



Pumpkin Patch

Right before pumpkin picking season, Piper hires you to work at her pumpkin patch. Your first task is to determine the number of pumpkins available for picking. Piper grows both pumpkins and gourds in the pick-your-own field.

The diagram on the next page shows the field that contains the pumpkins and the gourds.

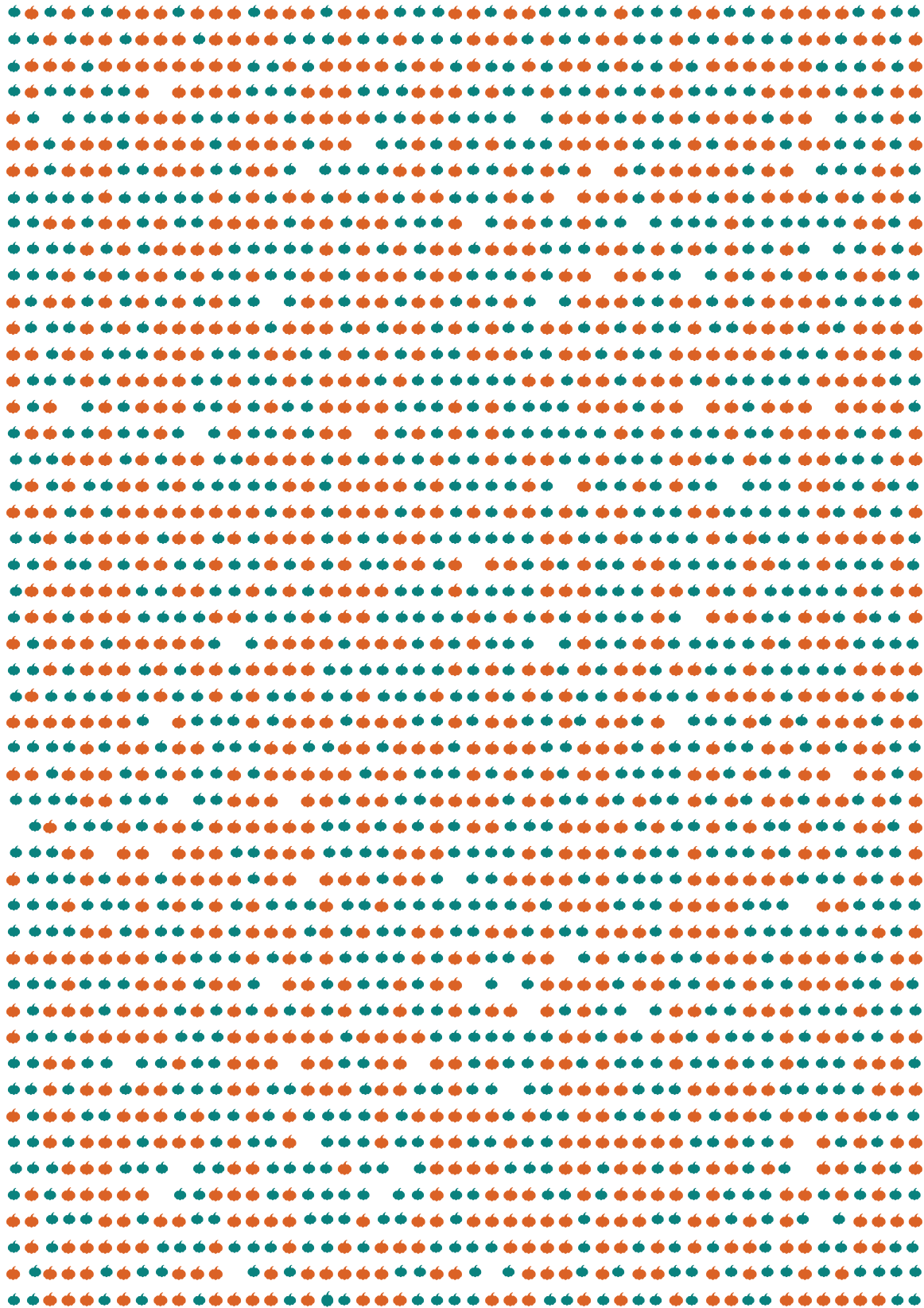
- The orange shapes represent pumpkins.
- The green shapes represent gourds.
- There are also gaps in the field.

You and Piper agree that it would take too long to count all the pumpkins in the field.

- 1 Design and carry out a method to estimate the total number of pumpkins in the field without counting all the shapes. Then, prepare a presentation for your classmates that includes an explanation of your method, your results, and justification of your estimate.



Pumpkins and Gourds





SUMMARY You can use statistics from multiple random samples and data analysis, including proportional reasoning, to estimate a population’s parameter.



TALK THE TALK



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Answers will vary.

Students should describe an appropriate sampling method that takes into account the different proportions of pumpkins and gourds. They should divide the field into equally sized areas and sample from the different areas. Students should use proportional reasoning in their solutions.

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Chunking the Activity

▶ Read and discuss the situation

▶ Group students to complete the activity

▶ Share and summarize

DIFFERENTIATION STRATEGY



See page 558A to support students who struggle with the activity.

Student Look-Fors

- Reference to the previous activities in this lesson
- Strategies that include taking multiple random samples and using proportions

Questions to Support Discourse

	TYPE	
1	How do your results compare to those of your classmates?	Gathering
	How did you include sampling in your data collection?	Probing
	Explain how you used proportions in your data analysis.	
	How is this problem related to the other problems you solved?	Seeing structure
	How confident are you in your estimation?	Reflecting and justifying
Explain how your strategies are best practices when estimating a parameter of a population.		

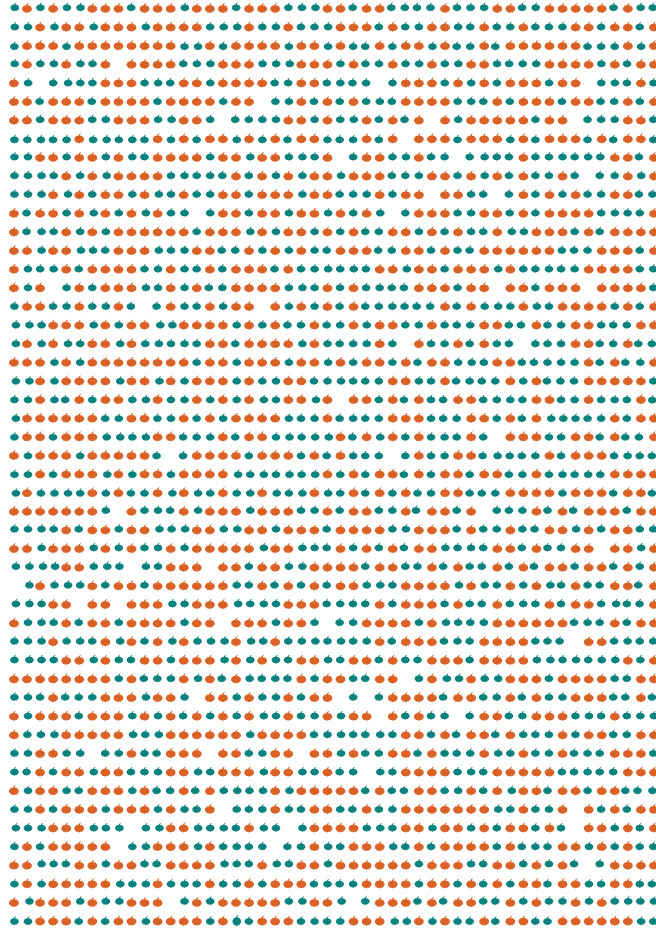
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NOTES



Pumpkins and Gourds



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Topic 3 > Drawing Inferences

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Tiles, Gumballs, and Pumpkins

This resource details additional facilitation notes to fully assist you as you plan each lesson to support all students, students who struggle, and advanced learners. It provides differentiation strategies, common student misconceptions, and suggestions to extend certain activities.



TALK THE TALK Pumpkin Patch

Session 2 of 2

Students estimate the number of pumpkins in a field. They choose strategies to determine the solution. They use sampling techniques and proportional reasoning.

CHUNK	AUDIENCE	ADDITIONAL SUPPORTS
As students complete the activity	Students who struggle	<p>DIFFERENTIATION STRATEGY</p> <p>Provide additional scaffolding by limiting the size of the pumpkin patch that they estimate.</p> <p>Alternately, you can assist them in selecting a random sample:</p> <ul style="list-style-type: none"> • Assign each row a random number and randomly select one of the rows. • Assign each column a random number and randomly select one of the columns. • Divide the pumpkin patch into 10 or 20 regions and randomly select one of them.

TOPIC 3