

2000471

# Three Pointer

## Lesson Plan



Explore the motion of a basketball when throwing a three-pointer.

How can you score a basket every time?

In this lesson, your students will observe how a basketball moves in order to recognize a patterns in its motion.

🕒 30–45 Minutes

📦 Beginner

🎓 Grades 3–5

### Engage (Whole Class, 5 Minutes)

- Facilitate a quick discussion about basketball.
- Ask questions to get your students thinking. Here are some suggestions:
  - What's a "three-pointer?" (A "three-pointer" is a basket that's scored from outside the three-point line.)
  - Which forces makes the ball move? (Push/Pull)
  - Which force makes the ball come back down? (Gravity)
- Transition your students to the building challenge.

### Explore (Individual Work, 20 Minutes)

- Have your students work independently to build the Basketball model by following steps 1 – 20 on page 16 of the building instructions (found in the box).
- The Student Worksheet will guide them as they experiment to discover patterns in the ball's motion.

### Explain (Whole Class, 10 Minutes)

- Prompt your students to explain how they've managed to score baskets.
- Ask questions like these:
  - What patterns did you recognize in the ball's motion as the basket height changed? (As the height increased, it became more difficult to score a basket. This can lead to a discussion of why professional basketball hoops are a standard height.)
- How did you predict what would happen next?

### Elaborate (Individual Work, 10 Minutes)

- Have your students set the height of their baskets to position 8 and try to score from the farthest distance by changing the pivot position of the throwing arm.  
Note: This isn't mentioned on the Student Worksheet.

### Evaluate (Individual Work)

- Ask each student to give an example of a pattern of motion they've observed on their model.

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## Student Worksheet

### How can you score every time?

- Build a throwing arm and basketball hoop. Turn to page 16 in the building instructions book. Follow Steps 1 to 12.
- Set the basketball hoop height to "1."
- Position the hoop and throwing arm on the squares to the right of this worksheet.
- Put the ball in the cup, pull the throwing arm back, and then let it go to shoot a three-pointer.
- Keep practicing. Make the hoop higher and move the pivot arm to different positions.
- Which hoop height and pivot arm position were the best?
- Explain the patterns you've seen in the ball's motion.

