Drops on a Coin

Follow a procedure to compare two liquids.

6-8.RST.3 "Read and precisely follow a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each action in order, circle the condition that tells you when to stop adding drops, and number the two places where you record a count. Use your marks to track the procedure without skipping a step.

Which Liquid Stays on the Coin?

1. Can a coin hold more plain water than soapy water? To test this, gather one clean coin, two small cups, a dropper, tap water, dish soap, a clean spoon, a measuring tablespoon, a towel, and paper for recording counts. Label the cups P and S. Put two tablespoons of tap water in each cup. Add one drop of dish soap to S only, then stir S with the spoon. Set the coin on a level table. Choose one side of the coin to face up in both trials.

2. Start with cup P. Squeeze the dropper, place its tip in P, and release to draw up water. Hold the tip about one centimeter above the center of the coin. Add drops one at a time, keeping the tip at the same height. After each drop, check whether water has run over the edge. If none has spilled, add another drop. As soon as water spills, stop. Record the number of drops that stayed on the coin; do not count the drop that caused the spill.

3. Dry the coin completely with the towel before the second trial. Empty the dropper into a sink, rinse it three times with plain tap water, and squeeze it empty. Now draw liquid from S. Return the coin to the same place with the same side up, and repeat the drop-and-check steps from the first trial. Record the number of soapy drops that stayed on the coin. Compare the two counts. If they match, report a tie instead of claiming one liquid held more drops. The counts describe this test, not every possible test.

2 ANSWER WITH EVIDENCE

Use the passage

1. Which cup gets soap, and which cup do you test first?

2. What do you check after each drop, and what tells you to stop adding drops?

3. After the first trial, what must you do to the coin and dropper before drawing liquid from S?

4. If the two recorded counts match, what do you report? Does that result prove the counts will match in every test?

3 YOUR TURN

Your own words

Write a four-step checklist for a partner to run a third trial using cup P after the soapy trial. Include how to prepare the coin and dropper, when to stop, and what count to record.

ANSWER KEY

Drops on a Coin

GRADES 6-8 · 6-8.RST.3

PART 1 · READ AND MARK

Underline each action in order, circle the condition that tells you when to stop adding drops, and number the two places where you record a count. Use your marks to track the procedure without skipping a step. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Which cup gets soap, and which cup do you test first?	**Add soap to S only. Test P first.**
2	What do you check after each drop, and what tells you to stop adding drops?	**Check whether water has run over the coin's edge. Stop as soon as water spills.**
3	After the first trial, what must you do to the coin and dropper before drawing liquid from S?	**Dry the coin completely. Empty the dropper into a sink, rinse it three times with plain tap water, and squeeze it empty.**
4	If the two recorded counts match, what do you report? Does that result prove the counts will match in every test?	**Report a tie. No, the counts describe this test, not every possible test.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

1. Dry the coin completely and put it in the same place with the same side up.
2. Empty the dropper, rinse it three times with tap water, squeeze it empty, and draw water from P.
3. Hold the tip about one centimeter above the coin's center. Add one drop at a time and check for spills after each drop.
4. Stop at the first spill. Record the number of drops that stayed on the coin, not the drop that caused the spill.

Accept equivalent wording that preserves the order and the condition for stopping. In the checklist, the drop that causes the spill must be excluded from the count.