pages 14, 15, 23, 25)
- After students have completed their worksheets as a group, make groups of students so there is at least one person from each of the 3 different groups in the group.
- Tell students to share and discuss their answers, and to complete the blanks on their worksheets when listening to their peers.

After Lesson:

- Tell students to look back at their observations from their rubbish collection.
- Instruct students to draw, in their journals, a few ways the rubbish in their piles can be harmful and a few ways they can reduce the rubbish they create.
    - Ask students to think about if this list is different or the same from the list they created in the beginning of class.
- Call on a few students to share.
- Option 1: Give each student a sheet of paper, and ask them to create a poster to promote the three R's and caring about waste.
    - Note: it is recommended that you give students at least 20 minutes to complete their posters.
    - Hang the posters around the school and/or the community for everyone to see!
- Option 2: Challenge the students to take pieces of their waste from their collection and transform it into something they can use!
    - For example, students can turn and old t-shirt into a bag to use as a replacement for plastic bags, weave plastic bags together to create a piece of art, or they can create a garden using old plastic jugs and containers.

What in the Waste?

Group 1: A Story About Waste Management and What A Waste! (page 31).

Reading: A Story About Waste Management

1. Circle all of the items that are examples of rubbish from the story (Hint: take a close look at the pictures to find other rubbish items not mentioned in words):

Ulu leaves Plastic Bags Cows Plastic Bottles Paint Cans Tin Cans

2. Why should Sina not dump the rubbish in the river?

3. Why should Fatu not dump the rubbish in the ocean?

4. Do you think the rubbish should be burned in a fire? Why, or why not?

5. Why can Ulu leaves be buried in the soil, but not other rubbish?

6. To take up less space in the rubbish dump, plastic bottles and cans should be:
   A. Crushed
   B. Squashed
   C. Left alone
   D. Both A and B

Reading: What a Waste!

1. Explain why the three creatures were upset with Joe.

2. Can you name three ways how you think people can change their ways to reduce the waste they create?

Group 2: What a Waste! (pages 3 - 8).

1. What is waste? Can you list a few examples of some waste we create?

2. What three things should we ask ourselves before throwing away waste?

3. Which of the following are ways paper or cardboard can be recycled or reused?

   A. Wrapping paper
   B. Homemade cards
   C. Using both sides of the paper
   D. All of the above

4. What are most plastics made from? Why are plastics dangerous to the environment?

Group 3: What a Waste! (pages 14, 15, 23, 25).

1. What are the three ways you can create less waste?

2. What is the Pacific Garbage Heap and how big is it?

3. Which of the following bags are better to use instead of plastic bags?

   A. Paper
   B. Cloth
   C. No bags
   D. All of the above

4. What happened to Silly Stan because he did not give a hoot about waste?

What in the Waste?

Answer Key

Group 1: A Story About Waste Management and What A Waste! (page 31).

Reading: A Story About Waste Management

1. Circle all of the items that are examples of rubbish from the story (Hint: take a close look at the pictures to find other rubbish items not mentioned in words):

Ulu leaves Plastic Bags Cows Plastic Bottles Paint Cans Tin Cans

2. Why should Sina not dump the rubbish in the river?
   - *Answer: Because it will make the water unclean.*

3. Why should Fatu not dump the rubbish in the ocean?
   - *Answer: Because the fish we eat also need clean water to live.*

4. Do you think the rubbish should be burned in a fire? Why, or why not?
   - *Answer: Rubbish should not be burned because burning plastic can make the air unclean.*

5. Why can Ulu leaves be buried in the soil, but not other rubbish?
   - *Answer: they will make the soil healthy because they come from nature*

6. To take up less space in the rubbish dump, plastic bottles and cans should be:
   E. Crushed
   F. Squashed
   G. Left alone
   H. Both A and B

Reading: What a Waste!

Explain why the three creatures were upset with Joe.
   - *Answer: The creatures are upset because their home is being turned into a rubbish dump, forcing them to move.*

Can you name three ways people can change to reduce the waste they create?
   - *Answer: the answer is not in the reading. This question is meant to inspire creative thinking, thus, there is no one correct answer.*

Group 2: What a Waste! (pages 3 - 8).

1. What is waste? Can you list a few examples of some waste we create?
   - *Answer: waste is something that cannot easily be broken down and turned back into soil.*

2. What three things should we ask ourselves before throwing away waste?
   - *Answer: Is it really useless?*
   - *Answer: Can it be re-used?*
   - *Answer: Will it harm the environment when I throw it away?*

3. Which of the following are ways paper or cardboard can be recycled or reused?

   E. Wrapping paper
   F. Homemade cards
   G. Using both sides of the paper
   H. All of the above

4. What are most plastics made from? Why are plastics dangerous to the environment?
   - *Answer: most plastics are made from crude oil. Plastics do not break down easily and can cause animals who eat them to die.*

Group 3: What a Waste! (pages 14, 15, 23, 25).

1. What are the three ways you can create less waste?
   - *Answer: Reduce, Re-use, Recycle*

2. What is the Pacific Garbage Heap and how big is it?
   - *Answer: a large floating heap of plastic that is the size of Kwajalein.*

3. Which of the following bags are better to use instead of plastic bags?

   E. Paper
   F. Cloth
   G. No bags
   H. All of the above

4. What happened to Silly Stan because he did not give a hoot about waste?
   - *Answer: Silly Stan died because he let his rubbish pile grow too big and did not care about creating waste, so much so that his rubbish pile fell on top of him.*