

Force Test Detectives

Plan a fair test of pushes and pulls.

2.7.B “plan and conduct a descriptive investigation to demonstrate how the strength of a push and pull changes an object's motion.”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline the three things Jalen kept the same, circle each gentle or strong force, and number the four test groups in order.

Jalen Tests a Wagon

- ① Jalen wanted to find out how the strength of a push and a pull changes a toy wagon's motion. He planned a test on a smooth floor. He chose one wagon and marked a start line with tape. He would try gentle and strong forces.
- ② To make a fair test, Jalen kept the wagon, floor, and start line the same. First, he gave the wagon three gentle pushes, then three strong pushes. Next, he used a string for three gentle pulls and three strong pulls. He recorded distance.
- ③ Strong pushes moved the wagon farther than gentle pushes. Strong pulls also moved it farther than gentle pulls. Jalen saw this pattern in his trials. His investigation showed that a stronger push or pull can change how far an object moves.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What three things did Jalen keep the same to make his test fair?

2 What four test groups did Jalen use, in order?

3 What did Jalen learn about stronger pushes and pulls?

3 YOUR TURN _____ Your own words

Choose a safe object, and plan and conduct a test. Use a gentle and a strong push or pull three times each, then write three sentences that name your object, tell what stayed the same, and describe what happened.

PART 1 • READ AND MARK

Underline the three things Jalen kept the same, circle each gentle or strong force, and number the four test groups in order. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What three things did Jalen keep the same to make his test fair?	He kept the wagon, the floor, and the start line the same.
2	What four test groups did Jalen use, in order?	Three gentle pushes, three strong pushes, three gentle pulls, and three strong pulls.
3	What did Jalen learn about stronger pushes and pulls?	A stronger push or pull can make an object move farther.

PART 3 • YOUR TURN (SAMPLE ANSWER)

I tested an empty paper cup on the same smooth table. I used the same cup and start line for three gentle pushes and three strong pushes. Each strong push moved the cup farther than each gentle push.

Accept any safe test that compares three gentle and three strong pushes or pulls, identifies conditions kept the same, and describes observed motion. Student results may vary, but the conclusion should match the observations.