Chapter Three,
Lesson Two:

How Can We Reuse Some of Our Resources?

Concepts and Skills Addressed:

Social science
Recycling awareness
Arithmetic

Materials Needed:

Trash bag filled with (clean) recyclable and nonrecyclable items weighing about 3.5 pounds (1.6 kilograms).

Materials Supplied:

Glossary of terms
Discussion of questions and answers

Students will learn ways in which they can contribute to reducing waste through recycling resources found in trash as well as reusing certain materials and thereby reducing the trash they are producing.

A. Procedure

1. Place students in groups of two.
2. Ask each question and give students time to listen to each other's answers.
3. At random, call on students to tell the class how their partner answered the question.

4. Continue this process, or begin addressing questions to the class as a whole group.
5. At the appropriate time, introduce the bag of throw-away items and discuss, following the questions.

B. Class Discussion

What can we do to reduce the amount of trash we create each day?

Answer: We can help reduce the trash we create by reusing items we are now throwing away, recycling many of the resources in our trash, and by buying products indicating they are recyclable and recycled.

REDUCE, REUSE, RECYCLE –
THE 'NEW' THREE Rs

Is it important to recycle? Why?

Answer: Yes. By recycling we will reduce the amount of trash each one of us produces each day, and lessen our dependence on landfills and other waste disposal methods.
(Teacher introduces bag of recyclable and nonrecyclable items.)

Look at this bag of trash. Does it seem like a lot?

Answer: It's not a lot by itself, but on average, EVERYONE throws out about this much trash each day. Numbers vary from two to three pounds per day.

Are there things in our trash that we could reuse? What are they?

(Teacher spreads items out on a table or passes out an item to each student or group of two students.)

If each of us makes 3.5 pounds of trash each day, how much does that mean our class is responsible for each day?

How much do all the students in our school throw away each day?

How do you think the number 3.5 pounds was calculated?

> **Answer:** The number came from weighing all the trash collected from people's homes, offices and factories in a single day and dividing that number by the number of people living in the area the trash came from.

Will that number ever change? Why?

> **Answer:** The number could change and it could go up or down. We would like it to go down. We throw away too many resources that could be recycled.

Which of these products can be recycled? Which cannot?

What about other types of recyclables? How can we cut down on the amount of paper we use?

> **Answer:** Buy fewer products packaged in nonrecyclable containers, or containers not made from recycled materials. When possible, use both sides of sheets of paper, etc.

Recycling aluminum cans is a common practice for many of us. Why is aluminum easier to recycle than some other materials?

Answer: The aluminum manufacturing industry has encouraged aluminum recycling for over 15 years by establishing convenient recycling centers in many communities across the country. People who bring aluminum to these centers are often paid for their efforts, which encourages them to do it again. The same is true for newspaper through paper drives.

Does it matter that glass comes in different colors?

Answer: Yes. Each type of colored glass must be recycled separately to make sure that clear glass remains clear, green glass remains green, etc. If the glass is separated before it goes to the recycling center the people who buy this material will pay more for it.

Look at the items our class identified as nonrecyclable. Is it possible to buy or store the products that came in them in recyclable containers? Or to find new uses for these items? How?

Answer: Yes. Many of the packages can be replaced by recyclable containers. And, Some items may find new uses: Old clothes make good rags, wood chips can be mixed into a compost pile, etc.

What can we do in the future about materials that must go to a landfill?

Answer: We can find ways to make these materials useful and valuable by finding new ways of recycling them that are safe for the environment. In Chapter Four, we will look at the big picture: How both recyclables and nonrecyclables and the trash each of us creates each day fit into the only world we have to live in.

Science
Math
Social Studies
Language
Activity

Recycling Quiz Bowl

Objective

Students will more fully understand the concepts of recycling and environmental protection by playing a Quiz Bowl-style game.

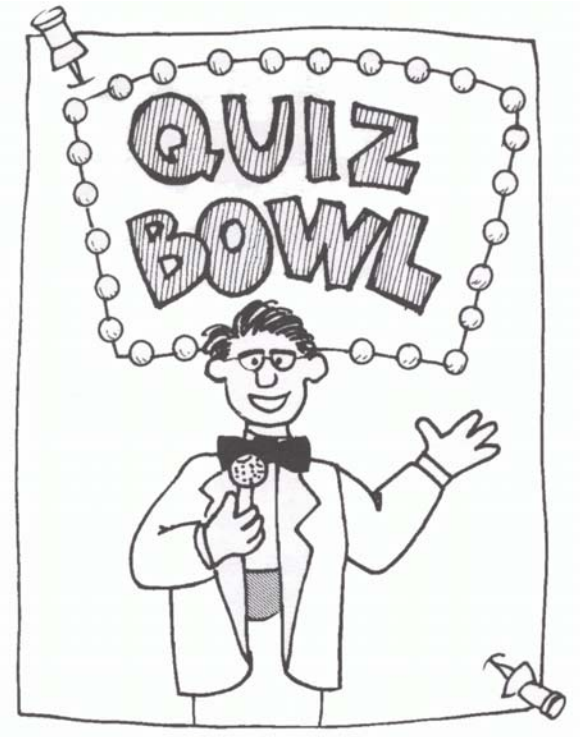
Materials Supplied

Data comprised in the *MOBIUS Curriculum: Understanding the Waste Cycle*, Sample Questions.

Materials Needed

Paper, pencil, chalkboard for scoring, timer or clock.

Procedure



1. The object of the game is to score points by answering questions correctly. The winner is the team who has accumulated the most points after the bonus question.
2. Divide the class into two teams, Team A and B, or give them names.
3. Move students and desks to accommodate the teams. Students may be responsible for coming up with answers individually, or they may take turns giving answers after discussing them as a group.
4. Write quiz questions for the teams or have the teams write them for each other. You will need a total of about 20-30 questions (10-15 per team).
5. Teams alternate answering questions within a time period you designate.
6. Choose a facilitator and scorekeeper (teacher, student).

How to Play:

1. Determine which team will go first.
2. Team A draws a question. The scorekeeper reads it. Team A than has a set time period to formulate an answer, either individually or through discussion. The team must answer by the end of the designated time period. Then it is Team B's turn.
3. If questions are complied by the instructor, you may give teams the option to pass two questions per game to the opposing team. If Team A passes a question to Team B, Team A must draw and answer the next question passed to them on the next turn.
4. This part of game is timed to last 15 minutes
5. After 15 minutes, a bonus question is asked. Before it is asked, both teams write down how many points they will wager on the final question. If they wager two points and answer correctly, they add two points to their score. Likewise, if they answer incorrectly, they

lose two points. The teams cannot wager more points than they have won. The teams have two minutes to come up with their answers to the bonus question.

Scoring:

Score two points for a correct answer and zero points for an incorrect answer or no answer.

Optional Activity:

Quiz Bowl could be presented in a television game show format with a host and commercials on recycling. Example: "Good afternoon, I'm your host, (name), and this The Garbage Game!"

Suggested Quiz Bowl Questions (Try writing some of your own!)

1. How much trash does each throw person throw away daily (3.5 pounds or 1.6 kiolograms)
2. What is the main ingredient in paper (wood pulp)
3. What material makes up 32% by weight and 30% by volume of a landfill? (paper)
4. What is the main ingredient in glass? (silica or sand)
5. What is a material that can be made from recycled plastic? (carpet, lumber, insulation, pot scrubbers, etc.)
6. How much of our trash could we compost if we had a backyard compost pile? (20%)
7. What percent of the trash in landfills is plastic? (9.1% is plastic)
8. What is the most common form of waste disposal? (landfills)

9. What kinds of waste disposal facilities can be built to create electricity? (incinerators and landfills)
10. What is the name of the man who invented the MOBIUS strip? (Augustus F. MOBIUS)
11. What is an example of something made from recycled paper? (egg cartons, cereal boxes, cardboard, packing materials, etc.)
12. What are the New Three R's? (Reduce, Reuse, Recycle)
13. What are the four ways to dispose of trash in an integrated waste disposal system? (landfilling, incineration, composting, recycling)
14. Are open dumps the same as sanitary landfills? (no)
15. What is disposed of in an ashfill or monofill? (incinerator ash)
16. What is the rich material created by composting? (humus)
17. What are three things that we use everyday that can be recycled? (newspaper, beverage cans, soup cans, bottles, jars, paper)