LESSON 9:
MINI MINI GOLF

SUPPLIES

MAIN BIN

- Plastic Cups (5)
- Popsicle Sticks (50)
- Skewers (50)
- Bottle Caps (50)
- Wooden Beads (5)
- Masking Tape (3 rolls)

PENCIL BOX

- Markers
- Scissors

FOLDER

- Card stock paper (20)
- Printer paper (5)

OBJECTIVES

- ☑ Explore basic physics concepts like force, motion, and acceleration through play
- ☑ Use observation and testing to understand how their actions change motion

HOOK

3-5 min

Ask students:

- What happens when you push or flick a ball? Does it go fast or slow?
- What do you think makes a ball go faster or slower?
- How can we use ramps or obstacles to change how the ball moves?

INTRODUCTION

3-5 min

Imagine you're playing mini golf. You tap the ball, and it rolls across the ground, around a curve, and right into the hole—score! But have you ever wondered why the ball moves the way it does? That's all thanks to something called force and motion.

Today, we're building our own mini mini golf courses and using science to make the perfect shot.

MOTION AND FORCE

When an object moves, it is because a force—like a push or a pull—is acting on it. The harder the force, the faster the object moves. This is called motion.

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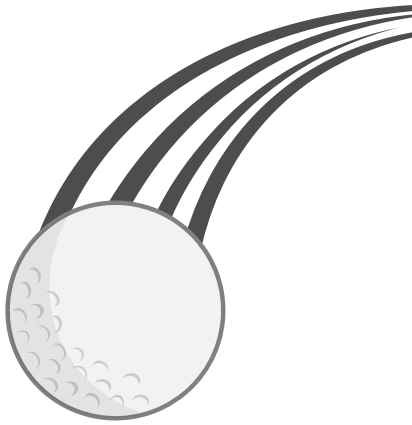
DISCUSSION

3-5 min

Using their ideas from the hook, have students predict:

- If you push the ball really hard, what do you think will happen?
- What if the ball goes up a ramp? Will it slow down or speed up?
- How can we make sure the ball goes into the hole?



EXPERIMENT

20-25 min

1. Divide the class into small groups of 3–4 students.

2. Give each group:
   - 2 pieces of cardstock for the base
   - 1 pieces of blank paper
   - A set of craft materials: popsicle sticks, skewers, paper, bottle caps, tape, glue sticks, markers

3. Ask groups to spend 3 minutes talking and drawing their ideas on a scrap piece of paper or with markers on the plate.

4. Let groups start building using the materials. Remind them to tape or glue parts down so things don't fall apart

5. Once groups finish building, give them a wooden bead as a golf ball. Show them how to gently roll or flick the ball from the start of their course.

6. If the ball misses, encourage groups to talk about what happened and fix their designs. Say: "What can you change to make the ball go into the hole?"

7. Ask each group to show their course and explain what they built and how their ball moves.

MINI MINI GOLF

OBSERVE & EXPLAIN 5 min

Discuss:

- What did you notice about how the ball moved?
- How did pushing the ball harder change what happened?
- What made the ball slow down or stop?
- How did ramps or obstacles change the ball's path?

EXTENSION

After building your golf course, invite students to create their own mini golf clubs using the craft materials on their tables.

- Use popsicle sticks as the base for the golf club.
- Attach paper, straws, or small pieces of cardboard to the popsicle stick to make the "club head."
- Decorate the clubs with markers or tape if you want!

When you push or flick the ball, you use force—a push or pull that makes something move. The harder you push, the faster the ball goes.

The ball's movement is called motion. Sometimes it speeds up, sometimes it slows down. When the ball goes up a ramp, it slows down because it's moving against gravity (gravity pulls it down). When it rolls down a ramp, it speeds up because gravity helps it move.

Acceleration is just a big word for how something gets faster or slower. You saw acceleration when your ball changed speed going up or down ramps.
By building ramps and obstacles, you controlled how the ball moved—just like engineers do when they design roller coasters or cars!

Exit Ticket

Ask each student the following questions as they walk out the door.

How did you change your course to make the ball go where you wanted?

What was the most fun part of making your golf course?

Can you show me how you made the ball move fast or slow?

CLEAN UP & DISMISSAL

Students must then clean their workspace. Make sure to leave the classroom the way you found it.

- Throw away all used materials that cannot be repurposed.
- Have students bring their mini golf setups to a space space; they can take them home if they want.
- Check the floor and tables for leftover materials or trash, and clean them up.
  - Wipe down tables to remove any dirt, glue, or debris.