

Fair Test Plans

Plan an investigation that changes only one thing.

3.1.b.i “planning and carrying out investigations with guidance, plan and conduct investigations”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline the team’s test question, circle the one change they made, and number the three planned actions in the last paragraph. These marks show how the team planned a fair investigation.

Sun or Shade?

- ① Ms. Chen’s class wanted to find out whether the amount of sunlight changes how quickly an ice cube melts. With her guidance, a team made a testable question: “Does an ice cube melt faster in sun or shade?” They chose two same-size ice cubes, two identical plates, a stopwatch, and a recording sheet. They planned to write down what happened.
- ② To make a fair test, the team kept some things the same. Both plates sat outside at the same time. Each ice cube began on a dry plate. The students placed one plate in a sunny spot and one in a shaded spot. The place with sunlight was the one change, or variable. They decided not to touch or move either cube during the test.
- ③ Before starting, they wrote their steps: put the cubes on the plates, start the stopwatch, and check each cube every two minutes. They planned to record the time when each cube was completely melted. Then the team would compare the two times. They would repeat the investigation two more times because repeated results can make their conclusion more trustworthy.

2

ANSWER WITH EVIDENCE

Use the passage

1

What testable question did the team investigate?

2

What was the one variable the team changed?

3

Name two things the team kept the same to make the test fair.

4

What data would the team record, and why would they repeat the investigation?

3

YOUR TURN

Your own words

Plan a safe investigation to find out whether sugar dissolves faster in cold water or room-temperature water. In the left column, write Question, Change, Keep Same, Steps, and Data Plan. In the right column, complete each part of your plan.

PLAN PART	YOUR PLAN

PART 1 • READ AND MARK

Underline the team's test question, circle the one change they made, and number the three planned actions in the last paragraph. These marks show how the team planned a fair investigation. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What testable question did the team investigate?	Does an ice cube melt faster in sun or shade?
2	What was the one variable the team changed?	The amount of sunlight, using a sunny spot or a shaded spot.
3	Name two things the team kept the same to make the test fair.	Answers may include same-size ice cubes, identical plates, dry plates, and putting both plates outside at the same time.
4	What data would the team record, and why would they repeat the investigation?	They would record the time when each ice cube completely melted. They would repeat the investigation to make their conclusion more trustworthy.

PART 3 • YOUR TURN (SAMPLE ANSWER)

PLAN PART	YOUR PLAN
Question	Does sugar dissolve faster in cold water or room-temperature water?
Change	Water temperature, cold or room temperature.
Keep Same	Use the same amount of water, sugar, stirring, and same-size cups.
Steps	Put equal water in two cups, add equal sugar, stir each cup 10 times, and start a stopwatch.
Data Plan	Record how long the sugar takes to dissolve in each cup. Repeat the test three times.

Accept equivalent wording for the planned ice-cube investigation and any two accurate controlled conditions. For the open task, accept safe plans with one changed variable, at least two conditions kept the same, clear steps, and a way to record results.