

## Topic: TRASH

**MAIN MESSAGE:** When managed properly, our trash can be useful. By turning trash into electricity, we are able to save natural resources while also getting rid of unwanted items.

### VOCABULARY:

- 1) **Trash** - Items that are no longer wanted and are thrown away, also known as municipal solid waste (MSW).
- 2) **Litter** - Trash that is left lying in an open or public space.
- 3) **Waste** - A material that is thrown away or discarded.
- 4) **Energy** - Power made from physical or chemical resources, often used to provide light or heat or to work machines.
- 5) **Hauler** - A person or company that collects and transports trash, recycling or other materials.
- 6) **Waste-to-Energy Facility** - A facility that burns trash to produce steam or electricity.
- 7) **Boiler** - A huge furnace surrounded by tubes of water.
- 8) **Turbine** - A machine that uses the energy from fast-moving steam, water or air to spin fan blades.
- 9) **Generator** - A machine that converts mechanical energy, like the energy in spinning fan blades, into electricity.
- 10) **Electricity** - A form of energy that is produced by the flow of electrons; it provides power for lighting, appliances and other electric devices in our home and school.
- 11) **Environment** - The natural world or the surroundings in which a person, animal or plant lives.
- 12) **Ash** - The powdery residue that is left after something is burned.
- 13) **Exhaust** - Waste gases expelled from an engine, turbine or other machine during its operation.
- 14) **Non-hazardous** - Materials that are not dangerous or potentially harmful to our health or to the environment.
- 15) **Landfill** - A place where trash is buried in a safe way to prevent air and water pollution.

*Trash Vocabulary Continued -*

- 16) **Transfer Station** - A place where trash is taken off small trucks and loaded onto larger trucks for more efficient shipment.
- 17) **Natural Resources** - Materials like water, oil and trees that occur in nature and have value.
- 18) **Greenhouse Gasses** - Gasses in the atmosphere that trap heat from the sun and contribute to global warming (e.g., water vapor, carbon dioxide, nitrous oxide and methane).

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Trash: Acrostic Poem

**T**

\_\_\_\_\_

**R**

\_\_\_\_\_

**A**

\_\_\_\_\_

**S**

\_\_\_\_\_

**H**

\_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Trash: Cloze Paragraph

<i>mixed</i>	<i>hopper</i>	<i>turbine</i>	<i>pit</i>	<i>steam</i>	<i>electricity</i>
<i>garbage</i>	<i>30,000</i>	<i>furnace</i>	<i>water tubes</i>	<i>energy</i>	

When the trash arrives at the Waste to Energy Facility, it is dumped into the \_\_\_\_\_ . Here, the garbage is \_\_\_\_\_ by the crane. The crane operator loads the garbage into the \_\_\_\_\_ . The next stop for the garbage is the \_\_\_\_\_ . The \_\_\_\_\_ is burned at 2,500 degrees Fahrenheit. As the garbage burns, it heats the water in the boilers' \_\_\_\_\_ . As water is heated, it changes from water into \_\_\_\_\_ . There is a lot of \_\_\_\_\_ in the steam. Finally, the steam energy turns the blades of the \_\_\_\_\_ . As the turbine spins, it causes a magnet to turn around a coil of wires and produces \_\_\_\_\_ . The plant produces enough electricity to light \_\_\_\_\_ homes.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Trash: Cloze Paragraph Answer Key

<i>mixed</i>	<i>hopper</i>	<i>turbine</i>	<i>pit</i>	<i>steam</i>	<i>electricity</i>
<i>garbage</i>	<i>30,000</i>	<i>furnace</i>	<i>water tubes</i>	<i>energy</i>	

When the trash arrives at the Waste to Energy Facility, it is dumped into the *pit*. Here, the garbage is *mixed* by the crane. The crane operator loads the garbage into the *hopper*. The next stop for the garbage is the *furnace*. The *garbage* is burned at 2,500 degrees Fahrenheit. As the garbage burns, it heats the water in the boilers' *water tubes*. As water is heated, it changes from water into *steam*. There is a lot of *energy* in the steam. Finally, the steam energy turns the blades of the *turbine*. As the turbine spins, it causes a magnet to turn around a coil of wires and produces *electricity*. The plant produces enough electricity to light *30,000* homes.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Trash: Word Bank

**Directions:** Fill in the blanks using words from the word bank below.

1. Our \_\_\_\_\_ can go on to be transformed into something that brightens a dark room, keeps ice cream cold or even turns on a TV.
2. We can turn waste into \_\_\_\_\_.
3. A \_\_\_\_\_ is a huge container surrounded by tubes of water.
4. Our school could be running on \_\_\_\_\_ created by our trash.
5. \_\_\_\_\_ gases are elements that go into the air and can be harmful to our environment.

Word Bank		
Boiler	Energy	Greenhouse
Trash	Power	

## Trash: Word Bank Answer Key

1. Trash
2. Energy
3. Boiler
4. Power
5. Greenhouse



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Trash: Test

**Directions:** Answer the following questions after watching the Trash video.

1. The waste to energy plant reduces greenhouse gases by
  - A. Burning trash instead of coal
  - B. Reducing methane from landfills
  - C. Capturing metal for recycling
  - D. All of the above
2. Waste-to-Energy keeps more than 325,000 tons of trash out of landfills each year. This is enough to fill which Syracuse landmark?
  - E. Clinton Square Ice Rink
  - F. NBT Bank Stadium
  - G. Destiny USA
  - H. Carrier Dome
3. The Waste-to-Energy Facility recovers about 9,000 tons of metal for recycling. How many pounds is this? *Hint: 1 ton is 2,000 pounds.*
  - A. 9,000
  - B. 18,000,000
  - C. 18,000
  - D. 1,800
4. At what step of the waste-to-energy process is electricity created?
  - A. When the turbine blades spin and rotate a magnet in the generator
  - B. When the super hot boiler turns water into steam
  - C. When the garbage is picked up by a garbage truck
  - D. When the metal is recovered from the ash
5. What is one way you can *save the world a little each day*?
  - A. Reusing materials
  - B. Recycling things
  - C. Composting food scraps
  - D. Picking up litter
  - E. All of the above

## Trash: Test Answer Key

1. A. All of the above
2. D. Carrier Dome
3. B. 18,000,000
4. A. When the turbine blades spin and rotate a magnet in the generator
5. E. All of the above