

Test It Again

Use evidence to tell repeated trials from independent checks.

SC.7.N.1.2 "Differentiate replication (by others) from repetition (multiple trials)."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each action that shows **repetition**, and circle each action that shows **replication**. Number the details that tell you who did the work and whether the procedure was tried again.

Creek Temperature Investigation

- ① On Monday, the River Watch team tested whether shade changes the water temperature in a small creek. Maya placed identical thermometers at three shaded spots and three sunny spots. She recorded each thermometer after ten minutes, then repeated the same measurements twice more. These repeated trials helped her see whether one unusual reading was affecting the pattern. The team kept the thermometer type, measurement time, and locations the same during all three trials. Their results showed that the shaded spots were usually cooler.
- ② Later, a science class at another school read the River Watch procedure and carried out the investigation at its own creek. The class used the same thermometer model, waited ten minutes, and compared shaded and sunny spots. Its students did not share Maya's readings until their own work was finished. Because a different group performed the investigation, this was a replication. The new creek had different rocks and water flow, so matching results would make the conclusion more trustworthy.
- ③ Both kinds of evidence matter, but they answer different questions. Repetition checks whether a team's result is consistent when that team tries the procedure several times. Replication checks whether other people can obtain a similar result by using the procedure. Scientists look closely at details before comparing results, including tools, conditions, and measurements. If results differ, they investigate possible reasons rather than choosing a result they prefer. Careful notes allow another group to repeat the work fairly.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Maya measured the creek temperature three times. Is this repetition or replication? Use one detail from the passage to explain.

2 The class at another school tested its own creek. Is this repetition or replication? Use one detail from the passage to explain.

3 How is the purpose of repetition different from the purpose of replication?

4 If the two groups get different results, what should scientists do? What makes this investigation possible?

3 YOUR TURN _____ Your own words

Choose a testable question about your schoolyard. Write 3 to 4 sentences describing three repeated trials your team would do and one replication another group would do. Label the repetition and replication.

PART 1 • READ AND MARK

Underline each action that shows **repetition**, and circle each action that shows **replication**. Number the details that tell you who did the work and whether the procedure was tried again. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Maya measured the creek temperature three times. Is this repetition or replication? Use one detail from the passage to explain.	It is repetition because the River Watch team repeated the same measurements twice more while keeping the thermometer type, time, and locations the same.
2	The class at another school tested its own creek. Is this repetition or replication? Use one detail from the passage to explain.	It is replication because a different group performed the investigation using the River Watch procedure.
3	How is the purpose of repetition different from the purpose of replication?	Repetition checks whether one team's results are consistent across several trials. Replication checks whether other people can obtain a similar result using the procedure.
4	If the two groups get different results, what should scientists do? What makes this investigation possible?	Scientists should investigate possible reasons for the difference. Careful notes about the procedure, tools, conditions, and measurements make a fair comparison possible.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Question: Does mulch keep soil cooler than bare soil at noon? My team will place identical thermometers in mulched and bare-soil spots at noon on three days, keeping the depth and measurement time the same. Those three trials are repetition. A second class will use the same procedure in another schoolyard, which is replication.

Accept any accurate distinction between repeated trials by the same team and an investigation repeated by another group. For the open response, accept reasonable testable questions and procedures that clearly label both types of evidence.