

AIR TOOBZ

STEM-POWERED PLAY!

This is a machine that uses air to move objects. Identify the pieces (straight tubes, corner tubes, T-tube, connectors, balls, funnel, fan unit) and demonstrate the use of the air flow dial before use. Invite children to experiment and describe their discoveries!

MOVEMENT & SPEED OF AIR

- Can you see air move?
- Turn on the machine without adding any balls. What do you see? What do you hear? Where can you place your hand so you can feel the air?
- Add balls. Turn on the machine. What do you see? What do you hear? Where do the balls go?
- What makes the balls move?
- Turn the air on at the lowest setting. What happens to the balls?
- If you turn the air on higher, what do you think will happen?



IMPACT OF DESIGN

- Build a tube maze flat on the floor. All the pieces should lay flat. Predict where the balls will go.
- Build a tube maze with some tubes in an upward direction. Predict where the balls will go.
- Try different configurations. What happens?
- Connect the funnel at the top of an open tube. What happens to the ball when it comes out of the funnel (this is when you can introduce the new vocabulary word, “hover.”)

VARIABLES

- How can you measure how far the balls go? What can you do to make the ball go farther?
- What can you do to make the ball go slowly? What would you change to make the ball go faster?
- Find another lightweight object (e.g. pom poms, feather, ping pong ball) to place in the maze you built. Does it move the same as the ball? What’s different?
- What happens when the machine is turned off? Do you see any movement?

QUESTIONS & PROMPTS

- What happens when . . . ?
- What are you trying now?
- What did you notice?
- What did you change to make that happen?
- What could you do differently? Ask a friend to help you do an experiment.
- I wonder what would happen if . . .
- What do you think will happen?
- Blow air from your mouth onto your hand. How does it feel? Blow softly. Blow hard. Could you use the air from your mouth to make something move across the floor?

VOCABULARY

- **Turbine** – A machine that uses water or air to produce power. Air Toobz is a turbine that makes balls move from the force of air.
- **Wind Tunnel** – A tube or tubes with air moving inside.
- **Tube** – A long empty container in the shape of a cylinder.
- **Funnel** – A tool that is shaped like a cone (think of an ice cream cone).
- **Hover** – When something stays moving. The Air Toobz balls hover over the funnel.