



Lesson: Cycles and RE-Cycles

Grade: K-3

Subject: Science and Social Science

Objective:

Students will:

- apply their knowledge of cycles to understanding the process of recycling
- identify recycling as a cycle that can help conserve natural resources

Teaching Time: 45 minutes

Materials: Transparency, Recycle Lifecycle: Glass; instructions for The Cycle Game; 3" x 5" index cards; video, Lifecycle Recycle: Glass and Paper. (See Teacher Resource section for availability.)

(Continued)



REDUCE
REUSE
RECYCLE

Background:

(Prerequisite: “Cycles in Nature”) Everything that we make, use, and throw away originates from the earth. Natural objects return to the earth through cycles and sometimes people mimic nature by remanufacturing used materials into new materials in a process known as recycling. Thinking in cycles can help us to remember that energy, natural resources and money are all used up in bringing everyday objects to us. By reusing our resources, we can save what would normally be lost in a landfill. A landfill is not part of a cycle because our waste is simply buried and stored for hundreds of years—it is not actually “cycled” back to the earth! (Review Lesson: Look at a Landfill and explain how landfill violate nature’s cycle by slowing or stopping decomposition of natural materials).

Procedure:

- Review with students some of the cycles that they have studied already. Students should recall, the days of the week, months of the year, the tree cycle, and the water cycle.
- Draw the cycle of decomposition also know as “composting” on the board. Review how garbage is buried and “stored” in a landfill. **How does a landfill break the natural cycle of decomposition? Air and water is present in very small quantities and sunlight cannot enter at all!** Tell the students that scientists have found newspapers that have been buried in the landfill for more than 20 years that are still readable!
- Write the word “recycle” on the board. **What do you think this word means? It means to make a material into something to use again. It also means that we don’t have to mine or harvest raw materials from the earth to make this new item--which saves natural resources and helps reduce pollution.** Many cycles depend on people to make them happen. To recycle means to give the object a new beginning by changing it into something can be used again.
- Show the overhead and explain the recycling symbol. **Look for this symbol on packaging or products to see if it may be recyclable in your community or if it contains any recycled content. This is one way you can help “Close the Loop” and be sure that the cycle is completed.**
- Show the video Lifecycle Recycle: Glass and Paper (optional).
- Display the transparency of *Recycle Lifecycle: Glass*. Although it is not nature’s cycle, it is created by humans and it does give new life to used objects!

Reflection/Response:

- Have students draw or write a story about the lifecycle of glass and/ or paper that they have seen in the video or on the worksheet.

Extension:

- Play “The Cycle Game.”

Common Curriculum Goal:

Science: Physical Science and Unifying Concepts and Processes and Science in Personal and Social Perspectives

- Matter: Understand structure and properties of matter
- Apply foundation concepts of change, cycle, cause and effect, energy and matter, evolution, perception, and fundamental entities
- Describe how daily choices of individuals taken together, affect global resource cycles, ecosystems, and natural resources.

Social Science: Analysis

- Identify, analyze, and select a course of action to resolve an issue.

Grade 3 Benchmark:

- Describe objects according to their physical properties.
- Identify examples of change.
- Arrange parts of a cycle.

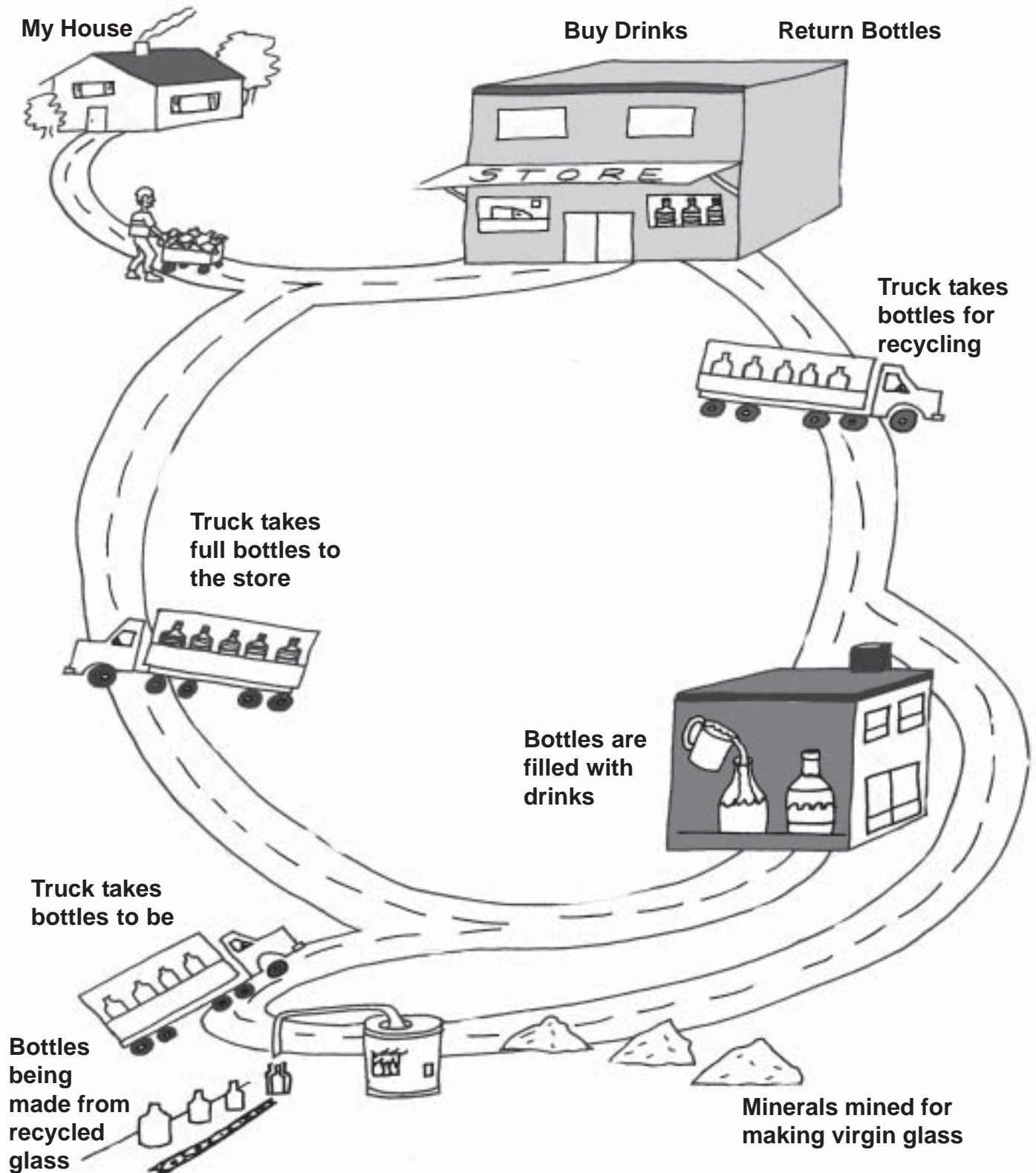
(Optional:) bring an item from your home that has the recycled symbol and/or recycled-content symbol on it to show students.



Worksheet: Recycle Lifecycle- Glass

Student Name: _____

Number the steps of the lifecycle of glass. The numbers will vary in order depending on where you start!



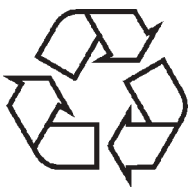


The Cycle Game

This game helps students understand the meaning of cycles in general, and recycling cycles in particular. As students copy the list onto 3" x 5" cards, discuss which materials come from renewable resources and which come from nonrenewable resources. (For example, plastic and polyester=oil, etc.) These items are a suggested list, add other items if you wish. Refer to the Natural Resource Bulletin Board from Lesson: Natural Resources.

tin can	synthetic clothes	paper
car	rain	wool sweater
food	lifecycle of a pet	building
minerals	aluminum	petroleum (oil)
glass	food	rubber
athletic shoe	metals	book

- Make a stack of 3" x 5" cards, each containing the name of one of the items from the cycle list. Students add their own items as well. Add one extra card that says CREATIVE CARD on it. Place the cards face down in a pile.
- Divide the class into teams of four players.
- Go through the cards one at a time. Give each team 30 seconds to list the steps of a cycle in proper order. (They may want to write the steps down to keep them straight.)
- Teams should also write whether the item is from a renewable or nonrenewable resource.
- One point is given for each step in the cycle, but to be a valid cycle, at least three steps must be given. You can keep score, or assign a student to be scorekeeper for each team.
- An extra point is given if the team has answered the renewable/nonrenewable part correctly.
- When the CREATIVE CARD is drawn, that team may pick any cycle that has not already been used. A CREATIVE CARD cycle is worth 2 points for each step.
- The winning team is determined by total points.



Corrugated Recycles



RECYCLED PAPER

