



## TOASTER HOT AIR BALLOON

### SCIENCE SAFETY

PLEASE follow these safety precautions when doing any science experiment.

- **ALWAYS** have an adult present.
- **ALWAYS** wear the correct safety gear while doing any experiment.
- **NEVER** eat or drink anything when performing any experiment.
- **REMEMBER** experiments may require marbles, small balls, balloons, and other small parts. Those objects could become a CHOKING HAZARD. Adults are to perform those experiments using these objects. Any child can choke or suffocate on uninflated or broken balloons. Keep uninflated or broken balloons away from children.

### INGREDIENTS

- 30 Gallon Clear Trash Bag
- 4 Slice Toaster
- Large Tub

### INSTRUCTIONS

**STEP 1:** Place the four slice toaster into the large tub. Plug the toaster plug into an electrical outlet.

**STEP 2:** Turn the toaster settings to the highest and push down the levers until they lock.

**STEP 3:** Place the open end of the 30 gallon clear trash bag over the large tub. Hold the trash bag until it completely fills with hot air. Feel the sides of the trash bag. Are the sides hot or cold? Why? Let go of the trash bag. What happens? Why? Make observation to provide evidence that energy can be transferred from place to place by heat.

### EXPLANATION

The flow of rising hot air, from the toaster, creates a convection current inside the trash bag. As a result, the air is heated, the trash bag expands, become less dense, and eventually lifts into the air.



### SCIENCE BACKGROUND

The particles that make up matter are always moving. The energy of the moving particles is known as thermal energy. The faster the particles are moving, the more thermal energy the matter has. Heat is the transfer of thermal energy from a warmer object to a cooler object. Heat is transferred from one location to another through conduction, convection, or radiation. Conduction is the transfer of heat between objects that are in direct contact with each other. Convection is the transfer of heat by currents through a liquid or gas. Radiation is the transfer of heat through space.

### I CAN STATEMENT

- ✓ I can make observations to provide evidence that energy can be transferred from place to place by heat.

### NEXT GENERATION SCIENCE STANDARDS CONNECTION

4 – Energy | Energy and Matter