LESSON MAKER PRO

Fair Sample Detectives

Choose data that reflects a whole group.

GRADE 6 · 6.PS.1.c

6.PS.1.c "Determine the factors that will ensure that the data collected is a sample that is representative of a larger population."

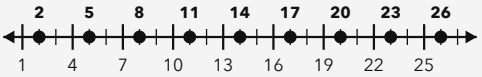
NAME _____ DATE _____

BUILD A FAIR SAMPLE

A representative sample reflects important groups in the population. Choose people randomly from the whole population, use enough people, and keep group proportions similar when groups are known.

WORKED EXAMPLE

A club has 27 members. The member list is put in random order. Make a sample of 9 members by choosing every third name after a random start.



1. Use a random tool to choose 2 as the start.
2. Count by 3: 2, 5, 8, 11, 14, 17, 20, 23, 26.
3. The sample has 9 members from the full random list.

Answer: Choose members numbered 2, 5, 8, 11, 14, 17, 20, 23, and 26.

PRACTICE 4 problems

1 A club has 55 sixth graders and 45 seventh graders. For a representative sample of 20 members, how many students from each grade should be chosen?

ANSWER _____

2 Lina wants opinions from 140 sixth graders. Which sample is better? A. The first 14 students who enter the library. B. Fourteen names chosen randomly from a list of all 140 sixth graders.

ANSWER _____

3 A survey asks 18 students leaving a skate park about recess games. Is this sample representative of all sixth graders? Explain.

ANSWER _____

4 Four homerooms each have 28 students. Describe a representative way to choose 16 students for a survey.

ANSWER _____

APPLY IT Show your work

1 Jordan wants a representative sample of 30 students to plan music for an activity fair. The table shows the students in each lunch period. How many students should Jordan choose randomly from each lunch period?

STUDENTS AT THE ACTIVITY FAIR

Lunch period	Students
Early	90
Middle	60
Late	30

ANSWER _____

2 Student council wants opinions from 300 sixth graders about a new game area. A member surveys 30 friends from her basketball team. Describe two changes that would make the sample more representative.

WORK SPACE

ANSWER _____

CHALLENGE One step up

The school newspaper wants a representative sample of 40 sixth graders. Team Red has 96 students, Team Blue has 72, Team Green has 48, and Team Yellow has 24. State how many students to choose from each team and how to choose them.

WORK SPACE AND ANSWER

ANSWER KEY

Fair Sample Detectives

GRADE 6 · 6.PS.1.c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A club has 55 sixth graders and 45 seventh graders. For a representative sample of 20 members, how many students from each grade should be chosen?	**11 sixth graders and 9 seventh graders**
2	Lina wants opinions from 140 sixth graders. Which sample is better? A. The first 14 students who enter the library. B. Fourteen names chosen randomly from a list of all 140 sixth graders.	**B**
3	A survey asks 18 students leaving a skate park about recess games. Is this sample representative of all sixth graders? Explain.	**No. Students at the skate park may not have the same recess-game opinions as all sixth graders.**
4	Four homerooms each have 28 students. Describe a representative way to choose 16 students for a survey.	**Randomly choose 4 students from each homeroom.**

PART 2 · APPLY IT

1. **15 from Early lunch, 10 from Middle lunch, and 5 from Late lunch** There are 180 students total. A sample of 30 is 1/6 of the population, so choose 1/6 of each lunch group randomly.
2. **Use a list of all 300 sixth graders, then choose 30 names randomly from the full list.** The basketball team is only one group of students. A random sample from the full grade gives every sixth grader a chance to be selected.

CHALLENGE

Choose 16 from Team Red, 12 from Team Blue, 8 from Team Green, and 4 from Team Yellow. Choose the students randomly within each team.

Accept equivalent wording that names a random selection from the whole population. For proportional samples, accept correct group counts in any order when each count is matched to its group.