Moves Without Touch

Ask what changes the way objects move.

3-PS2-3 "Ask questions about cause-and-effect relationships of electric or magnetic interactions between two objects not in contact with each other. (SEP: 1; DCI: PS2.B; CCC: Cause/Effect)"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline something Mina or Jay changes in each paragraph, and circle what moves or stays still so you can ask what caused the motion.

At the Science Table

1. At the science table, Mina puts a steel paper clip on a smooth desk. She holds a magnet near it without letting the two touch. The clip slides toward the magnet. When she holds the same magnet farther away, the clip stays still. Mina wonders what changed. She keeps the clip and the desk the same so she can compare the two tries.

2. Next, Jay rubs a plastic comb with a dry cloth. He holds the comb just above tiny paper bits, leaving a gap. Several bits jump up toward it. Before he rubbed the comb, the bits did not move when he held it at that same gap. Rubbing can give the comb an electric charge. Charged objects can pull on other objects without touching them.

3. Mina slips a sheet of paper between her magnet and the clip. The clip still slides toward the magnet, even though the paper keeps them apart. Then she adds more sheets, one at a time, and watches for a change. The class makes a list of questions they could test. Each question asks whether changing one thing might change what moves, while the objects stay apart.

2 ANSWER WITH EVIDENCE

Use the passage

1. Write a question Mina could test about how the distance between the magnet and clip affects the clip's motion.

2. Write a question Jay could test about rubbing the comb and the paper bits' motion.

3. Write a question Mina could test about the number of paper sheets between the magnet and clip.

4. Write a question Jay could test by changing the gap between the rubbed comb and the paper bits.

3 YOUR TURN

Your own words

A student rubs a balloon on a sweater and holds it near, but not touching, a thin stream of water. The water bends toward the balloon. Write one question about what might change the water's motion, then tell how you would test it while keeping the balloon and water apart.

ANSWER KEY

Moves Without Touch

GRADE 3 · 3-PS2-3

PART 1 · READ AND MARK

Underline something Mina or Jay changes in each paragraph, and circle what moves or stays still so you can ask what caused the motion. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Write a question Mina could test about how the distance between the magnet and clip affects the clip's motion.	**Does moving the magnet farther from the clip change whether the clip moves?**
2	Write a question Jay could test about rubbing the comb and the paper bits' motion.	**Do the paper bits move toward the comb when it has been rubbed but stay still when it has not?**
3	Write a question Mina could test about the number of paper sheets between the magnet and clip.	**Does adding more sheets between the magnet and clip change whether the clip moves?**
4	Write a question Jay could test by changing the gap between the rubbed comb and the paper bits.	**Does holding the rubbed comb farther from the paper bits change whether they move?**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Does moving the balloon farther from the water change how much the stream bends? I would try two distances and watch how much the water bends while keeping the balloon and water apart.

Accept other testable questions that connect one change to an object's motion without contact. For Part 3, the test should change one condition and name what the student would watch.