Litter

Marine Litter
The Turtle's Mishap: A Puppet Show

SUGGESTED GRADE LEVEL: 1

OBJECTIVE:
Students will learn the importance of keeping our waters free from litter and the potential harm to aquatic and human life.

Debris in lakes and streams has become such a problem that organized beach, lake, and river sweeps are held to clean up the litter in and around these bodies of water. The objective of these activities is to make life a little safer for the animals that live in these habitats and humans who use them for livelihood and recreation.

Vocabulary includes marine debris, trash, and entangled.

TIME:
2 sessions – 30 minutes each.

MATERIALS:
Stick puppets for play characters and examples of marine debris such as: sandwich bags, milk jugs, dental floss, foam cups, plastic six pack rings, aluminum cans

PROCEDURE:
Trash that hits the water is known as marine debris. Many marine animals die each year as a result of humans' garbage. Stream & lake clean-ups have become annual events in New York.
Leading Question: What happens to the plastic litter we throw into the streams and lakes?

1. Have the students design stick puppets of a turtle, fish, sea bird, octopus, seal, and lobster from something that could be reused (brown bags, Styrofoam trays, paper plates, etc.).

2. Create an underwater scene for the stage.

3. Read the story "The Turtle's Mishap."

4. Act the story out as a class or for others in your school.

EXTENSION ACTIVITIES

1. Take trash bags to the beach, lake or river and clean up any garbage you find.

2. "Help! I Can't Get It Off!" activity.

Ask: What is it like to become entangled in debris and unable to free yourself? Take a rubber band and loop it around your thumb, stretch it over the back of your hand (not palm), then loop it around your little finger. Pretend that you are a sea creature that has become entangled in some marine debris. Without using your other hand, any other part of your body, or object, try to free yourself from the rubber band. You can move your hand in any fashion and use the fingers on the entangled hand.

SOURCE:
Sheehan, Kathryn and Mary Waidner. ***Earth Child***.
Council Oak Books, Tulsa, OK.

The Turtle's Mishap: A Puppet Show

Cast of Characters: Sea Turtle, Fish, Sea Bird (sea bird with dark feathers and webbed feet), Octopus, Seal, and Lobster.

As the curtain opens, a sea turtle is swimming around in circles. On one side of his body, make it obvious that his flippers are entangled in a plastic six-pack ring. They are so tangled they cannot move. His other flippers though are free and are paddling back and forth. Because of this, he is only able to swim in a circle.

Turtle: Help! Please help, my flippers are stuck. (He continues to struggle and swim in circles. Then along swims a fish and he stops to watch the turtle)

Fish: What a strange thing to do. Why are you swimming in circles?

Turtle: Oh, please Mr. Fish, can you help me? My flippers are stuck and I can't get them free. *(The fish tries to help the turtle by pulling on the plastic ring.)*

Fish: Oh, you really are stuck! Tell me, how did this happen?

Turtle: I was swimming along and I just didn't see this plastic ring floating in the water. Before I knew what had happened, it was looped around my flipper. I tried to get it off, but then I got my back one stuck too.

Fish: I remember when something like this happened to me. I was poking my head in the rocks on the bottom looking for food, and all of a sudden I was stuck in an old, rusty tin can. It took me quite a while before I was finally able to shake it off. *(Looking behind him and rushing off, he says:)* Whoops, I've got to run or I'll be somebody's dinner. Good luck!
(A cormorant, a dark sea bird that swims underwater to catch fish, swims by and is perplexed by the circling turtle.)

Sea Bird: You'll never get anywhere going around in circles like that.

Turtle: Maybe you can help. My flippers are stuck in this plastic ring. With your pointed beak, I'll bet you could get a good grip on it.

Sea Bird: I'd be happy to try.
(So the cormorant tugs and pulls on the ring, but is unable to free it.)

Sea Bird: I'm sorry, I can't budge it! You know, this reminds me of something that happened just last week. I was paddling on the surface when all of a sudden my legs were tangled in some fishing line. As I was trying to get free, it must have caught on something and I was pulled underwater. I could have drowned, but I was lucky enough to get out of that tangled mess just in time. Speaking of that, I need to go catch a breath. I'm sorry I couldn't help.
(The cormorant swims off, leaving the turtle alone. He continues to struggle and swim in a circle. After a time, along swims an octopus.)

Octopus: Is this a new dance or something?

LITTER

Turtle: No, it's not a dance. I'm going around in circles because my flippers are stuck in this plastic ring. Say, you have a lot of strong legs, could you help me by pulling it off?

Octopus: Let me see what I can do.
(So the octopus tries many different ways to pull the ring off, but his efforts are unsuccessful.)

Octopus: This trash is really a problem. There have been many times I thought I was picking up a clam, only to discover it was the top of a jar or hunk of glass.
(Along swims a seal)

Seal: What's going on here? Are you two fighting?

Octopus: No, not at all. I'm trying to pull this plastic ring off Turtle's flippers. Would you care to help?

Seal: I'd be happy to.
(So the two of them tug at the ring, but it doesn't come free).

Turtle: Ouch! It is so tight, my flippers are really beginning to hurt. Is there something else we can try?

Seal: Once I got caught in an old fishing net. I chewed and chewed until I cut it enough to break free. But this ring is much thicker, I don't think I could chew through it.

Octopus: That gives me an idea, I know of someone who could help.
(The octopus swims off to search for his friend and returns with a lobster.)

Octopus: See, here's the turtle I was telling you about. Do you think you could use your claws and cut through that plastic ring?

Lobster: I'm not sure, but let me try.
(The lobster cuts the plastic ring with his claws and the turtle is free.)

Turtle: Oh, thank you so much, I was beginning to think I would have to swim around in circles for the rest of my life.
(The cormorant and fish return.)

Fish: I just came back to see if you were all right.

Sea Bird: I see you got free of the plastic ring. You were lucky this time!

Turtle: I know…thanks to Lobster. I'll try to be more careful. But sometimes it's impossible to see the trash, especially those plastic rings or bags. Sometimes I wonder if humans think our ocean is just a big garbage can!

Seal: Everybody, listen. What's that noise?
(A faint rumbling sound can be heard and then it gets louder. All of the creatures watch as a motor boat passes overhead. As it goes by, a bunch of trash is thrown overboard and rains down on the animals.)

Turtle *(gravely)*: I just wish they'd stop and think!
(All of the creatures nod in agreement and then the curtain closes.)

Litter is Waste Out of Place

SUGGESTED GRADE LEVEL: 2-3

OBJECTIVE:
Students will:

- pick up litter and discuss what it is, why it is where it is, and where it comes from;
- suggest methods to control litter.
  The focus is on sources of litter and waste disposal. Vocabulary includes litter, demolition, loading docks, pedestrians, and receptacles.

TIME:
Variable

MATERIALS:
Examples of litter, grocery sacks, old newspaper, gloves (students bring from home)

PROCEDURE:
Litter is trash that has been discarded in improper places. Many communities recognize the sources of litter and develop programs and educational materials to teach people how to keep waste from escaping and becoming litter.

Sources of litter include:

- **Home garbage –** Use only trash containers with tight fitting lids. Paper or plastic bags can be opened by animals. Trash cans without lids or with loose lids can be knocked over by animals and the wind can move the trash several blocks, or even miles.
- **Business trash –** Tight, closed lids and even locks are sometimes needed on containers.
- **Truckloads –** If loads are not covered or tied down, many dangerous materials fall or are blown from the truck. Loose material is blown out of the truck beds. Many people don't think about putting on tarps and some don't know that they are accidentally losing parts of their load. Roads to the dumps are easy to follow because of all the litter along the roadway.
- **Construction and demolition** sites **–** Fences around construction sites keep materials from flowing out into the neighborhood. Putting waste materials into proper containers and tarping truck loads keep construction sites clean and construction and demolition materials off our roads.
- **Loading docks –** Keeping storage bins or dumpster tops closed and the area clean keep materials in place and away from the rest of the neighborhood.
- **Motorists –** Car litter bags and litter containers at rest areas, gas stations and fast food stores are important to controlling auto littering.
- **Pedestrians –** Sidewalk litter **receptacles** and good habits help control this source of litter.

LITTER

1. Review with the class the sources of litter covered above. You may also want to bring in examples of different types of litter, identifying the location where the litter was found. **Ask:** What is litter (*Litter is waste out of place*) Why is there litter? (*People cause litter*) Where might you find litter? (*Where people work and play*) How can you and your family prevent litter? (*Put your trash in a trash can and keep the lid on tight. Pick up litter you see and put it in the trash can*).

2. Have the children save their lunch sacks or bring grocery sacks from home. Take the children for a walk around the playground and the neighborhood, picking up human-made litter. **(Students should wear gloves and be cautioned not to pick up any item, such as broken glass, that might injure them.)**

   On returning to the classroom, have the children empty their litter collection onto sheets of old newspaper. Have each child talk about where litter was found. **Ask:** What might have caused litter in that place? Who? Why? How? Make a list of responses on the board.

   Have the children sort and count the litter according to types of materials. Can it be reused or recycled? **Ask:** How many items are recyclable or reusable? Circle the name of the item that can be reused or recycled. **Ask:** Are there more reusable and recyclable items than items for disposal?

3. Have the children make a list of who, besides themselves, can prevent litter in their neighborhoods and school. They may want to make a map of the neighborhood, including the school grounds, indicating where the litter receptacles are located.

After discussion, they could indicate on their maps where they think litter receptacles should be located.

Questions for the Class

1. What is litter?
2. Who causes litter?
3. Where might you find litter?
4. When does littering take place?
5. How can litter be prevented?

EXTENSION ACTIVITIES

1. Hold a poster and slogan contest emphasizing litter control. Display posters around the school. Give awards for posters and slogans.

2. Bring in several examples of litter and determine if they are from nature or from people. Make certain the children understand the difference between the two types of litter.

   Perform this simple experiment to see what happens over time to nature's litter and what happens over time to the litter people generate:

   - Take two jars, or any type of container such as a plastic egg carton and place samples of nature's litter in one and people litter in the other.

- Combine with soil. Be sure to lightly water each.

- Observe what happens to the contents of both containers over a week's time. (Keep containers open to air and light.) **Ask:** What is the best thing to do with each type of litter?

3. Read Litterbugs Come in Every Size by Nora Smaridge, Golden Press, Wisconsin, 1972.

4. Have students read The Wartville Wizard by Don Madden, the story of a man given the power to make litter fly back to the person who threw it down.

5. Enjoy these litter projects:
   - **Drama –** Have students select a piece of litter. Use it to act out a scene telling who owned it, what it was used for and how it became litter. Start with the components of the object and trace it's history up to the point at which the article is discarded.

   - **Creative writing –** Do the same assignment in written form.

   - **Art –** Draw a picture story about litter or the seven sources of litter (home garbage, business trash, uncovered trucks, construction/demolition sites, loading docks, motorists and pedestrians.)

SOURCE:
South Carolina Department of Health and Environmental Control. 2001.
Action for a Cleaner Tomorrow: A South Carolina Environmental Curriculum Supplement.
Columbia, SC.

The Waste Paper Basket

SUGGESTED GRADE LEVEL: K-3

OBJECTIVE:
Students will think about what happens with their litter or garbage with a focus on the consequences of our individual actions for ourselves and others.

TIME:
Partial period.

MATERIALS:
Worksheet ***The Waste Paper Basket***

PROCEDURE:
Have the students complete the worksheet questions, either individually, in groups, or as a class. Then discuss the results, emphasizing the idea that individual actions are significant. How we all treat our environment determines how good of an environment we will have.

Follow-Up: Discuss the following questions:

1. Extend the wastepaper basket situation to the world outside the classroom. If you were walking down a street and there were no litter baskets around, and you wanted to throw some candy wrappers away, what would you do?

2. If you threw one piece of paper on the ground, would that make a big difference? Explain.

3. Suppose 100 people threw papers on the ground, what would it look like then? Why?

LITTER

The Waste Paper Basket

Suppose the waste paper basket in the classroom is full. What would you do?

A. Would you put your garbage on your desk?
Yes_____ No_____ Maybe_____

How will this affect you? _____
How will this affect others? _____

B. Would you throw your garbage on the floor?
Yes_____ No_____ Maybe_____

How will this affect you? _____
How will this affect others?_____

C. Would you try to put your garbage in the waste paper basket anyway?
Yes_____ No_____ Maybe_____

How will this affect you?_____
How will this affect others?_____

D. Would you put your garbage in your book bag until you find another waste paper basket to put it in?
Yes_____ No_____Maybe_____

How will this affect you?_____
How will this affect others?_____

E. Would you ask your teacher for another waste paper basket to put your garbage into?
Yes_____ No_____Maybe_____

How will this affect you?_____
How will this affect others?_____

Litter & Litterbugs

SUGGESTED GRADE LEVEL: K-6

OBJECTIVE:
To help students identify litter in the world around them. Vocabulary includes litter and litterbug.

TIME:
Have students look for litter for one period. Discuss their findings in another class period.

MATERIALS:
Examples of litter.

PROCEDURE:
Have the children look for signs of pollution on the way to and from school. Tell them to focus on the garbage they see strewn along the ground. Alternatively, you could take younger children on a "litter hunt" and have them record the number of different types of litter they see.

Discuss their findings by asking the following questions:

1. What is the most common type of litter?
2. Where is the most litter found?
3. What is a litterbug?
4. Do you think the Recycling Super Heroes are litterbugs? Why or why not?

EXTENSION ACTIVITIES:
Organize a litter cleanup of your school or neighborhood, or a local recreational area. As children collect the litter, have them sort it into proper categories according to your local recycling center's separation requirements. Call TCSWD at 273-6632 for more information. A variation would be to conduct a "litter rap" around the school grounds or a block adjacent to school property. With a rap beat playing on a portable tape player in the background, have children spot pieces of litter, then make up short "raps" one at a time to describe them. For example:

Can on the street is not too neat,
Ugly litter I kick with my feet.

I see a bottle beside that fence.
Let's bring it in and earn five cents!

That paper's from a burger and fries –
Wish someone hid it away from my eyes.

You might wish to record the song as children make it up a verse at a time, or have children write down their own "raps". Then compile them into a song to perform for others.

SOURCE:
U.S. EPA. 1990.
Let's Reduce and Recycle: Curriculum for Solid Waste Awareness. EPA/530-SW-90-005.

Litter Scavenger Hunt

SUGGESTED GRADE LEVEL: 4-5

OBJECTIVES:
Students will:

- Observe, gather and discuss litter in the schoolyard;
- Recognize the variety and sources of litter;
- Discuss the negative impact of litter on the environment in terms of pollution and loss of resources;
- Apply definitions to terms used to classify materials;
- Write a paragraph that describes the who, what, where and why about one object that became litter.

Vocabulary includes litter, pollution, human-made, natural, degradable, and recyclable.

Many of the items people **litter** contain resources that can be recycled. The difference between throwing an apple core on the ground and throwing an aluminum can on the ground is that the apple core will **decompose** after time, while the can remains as litter. (Please do not throw apple cores and other food waste on the ground. These are also considered litter.) Littering of **recyclable** objects, such as paper, glass, plastic bottles and metal cans robs the environment of the resources and energy components locked within them.

Along with making an area look trashy, littering can injure animals that step on broken glass or drink contaminated water from containers. Small animals can be trapped inside bottles. People can be injured by stepping on broken glass or rusty metals.

Most people are unaware of the damage they do when they litter. To some people, it seems easier to drop fast-food wrappers on the ground than to carry them to a waste can ... or to think of the consequences of littering. In New York State, littering carries a maximum fine of $1,000 and repeat offenders can be jailed.

TIME:
45 minutes

MATERIALS:
Scavenger Hunt List, recyclable grocery bags for use as litter bags, gloves

PROCEDURE:
1. Write the words **litter, pollution, natural, human-made, degradable** and **recyclable** on the board. Help students develop definitions for each word. Encourage students to define the terms in relation to the environment. (**Litter** is human-made or human-used waste that can pollute the water, spoil the beauty of nature, or injure people or animals. Litter includes items such as broken glass, paper or plastic trash and rusty metals. **Pollution** means to make dirty, unhealthy, or unsafe. **Natural** means grows or is made by nature. **Human-made** means that people use natural materials to make things they can use. **Degradable** describes a natural object that can decay, rot or decompose like leaves, apple cores and pine cones. **Recyclable** describes an item that is made from resources that can be used again to make something new.) Have the students use these words in writing sentences.

2. Explain to students that they are going on a scavenger hunt to explore and document the litter problem in their schoolyard or neighboring community. If using the school yard, you may ask the maintenance staff to let litter collect for a day or so. Students may work alone or in groups of four or five. Invite parents to join the class to supervise the hunt.

3. Distribute the ***Scavenger Hunt List*** and review the items with students. Encourage students to speculate on possible answers prior to actual schoolyard exploration. Tell them that they will have to think carefully to determine what types of litter fall into each category. Explain that bringing back a description of a natural item is preferable to disturbing some items that should remain untouched.

   Have students wear protective gloves. Remind students not to pick up broken glass, pins, needles, cigarette butts, bandages, and other objects that my injure them. Have students identify the object for #6 on the list without picking it up.

4. Distribute litter bags and gloves to students and take them for a walk around the school grounds, neighborhood or a nearby park, wherever it is safe and convenient. Encourage students to observe litter wherever it occurs and to be prepared to discuss its location and possible origin upon returning to the classroom. Then let students begin their exploration and collection after reminding them not to leave the grounds or wander out of sight of the class. Set a 10-minute time limit and use a whistle or other method to signal the end of the hunt.

5. Return to the classroom and have students discuss and compare the items they collected. Encourage students to hypothesize what will eventually happen to apple cores and orange peels and what will become of soda bottles and glass objects. Ask students if the apple cores and orange peels "look" like litter. Would they want these things thrown in their own yard? Ask students what will happen to the resources in the glass, metal, plastic and paper objects if they aren't returned to be recycled. (They will be wasted.)

6. Have students hypothesize about why people didn't carry their waste with them until they could dispose of it properly.

Questions for the class:

1. For each item of litter found, ask students to list one way the item was useful to people and one way it can harm the environment if littered on the ground or in the water. Encourage students to recognize the loss of resources when recyclables are not returned for recycling.

2. Erase the definitions from the board and ask students to rewrite them based on their experience.

3. Have students write a short story about one item of litter found on the hunt, discussing WHAT it is made from, WHERE it was found, WHO might have dropped it, WHY someone littered the item and HOW it came to be where they found it.

SOURCE: South Carolina Department of Health and Environmental Control. 2001. ***Action for a Cleaner Tomorrow: A South Carolina Environmental Curriculum Supplement.*** Columbia, SC.

LITTER

Seven Sources of Litter

- **Home garbage –** use only trash containers with tight-fitting lids. Paper or plastic bags can be opened by animals. Trash cans without lids or with loose lids can be knocked over by animals and the wind can move the trash several blocks or even miles.

- **Business trash –** Containers with tight, closed lids and even locks are sometimes needed.

- **Truckloads –** If loads are not covered or tied down, many dangerous materials fall out of or are blown from the truck. Loose materials are blown out of truck beds. Many people don't think about putting on tarps, and some don't know that they are accidentally losing parts of their load. Roads to landfills are easy to follow because of all the litter along the roadway.

- **Construction and demolition sites –** Fences around construction sites keep materials from flowing out into the neighborhood. Putting waste materials into proper containers and tarping truck loads keep construction sites clean and construction and demolition materials off our roads.

- **Loading docks –** Keep storage bins or dumpster tops closed and even locked and the area clean.

- **Motorists** - Car litter bags and litter containers at rest areas, gas stations and fast food stores are important to controlling auto littering.

- **Pedestrians –** Sidewalk litter receptacles and good habits help control this source of litter.

Three Places Where People Feel It Is OK to Litter

- Where litter has already accumulated (country roads, state fair)

- Where someone else will clean it up for us (theatres, ballparks, school yards)

- Where there is no personal ownership (state parks, highways)

What Do You Think? Is it okay to litter these places?

LITTER

Scavenger Hunt List

Bring back only discards from people or nature. You can bring back an answer in your head or written on this sheet for items that can't be put in your bag!

- ❑ 1. A natural food covering
- ❑ 2. A human-made food covering
- ❑ 3. A human-made object that came from mineral/rocks
- ❑ 4. A human-made object that came from oil
- ❑ 5. A human-made object that came from plants
- ❑ 6. Something human-made that can cut your finger (Be careful not to hurt yourself. Describe it or draw a picture of it)
- ❑ 7. Something that is decomposing or decaying
- ❑ 8. Something that could be recycled
- ❑ 9. Something that a worm might like to eat
- ❑ 10. Something hard, something soft, something smooth, something rough
- ❑ 11. Something you could use to make a toy
- ❑ 12. Something that helps a plant grow
- ❑ 13. Something that could hurt an animal
- ❑ 14. Something that would mold
- ❑ 15. A sign of water, air, noise, or visual pollution

Enduring Litter

SUGGESTED GRADE LEVEL: K-6

OBJECTIVE:
Students will learn the length of time required for different materials to decay.

TIME:
Partial period.

MATERIALS:
Chalk or white board. Or, timeline with labeled cards or photos representing the different materials listed below.

PROCEDURE:
Litter at the roadside is ugly. How long it will stay before decaying may be an ugly surprise. Ask students to guess the length of time that different materials commonly littered will endure in the environment. Write their responses on the board. Or, have students create a timeline organizing the materials from the one that they think will decay most quickly to the one that they think will persist the longest. Compare student responses to the answers provided and discuss reasons why materials break down at different rates.

Traffic Ticket	2-4 weeks
Cotton Rag	1-5 months
Rope	3-14 months
Wool Sock	1 year
Painted Wooden Stake	13 years
Tin Can	100 years
Aluminum Can	200-500 years
Plastic 6 pack cover	450 years
Disposable Diapers	500 years
Glass Bottle	undetermined
Styrofoam Cups	Never