Lesson 2.1 – Germination Data: Counting Sprouts and Calculating Rates

Quarter 2 · Ecosystems: Interactions, Energy & Change · Week 10

Name: _____ Partner: _____ Date: _____ Period: _____

Big Question: Did compost change how many of our radish seeds sprouted, and how do we compare groups fairly?

Word Bank: germination rate · percent · seedling · emergence · mean · range · bar graph · variability

My Task

Record seedling counts and calculate germination rates.

Plot	C or N	Seeds sown	Seedlings	Germination rate (%)
1				
2				
3				
4				
5				
6				
7				
8				
C mean and range				
N mean and range				

Support: Provide a percent calculator template and a partly drawn graph.	**Challenge:** Seed packets usually claim a germination rate. Compare our class rate with the packet. Give two reasons our garden might differ and how you would test one.

Think & Respond

1. Write a claim about compost and germination using means and ranges.

2. Why is percent better than counts for comparing plots?

PRACTICE ITEM — answer the item for your grade

Grade 6: Twelve seeds were planted and 9 sprouted. What is the germination rate? (Illustrative data.) A) 9% B) 12% C) 75% D) 90%

Grade 7: Compost plots averaged 82% germination and no-compost plots averaged 80%. Why might compost have little effect on germination? (Illustrative data.) A) Seeds use stored food in their cotyledons until leaves form. B) Compost blocks water. C) Seeds need compost to sprout. D) Radishes cannot germinate.

Grade 8: C plots ranged from 70% to 92%; N plots ranged from 68% to 90%. Means were 82% and 80%. What is the best conclusion? (Illustrative data.) A) Compost strongly increases germination. B) The difference is small compared with the variation, so there is no clear evidence of an effect on germination. C) No-compost is better. D) The data are useless.

My grade: ____ My answer: ____ Why: _____

EXIT TICKET

1. Calculate the germination rate for 15 seedlings from 18 seeds.

2. What were the mean rates for C and N plots?

3. Is the difference meaningful? Explain.