

Basketball Bounce Experiment: Measure and Compare

FAMILY LEARNING | FICTIONAL PRACTICE

GRADES 3-6

NAME _____

DATE _____

SCORE _____ / 1

STORY

Read the story, then answer the questions.

Plan with an adult

Use one basketball, a measuring tape fixed securely beside a clear wall, paper, and a pencil. Ask an adult to select a clear, dry, level space away from people, breakable objects, roads, and stairs. Keep the release height below your shoulder. Stop if the space is not suitable.

Keep the comparison fair

Use the same ball, surface, measuring reference, and release method. Release without pushing. Measure height from the floor to the bottom of the ball. Choose two manageable release heights. Have an adult observe or record from a fixed position. A quick bounce is hard to measure exactly; record estimates honestly.

Record three trials at each height

Release height A: ____ cm. Bounce 1: ____ cm. Bounce 2: ____ cm. Bounce 3: ____ cm.

Release height B: ____ cm. Bounce 1: ____ cm. Bounce 2: ____ cm. Bounce 3: ____ cm.

One thing kept the same: _____

One measurement limitation: _____

Draw and describe

On graph paper, label the horizontal axis Release height and the vertical axis Bounce height in centimeters. Plot all six measurements. Choose a scale that fits your data. Write what your observations show, without claiming that every ball or surface behaves the same way.

About the score

The score box counts the multiple-choice check; written responses are for explanation and practice.

MATH

Math practice. Show your work.

1 Fictional bounce heights are 24, 27, and 24 cm. Which mean and range are correct? Show your work.

- (A) Mean: 25 cm; range: 3 cm. (B) Mean: 75 cm; range: 3 cm.
(C) Mean: 25 cm; range: 27 cm. (D) Mean: 24 cm; range: 1 cm.

SHOW YOUR WORK

2 If you changed both the surface and the release height at once, could this comparison show which change caused a difference? Explain.

SHOW YOUR WORK

ANSWER KEY

Basketball Bounce Experiment: Measure and Compare · Grades 3-6 · Family learning | Fictional practice

About 5 minutes

Separate these pages before giving the worksheet to students.

MATH

1

A

Mean: 25 cm; range: 3 cm.

$$(24 + 27 + 24) / 3 = 25. 27 - 24 = 3.$$

2

What a good answer includes:

A fair comparison changes one chosen condition while keeping the other conditions as consistent as possible.