LESSON MAKER PRO

Seeds by Habitat

Compare plant reproductive groups in habitat surveys

HIGH SCHOOL · BOT.2

BOT.2 "Students will identify evolutionary modifications necessary for the terrestrial survival of plants. Summarize and justify the characteristics of nonvascular algae (blue-green and green algae) and bryophytes that provide evidence of..."

NAME _____ DATE _____

PERCENT OCCURRENCE

A habitat survey counts individual plants in each reproductive group. To find a group's percent occurrence, divide its count by the total number of plants, then multiply by 100%. Include seedless plants in the total, even though they do not produce seeds.

WORKED EXAMPLE

Students count plants along a sidewalk. What percent have naked seeds?

SIDEWALK SURVEY

Seedless	Naked-seed	Enclosed-seed
4	8	13

1. Find the total: 4 + 8 + 13 = 25 plants.
2. Divide the naked-seed count by the total: 8/25.
3. Convert to a percent: 8/25 x 100% = 32%.

Answer: 32% have naked seeds.

PRACTICE 6 problems

1 What is the percent occurrence of naked-seed plants in this survey?

SCHOOLYARD SURVEY

Seedless	Naked-seed	Enclosed-seed
1	3	16

ANSWER _____

2 What is the percent occurrence of enclosed-seed plants in this survey?

MEADOW SURVEY

Seedless	Naked-seed	Enclosed-seed
5	10	15

ANSWER _____

3 What is the percent occurrence of seedless plants in this survey?

TRAIL SURVEY

Seedless	Naked-seed	Enclosed-seed
2	6	12

ANSWER _____

4 What is the percent occurrence of naked-seed plants in this survey?

WOODLAND SURVEY

Seedless	Naked-seed	Enclosed-seed
9	18	3

ANSWER _____

5 Naked-seed and enclosed-seed plants both produce seeds. What percent of the surveyed plants produce seeds?

HILLSIDE SURVEY

Seedless	Naked-seed	Enclosed-seed
3	12	15

ANSWER _____

6 Find the percent occurrence of enclosed-seed plants in each habitat. Which habitat has the higher percent occurrence?

TWO HABITAT SURVEYS

Habitat	Seedless	Naked-seed	Enclosed-seed
A	3	6	21
B	1	9	10

ANSWER _____

APPLY IT Show your work

1 A student photography club wants to visit the school site with the higher percent occurrence of enclosed-seed plants. Use the survey counts to choose a site. By how many percentage points is its occurrence higher?

SCHOOL SITE SURVEYS

Site	Seedless	Naked-seed	Enclosed-seed
Courtyard	5	5	40
Creek path	10	20	20

ANSWER _____

2 A school garden survey records the plants shown. Gardeners replace 6 naked-seed plants with 6 enclosed-seed plants. What is the percent occurrence of enclosed-seed plants before and after the change? How many percentage points does it increase?

GARDEN SURVEY BEFORE REPLACEMENT

Seedless	Naked-seed	Enclosed-seed
6	18	36

ANSWER _____

CHALLENGE One step up

Which habitat has the higher percent occurrence of enclosed-seed plants? Explain in two sentences why comparing the enclosed-seed counts alone could give the wrong answer.

HABITAT SURVEY COMPARISON

Habitat	Seedless	Naked-seed	Enclosed-seed
A	9	15	36
B	3	6	21

WORK SPACE AND ANSWER

Seeds by Habitat

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	What is the percent occurrence of naked-seed plants in this survey?	**15%**
2	What is the percent occurrence of enclosed-seed plants in this survey?	**50%**
3	What is the percent occurrence of seedless plants in this survey?	**10%**
4	What is the percent occurrence of naked-seed plants in this survey?	**60%**
5	Naked-seed and enclosed-seed plants both produce seeds. What percent of the surveyed plants produce seeds?	**90%**
6	Find the percent occurrence of enclosed-seed plants in each habitat. Which habitat has the higher percent occurrence?	**Habitat A: 70%; habitat B: 50%. Habitat A is higher.**

PART 2 · APPLY IT

1. **Courtyard, by 40 percentage points.** Each site has 50 plants. Enclosed-seed occurrence is 40/50 = 80% in the courtyard and 20/50 = 40% at the creek path, a difference of 40 percentage points.
2. **Before: 60%. After: 70%. Increase: 10 percentage points.** The total stays at 60 plants. Enclosed-seed occurrence changes from 36/60 = 60% to 42/60 = 70%, an increase of 10 percentage points.

CHALLENGE

In habitat A, enclosed-seed plants are 36/60 = 60% of the total; in habitat B, they are 21/30 = 70%. Habitat B has the higher percent occurrence because its enclosed-seed plants make up a larger share of its smaller total.

These are hypothetical counts of individual plants, not counts drawn from the USDA PLANTS database. Accept equivalent calculations; distinguish a difference in percentage points from a percent increase.