

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. Trash can be turned into energy and help save our natural resources. What are two natural resources we use for electricity?

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?

- A. Clinton Square Ice Rink
- B. NBT Bank Stadium
- C. Destiny USA
- D. Carrier Dome

3. The Waste-to-Energy Facility recovers about 9,000 tons of metal for recycling. How many pounds is this?

- 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. Various answers are acceptable. For example: Coal and natural gas
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