

Contents



TEACHER GUIDE

- Assessment Rubric 4
- How Is Our Resource Organized? 5
- Bloom's Taxonomy for Reading Comprehension 6
- Vocabulary 6



STUDENT HANDOUTS

- Reading Comprehension

- 1. Conservation 7
- 2. Reduce and Reuse 7
- 3. Recycling 7
- 4. Composting 7

- 5. Fresh Water Resources 7
- 6. Conserving Fresh Water 7
- 7. Clean Air Resources 7
- 8. Sustainable Living 7

- Hands-on Activities 12
- Crossword 16
- Word Search 17
- Comprehension Quiz 18



EASY MARKING™ ANSWER KEY 20

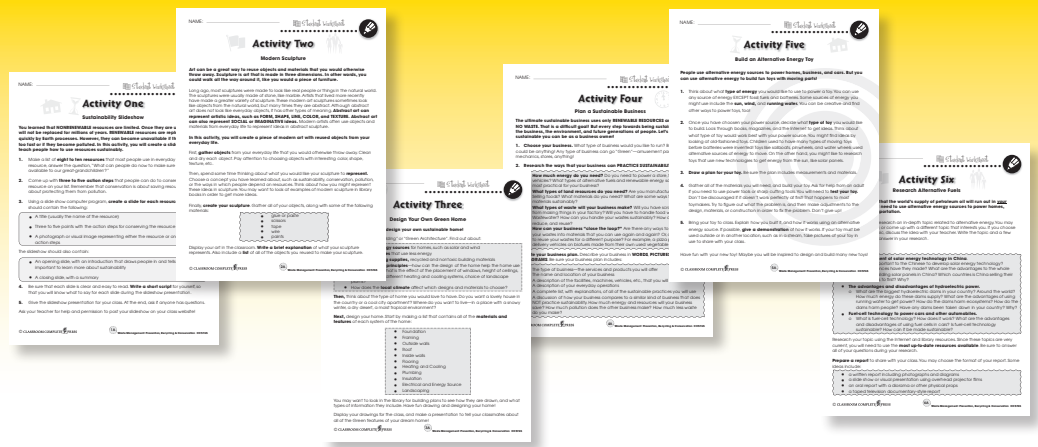
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NAME: _____



Composting



1. Imagine that you left a banana peel outside. What do you think would happen to it? What would it look like after a month?

2. Use a dictionary to look up the terms **NUTRIENT** and **ORGANIC MATTER**. Write the definitions on the lines below.

a) The definition of **nutrient** is: _____

b) The definition of **organic matter** is: _____

3. Think of five things that you threw away in the past day or two that were **organic matter**. Describe those things on the lines below.

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____

NAME: _____



Composting



How does composting help the environment?

Composting helps conserve resources. A lot of energy is used to run landfills. By composting, people can send less organic matter to landfills. Composting breaks down organic matter without any added energy.



Composting also helps conserve soil. Compost, or humus, is an important part of soil. It contains most of the nutrients in soil, and keeps the soil light and airy. Plants must take in nutrients in order to grow. Insects and plant roots must have air spaces in soil in order to survive.

You may have learned that nutrients cycle through the environment. Nutrients that are taken in by plant roots pass to animals that eat those plants, then to animals that eat other animals. In nature, nutrients are returned to the soil when dead plants and animals are broken down by decomposers. But, if we place our food scraps in a landfill, the nutrients are taken out of the food chain. They are no longer available to plants. However, if we compost our scraps and use the compost to grow plants in a garden, we once again return those nutrients to the food chain.

STOP Describe how composting helps conserve energy.

How does composting save money?

Composting also saves money. Landfills cost money to operate. Money is needed to buy machines and pay workers. Waste management companies usually charge people for the amount of waste they pick up at homes and bring to a landfill. By composting food scraps and trimmings from your yard, you can save money by reducing the amount of waste you send to the landfill.

Large companies and institutions can often save a lot of money by composting waste. Grocery store chains, restaurants, schools, prisons, fairgrounds, and amusement parks are among the groups that compost their organic waste. Many of these groups save tens or even hundreds of thousands of dollars each year by composting.

NAME: _____



Composting



1. Use the words in the list to answer the questions.

composting	decomposers	compost	organic matter
nutrients	conserve	cycle	humus

- _____ a) What type of living things break down dead plant and animal matter in natural environments?
- _____ b) What substances do plants need to take in through their roots in order to grow?
- _____ c) What is the name of a process in which people help organic waste break down?
- _____ d) What is another word for compost?
- _____ e) What is the end product of composting?
- _____ f) What is another term for once-living things?
- _____ g) What is the name of a process that repeats the same steps over and over?
- _____ h) What do you do when you save resources?

2. Circle the word **True** if the statement is true. Circle the word **False** if it is false.

- a) Decomposition takes place in natural environments.
True False
- b) Earthworms help break down food scraps in a compost pile.
True False
- c) Rock crystals are one example of organic matter.
True False
- d) Metals can be composted because they come from a natural resource.
True False
- e) Plant roots take in nutrients from the soil.
True False
- f) Composting is expensive.
True False
- g) Composting can add nutrients back into the food chain.
True False

NAME: _____



Composting



3. Explain how composting can save both **money** and **resources**.

4. Explain why **compost** is good for growing garden plants.

Extension & Application

5. Help your family to begin composting

Step 1: Learn more about composting. Contact your **local waste management company** and ask them if they have any composting programs.

Step 2: Determine whether indoor or outdoor composting would be better for your family. Research specific **composting methods** on the Internet or using your library resources. Be sure to find out:

- How to set up an indoor or outdoor compost pile
- The steps you should take to help food break down quickly in your compost pile
- The equipment you would need for an indoor or outdoor pile
- How to care for your compost pile
- Any additions you should make to your compost
- Uses for your finished compost

Step 3: **Estimate** how much money your family might save by composting. Find out how much your family pays for waste removal. Ask your waste management company if people pay less money if they produce less waste. Also figure out how much money you might save by using compost to fertilize your house or garden plants.

Step 4: **Design a brochure** to give your family the information they need to start composting. Be sure to include all of the information from Steps 1 to 3 in your brochure.

Classroom Composting

For this activity you will **set up a system for composting** food scraps and other organic matter in your classroom. (Be sure to get your teacher's permission first.) If your class has outdoor space or a vegetable garden, you might choose to set up an outdoor compost pile. Otherwise, you can choose an indoor composting system, such as a worm bin.

Part A

Research your composting system. You may use Internet or library sources to find out more about how to compost. Call your local waste management company or local government's environmental department to ask if they offer composting programs or information.

If you want to do an OUTDOOR compost pile, find out the following information:

- What is the best place to put a compost pile? How much room does it need? How far away from structures should it be? Should it be in a covered area or out in the open? Should it be in the sun or shade?
- How should you begin your pile? Will you need to dig a hole, or cover the ground with anything?
- What is the importance of air in your compost pile? What is the importance of heat? How do you maintain the right amount of heat and air in your pile?
- What types of organic matter can be put in your pile? How should you layer the different types of organic matter?
- Should you add anything to your compost pile? What do you need to do to maintain your pile?

If you want to do an INDOOR compost pile, find out the following information:

- What is a **worm bin**, and where can you get one?
- How do you begin composting in a worm bin? What do you need to add?
- What types of organic matter can be put in your worm bin? How much material can your worm bin handle?
- What do you need to do to maintain your worm bin?

Also find out how to know when your compost is finished, and what you can do with it.

Part B

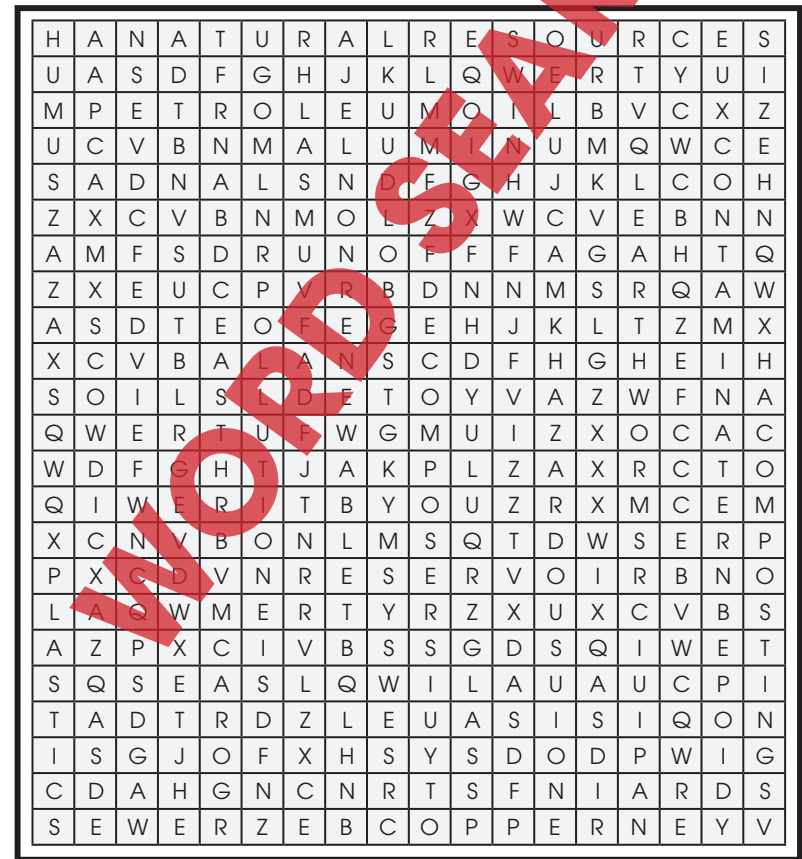
Set up your compost system. Give a presentation to the class to introduce your system and explain how to use it. Be sure everyone understands what they may and may not place in it. Set up a task chart for any maintenance tasks that must be done over time. **Have fun composting!**

CHALLENGE! As your system gets going, why not help other classes begin their own?

Word Search

Find all of the words in the Word Search. Words are written horizontally, vertically, diagonally, and some are even written backwards.

natural resources	toxic	decomposers	runoff
metal	copper	land	hazardous
paper	reservoir	stone	contaminate
nonrenewable	windmills	humus	drain
petroleum oil	composting	fuel	sewer
glass	waste	soil	aluminum
pollution	plastic	earthworms	



Comprehension Quiz

30

Part A

Circle the word True if the statement is true. Circle the word False if it is false.

- 1) Nonrenewable resources are replaced by natural Earth processes faster than people can use them up.
True False
- 2) Metals, wood, and plastic are all made with resources from the land.
True False
- 3) At a recycling facility, plastic bottles are washed and filled with new products.
True False
- 4) An apple core is an example of organic matter.
True False
- 5) Sewage treatment makes water safe to drink.
True False
- 6) Recycled water comes from unopened water bottles that have been sent to a recycling facility.
True False
- 7) Automobiles that run on gasoline are a major cause of air pollution.
True False
- 8) Green businesses are businesses that try to use as many natural resources as possible.
True False

Part B

Put a check mark (✓) next to the answer that is most correct.

- 1) Which item could you place on a compost pile?
 A plastic bottle
 B glass jar
 C banana peel
 D newspaper
- 2) Which of these is NOT a use for recycled water?
 A drinking
 B watering plants
 C restoring wetlands
 D cooling machines in factories
- 3) Which substance can cause smog?
 A bauxite
 B benzene
 C carbon
 D ozone
- 4) Which source of energy is nonrenewable?
 A solar
 B wind
 C petroleum oil
 D running water

SUBTOTAL: /12

Major Sources of Air Pollution



Non-road Vehicles



Vehicles



Fossil-fuel-burning Power Plants



Residential Wood Burning & Forest Fires



Composting

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True False
- f) Composting is expensive.
True False
- g) Composting can add nutrients back into the food chain.
True False

- 1. a) decomposers
- b) nutrients
- c) composting
- d) humus
- e) compost
- f) organic matter
- g) cycle
- h) conserve

3. It can save money because there is less waste to send to the landfill. It can save resources because no energy is used to break down organic waste.

4. Compost contains all of the nutrients released when the once-living matter was broken down.

Answers will vary

12

Answers will vary

13

- 2. a) True
- b) True
- c) False
- d) True
- e) True
- f) False
- g) True

5. Answers will vary

11

Answers will vary

14

Answers will vary

15



EASY MARKING ANSWER KEY