



LitART



LITAMATICS™



Geometry

Theme 4
Grades 5-6



MATH CURRICULUM

Geometry

Theme 4 | Grades 5-6

Litamatics™ Math Curriculum

Published by Global Learning™

2715 SE 19th Avenue

Portland, OR 97202

**For more information
or to order please call**

855-READ-500 (855-732-3500)

or visit litart.com



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Introduction

We invite you to don a pair of math goggles and start seeing the world mathematically. You will notice interesting math learning possibilities everywhere you look. As you walk from the playground to the classroom, you can't help but wonder how many steps it will take. When you read a book, you feel compelled to determine the average number of words on a page, and before you roll two dice you just have to know the chances of rolling a seven.

Litamatics™ offers a collection of math learning experiences connected to award-winning books that are fun, challenging, creative, interactive, and connected to real life.

- **Project Based Learning.**

Students engage in project-based, open-ended, grade-appropriate learning opportunities aligned to state and national standards.

- **Student Centered Approach.**

Activities are structured to maximize student involvement. Less listening, more doing.

- **Essential Skills.**

Students learn essential skills through completing the activities connected to each project.

- **Evidence-based Strategies.**

Leaders use proven math teaching techniques to maximize student learning.

- **Real Results.**

Use the project-based assessments to monitor and evaluate student learning and growth.

Remember, it is okay to learn alongside your students. You don't have to know everything, but you do need to be willing to explore! That means modeling the traits of effective learners such as sticking with a task, flexible thinking, and embracing mistakes as part of learning.

We are confident that after as little as ten hours of Litamatics™, you and your students will think differently about math. You will see changes in your students' math problem solving abilities, confidence, skills, and appreciation of math.

It's not that I'm so smart, it's just that
I stay with problems longer.

- Albert Einstein



BOOK CONNECTIONS

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Desert Voices	11
Grandfather Tang's Story	19
Math Curse	27
The Reason for a Flower	35



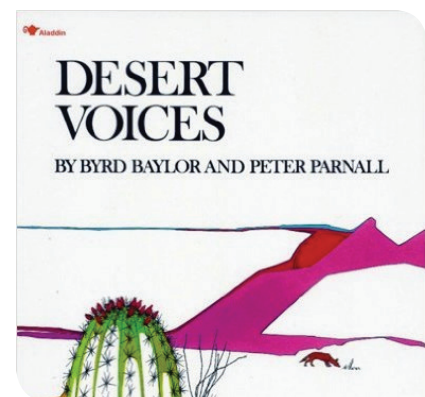
Geometry
Grades 5-6

Desert Voices

by Byrd Baylor

ACTIVITIES

- Litamatics
- Connections
- Tales, Puzzles, and Problems
- MathART





Where are the Cacti?

TIME

- 30 minutes

LEARNING

- Geometry

GROUPING

- Pairs

MATERIALS

- SRP
- Dice

PREPARING

- *Distribute the materials.*

ACTING

- In this game, we will find the desert cacti by rolling dice and identifying the coordinates.
- A "coordinate" is a location.
- The left-right (horizontal) direction is commonly called "X" or the "x-axis."
- The up-down (vertical) direction is commonly called "Y" or the "y-axis."
- Where they cross over is the "O" point. To find a location, we measure from the zero point.
- Locations are identified using "ordered pairs." Let's try it. Find the location (3,6). Is there a cactus at that location?
- *Allow for responses.*
- A cactus is at (3,6). Remember, the first number is units to the right on the x-axis and the second number is units up on the y-axis.
- To play, take turns rolling two dice. Use the result in either order to make an ordered pair. For example, if you roll a 1 and a 5, you can use the ordered pair (1,5) or (5,1).
- You have to declare the ordered pair within five seconds of your roll. Your goal is to find a cactus.
- Find the location on the chart. Does it contain a cactus?
- If so, record the coordinates in the table.
- The game ends when a player has found six cacti. At that point, each player calculates their total score.

CHECKING IN

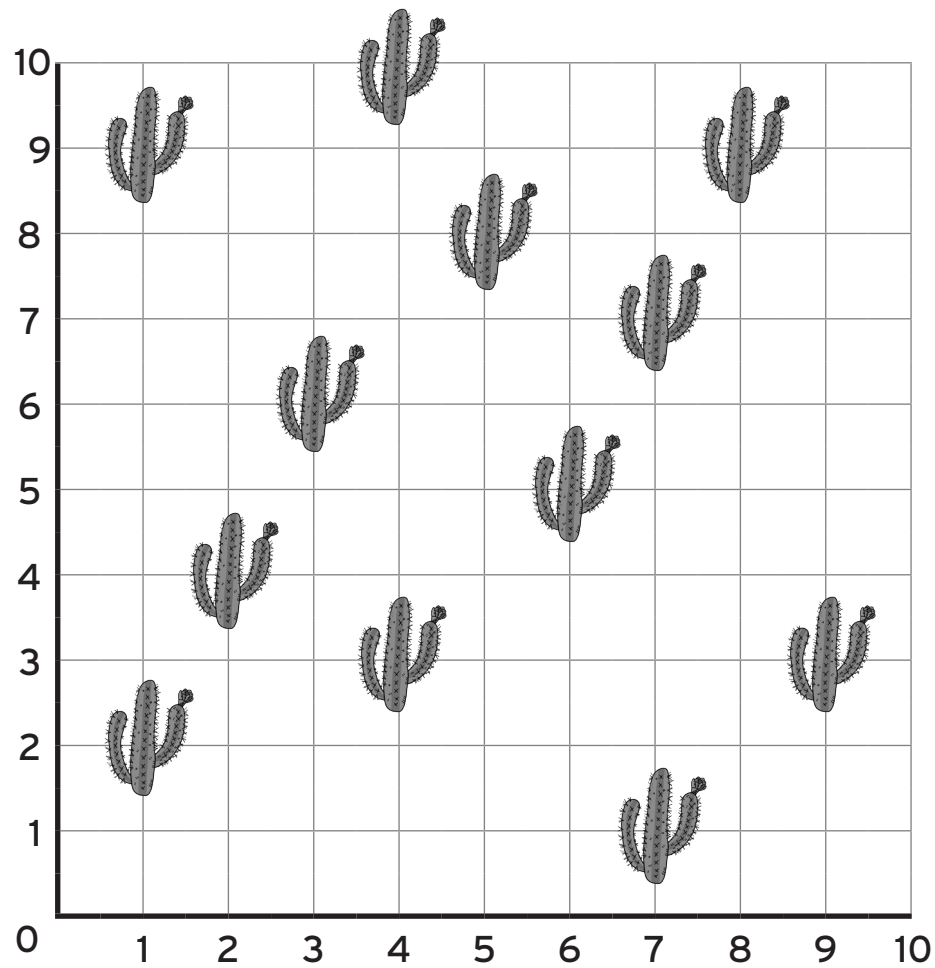
- *Can students find locations on a coordinate plane?*

EXTENDING

- What percent of grid coordinates contain a cactus?

Where are the Cacti?

	X-Axis	Y-Axis	Cactus!	(1 point for each side) Score
1				
2				
3				
4				
5				
6				
			Total	





Connections

TIME

- 5 minutes

LEARNING

- Geometry

GROUPING

- Small groups

MATERIALS

- Book

PREPARING

- It's time for Connections.
- *Distribute the materials.*
- *Display the book title and author clearly by writing it or projecting it.*
- Keep your pages face down until I give the signal.

ACTING

- Remember, our job is to find the answers to as many questions as we can before time is up.
- Be sure to record your answers so we can discuss them later.
- Each question will relate to the book in some way.
- When I give the signal, turn your paper over and get started.

CHECKING IN

- *Look for students who seem stuck.*
- *Help students read and clarify questions as needed.*
- *Assist students with choosing strategies to solve problems.*
- *After a few minutes signal time is up.*
- When I point to your group, present your answer.
- *Write the response given.*
- Does any group have a different answer?
- *If there are different responses, write each on board.*
- Who can prove if one of the answers are correct?
- *Allow a student to defend one of the answers given.*

EXTENDING

- *Invite students to make up questions for others to solve.*

Connections

1) How many letters are in the title of the story?

DESERT VOICES

1

2) A coyote has 4 paws and 1 tail.
How many paws and tails are there
in a pack of 6 coyotes?

2

3) How many letters appear more than
once in the author's name?

BYRD BAYLOR

3

4) The letter S is worth 100 points.
All other letters are worth 7 points.
What is the value of the title of the book?

4

5) Estimate how many times the word
DESERT appears in the book.

5



Tales, Puzzles, and Problems

TIME

- 10 minutes

LEARNING

- Geometry

GROUPING

- Small groups

MATERIALS

- Counters

PREPARING

- *Distribute the materials.*

ACTING

- It's time for Tales, Puzzles, and Problems.
- Here is today's challenge.
- *Read the steps from the student page.*
- Try using one of the problem solving strategies.
- As you work, record what you do to solve the problem and show it in the first box.
- When you have a solution, write it in the second box.

CHECKING IN

- *Look for students who seem stuck.*
- *Assist students with choosing strategies to solve the problem.*

EXTENDING

- *Invite students to explain how they solved the problem.*
- *Ask students to come up with a related but more challenging or simpler problem to solve.*

SUMMARIZING

- Today you solved a math problem by applying a strategy.

Tales, Puzzles, and Problems

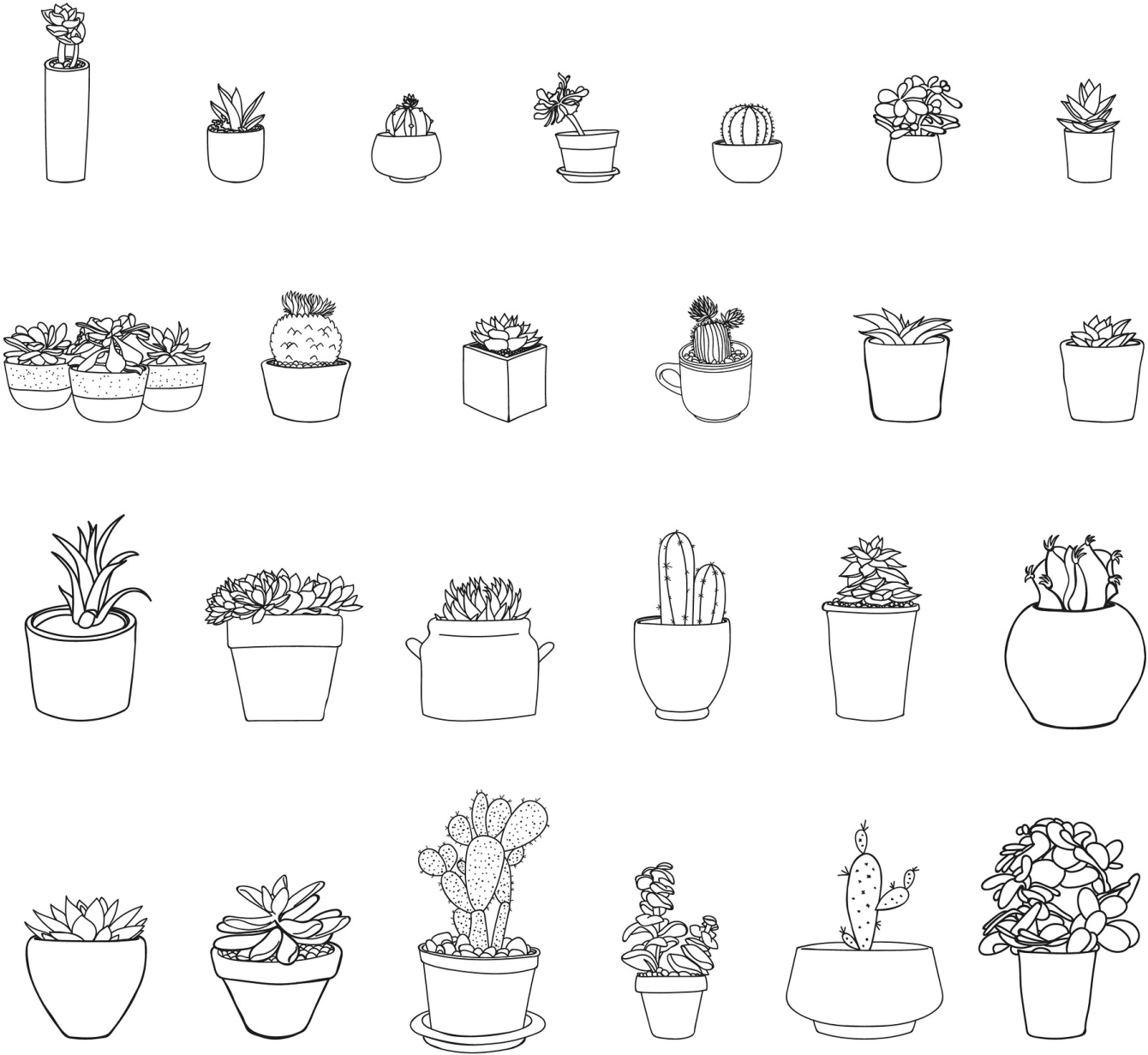
- A cactus has 150 spines.
There are 5 cacti in a group.
How many total spines are in the group?
- Show your problem-solving process in the first box.
- Show your solution in the second box.

Process

Solution

MathART

- Look at the illustrations of cacti in the book.
- Color the cacti and pots below.
- Consider creating a secret pattern with the colors you use.





LITAMATICS™

TEACHER GUIDES

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Geometry

Grades 5-6

Coordinate Targets

STANDARD

Geometry

Graph points on the coordinate plane to solve real-world and mathematical problems.

Objective

Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line, and a given point in the plane located by using an ordered pair of numbers, called its coordinates.



Coordinate Targets

TIME

- 30 minutes

LEARNING

- Geometry

GROUPING

- Pairs

MATERIALS

- SRP
- Cubes
- Dice (10-sided)

PREPARING

- *Distribute the materials.*

PLAYING

- In this game, you are trying to collect the most cubes by locating them on a coordinate plane.
- *Allow for responses.*
- A "coordinate" is a location.
- The left-right (horizontal) direction is commonly called "X" or the "x-axis."
- The up-down (vertical) direction is commonly called "Y" or the "y-axis."
- Where they intersect is the "0" point. To find a location, we measure from the zero point.
- Locations are identified using ordered pairs. An "ordered pair" can be used to show the position on a graph, where the "x" (horizontal) value is first, and the "y" (vertical) value is second. Let's try it. Place a cube at location (3,7).
- *Allow for responses.*
- To play, the first player rolls two ten-sided dice, creates an ordered pair, and places a cube from the pot at that location.
- Players take turns rolling and creating ordered pairs. If the location has a cube on it, the player takes the cube. If not, the player places a cube from the pot at that location.
- The first player to collect five cubes wins.

CHECKING IN

- *Can students find locations on a coordinate plane?*

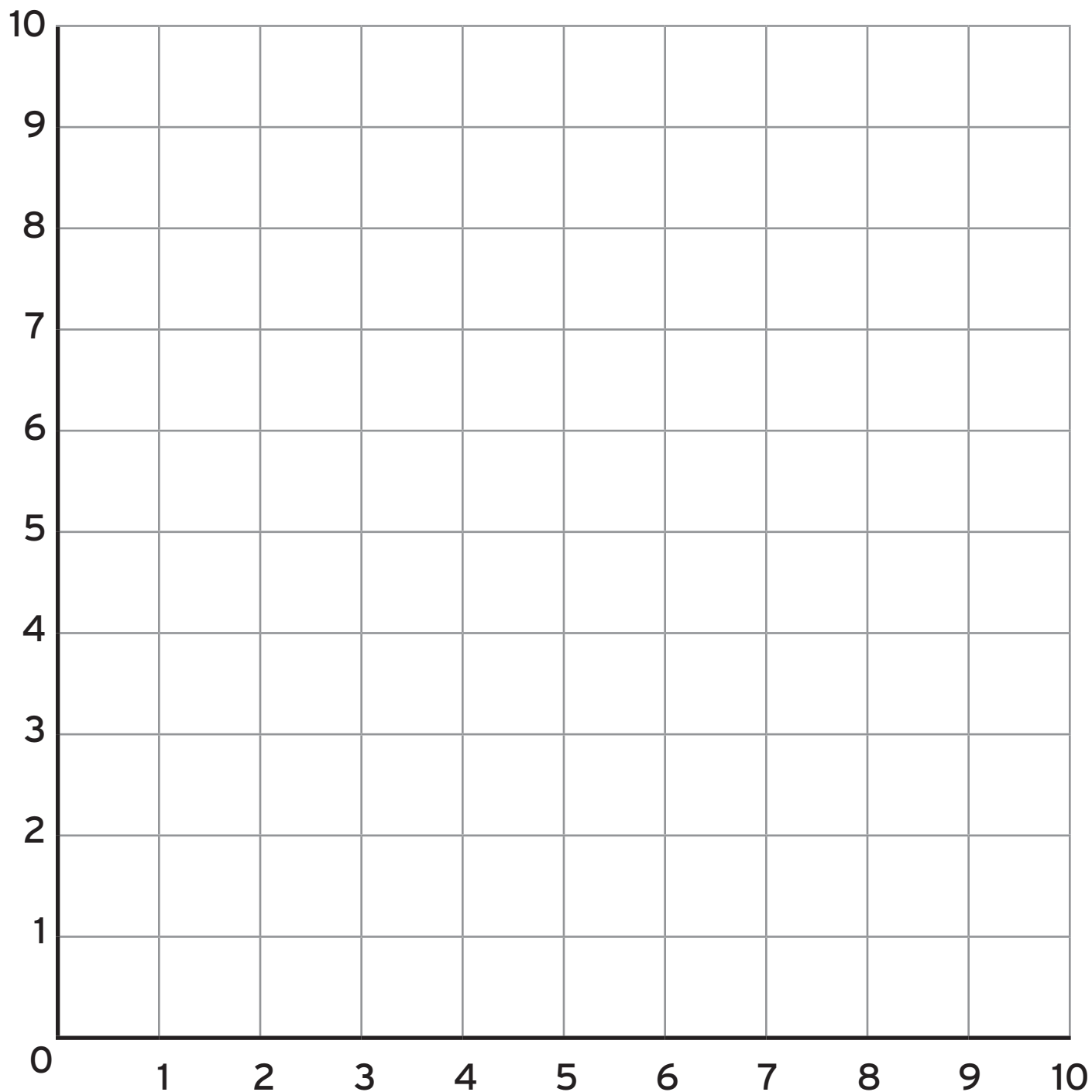
EXTENDING

- How many locations are on the grid?

NAME



Coordinate Targets



NAME



Litamatics Journal

What is the "x-axis" on a coordinate grid?





Geometry

Grades 5-6

Walls!

STANDARD

Geometry

Graph points on the coordinate plane to solve real-world and mathematical problems.

Objective

Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line, and a given point in the plane located by using an ordered pair of numbers, called its coordinates.



Walls!

TIME

- 30 minutes

LEARNING

- Geometry

GROUPING

- Pairs or small groups

MATERIALS

- SRP
- Dice (10-sided)
- Rulers or straightedges

PREPARING

- *Distribute the materials.*

PLAYING

- The left-right (horizontal) direction is commonly called "X" or the "x-axis."
- The up-down (vertical) direction is commonly called "Y" or the "y-axis."
- Where they intersect is the "O" point. To find a location, we measure from the zero point.
- Locations are identified using ordered pairs. An ordered pair can be used to show the position on a graph, where the "x" (horizontal) value is first, and the "y" (vertical) value is second. Let's try it. Place a cube at location (3,7).
- *Allow for responses.*
- On each turn, a player rolls two ten-sided dice, creates an ordered pair, and colors in a point at that intersection. The player repeats the process to create a second point and draws a straight line between the points.
- If a player cannot draw a line without intersecting with an existing line, they are eliminated.
- Continue playing until one player is left.

CHECKING IN

- *Can students find coordinates on a coordinate plane?*

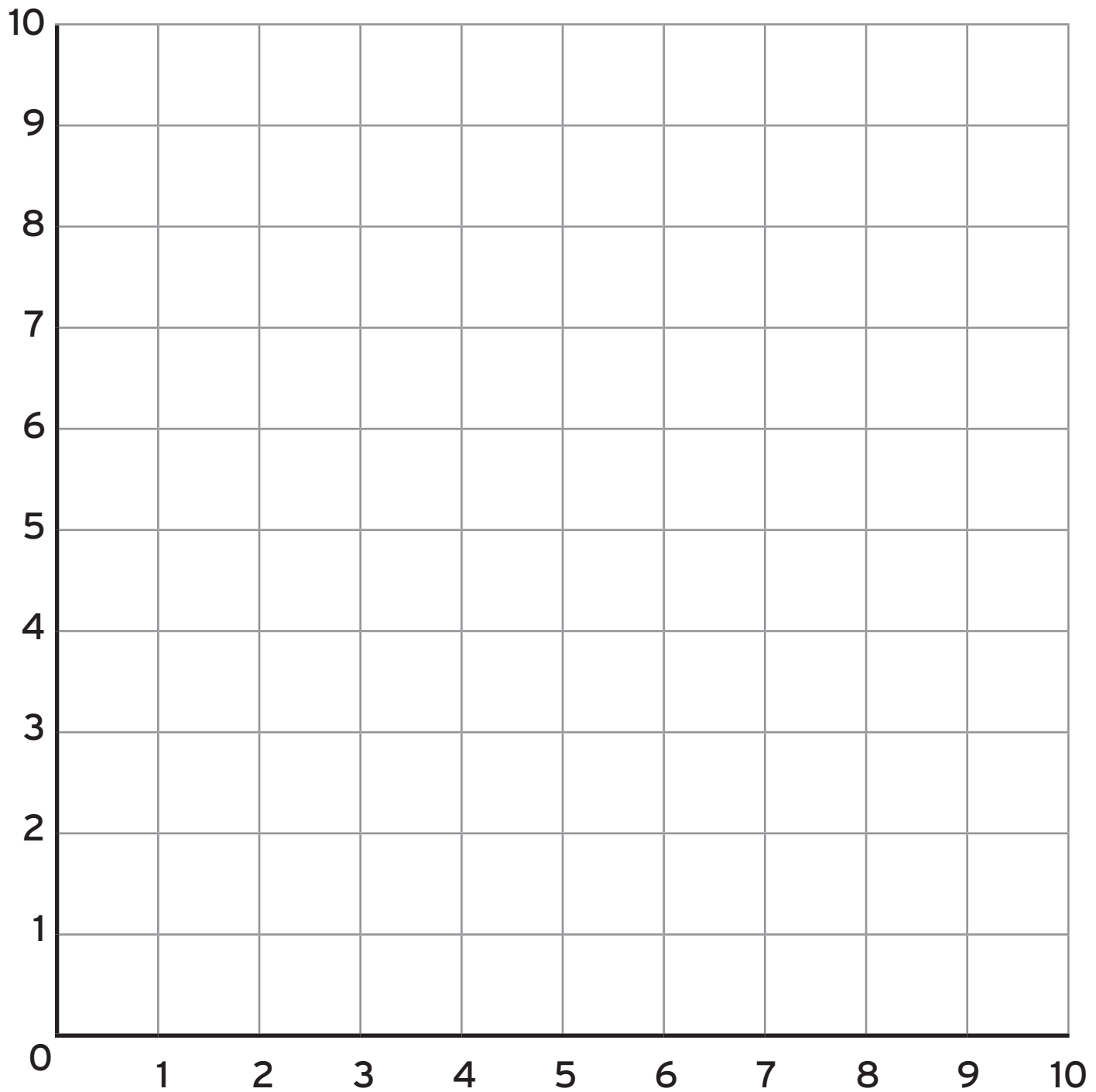
EXTENDING

- Play again.

NAME



Walls!



NAME



Litamatics Journal

What is a "coordinate"?





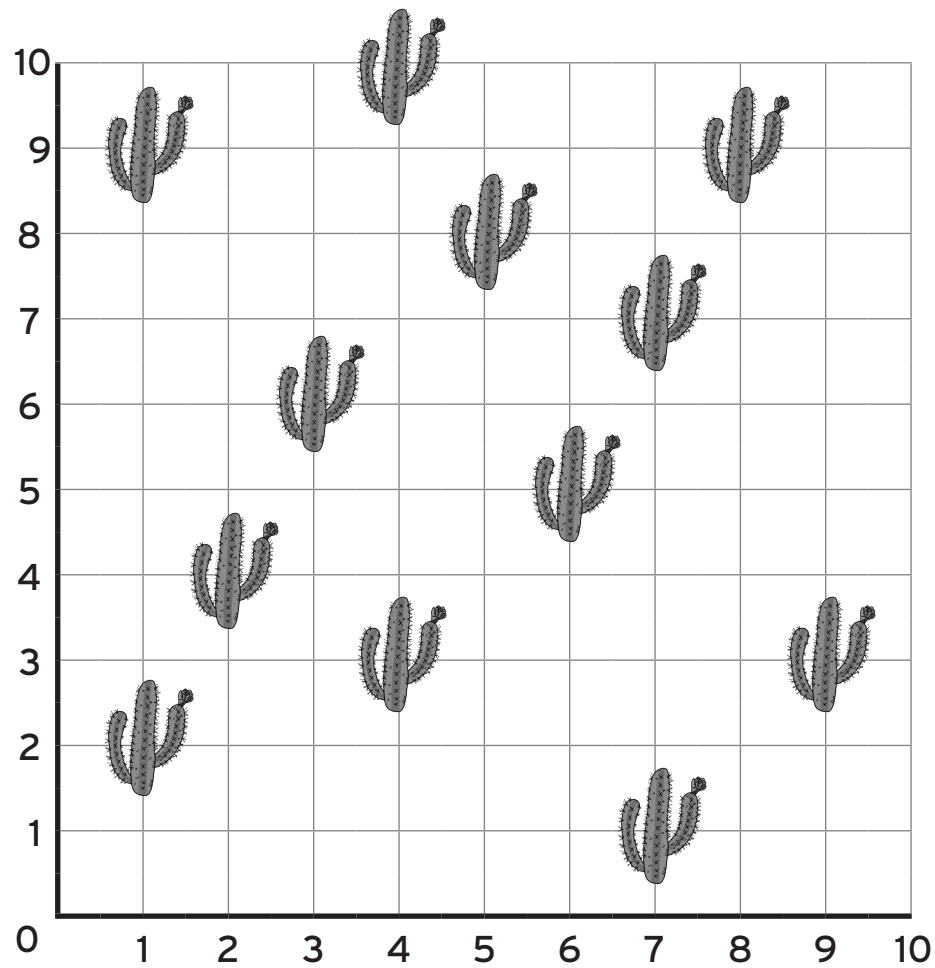
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Where are the Cacti?

	X-Axis	Y-Axis	Cactus!	(1 point for each side) Score
1				
2				
3				
4				
5				
6				
	Total			



Connections

1) How many letters are in the title of the story?

D E S E R T V O I C E S

1

2) A coyote has 4 paws and 1 tail.
How many paws and tails are there
in a pack of 6 coyotes?

2

3) How many letters appear more than
once in the author's name?

B Y R D B A Y L O R

3

4) The letter S is worth 100 points.
All other letters are worth 7 points.
What is the value of the title of the book?

4

5) Estimate how many times the word
DESERT appears in the book.

5

Tales, Puzzles, and Problems

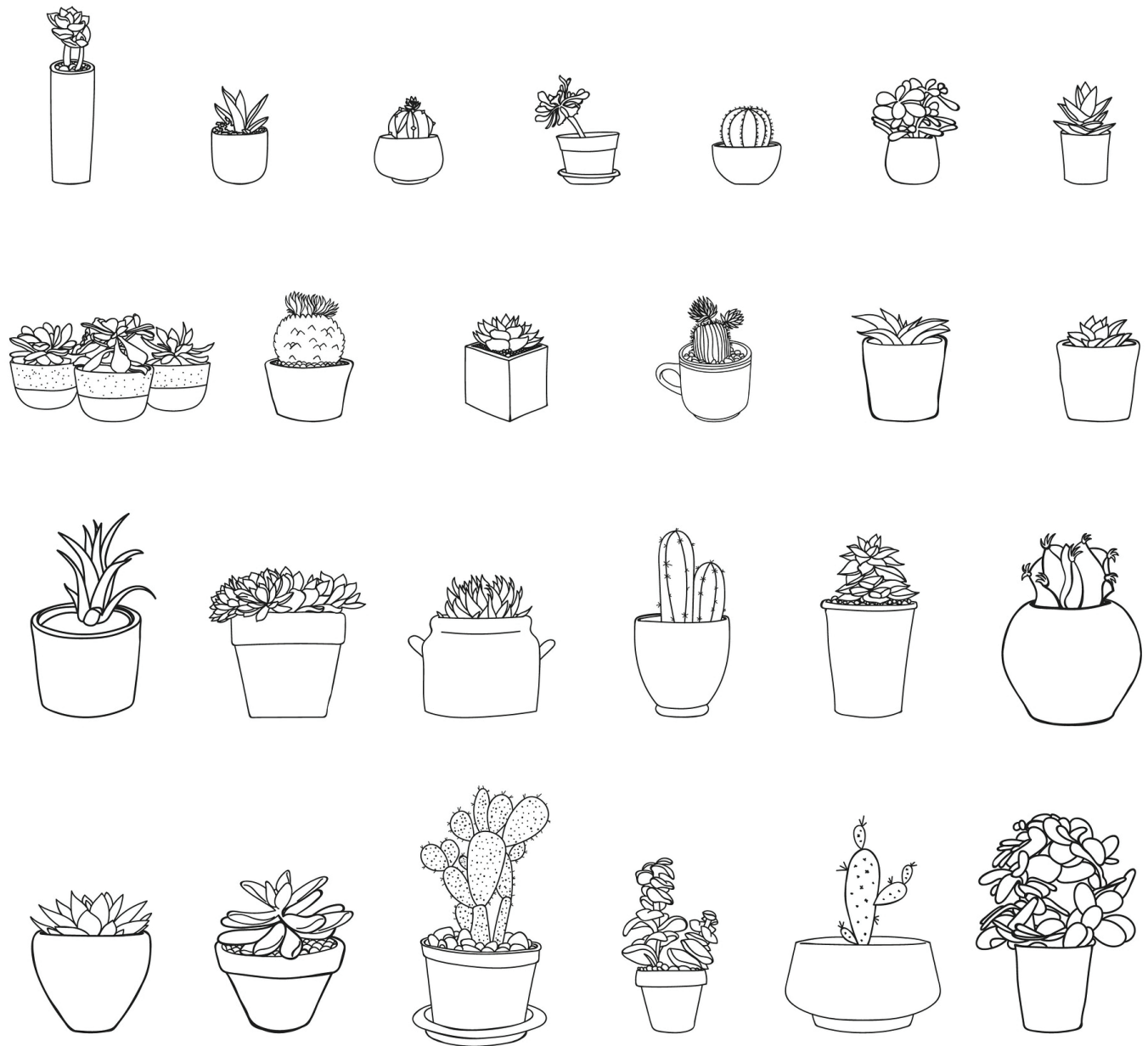
- A cactus has 150 spines.
There are 5 cacti in a group.
How many total spines are in the group?
- Show your problem-solving process in the first box.
- Show your solution in the second box.

Process

Solution

MathART

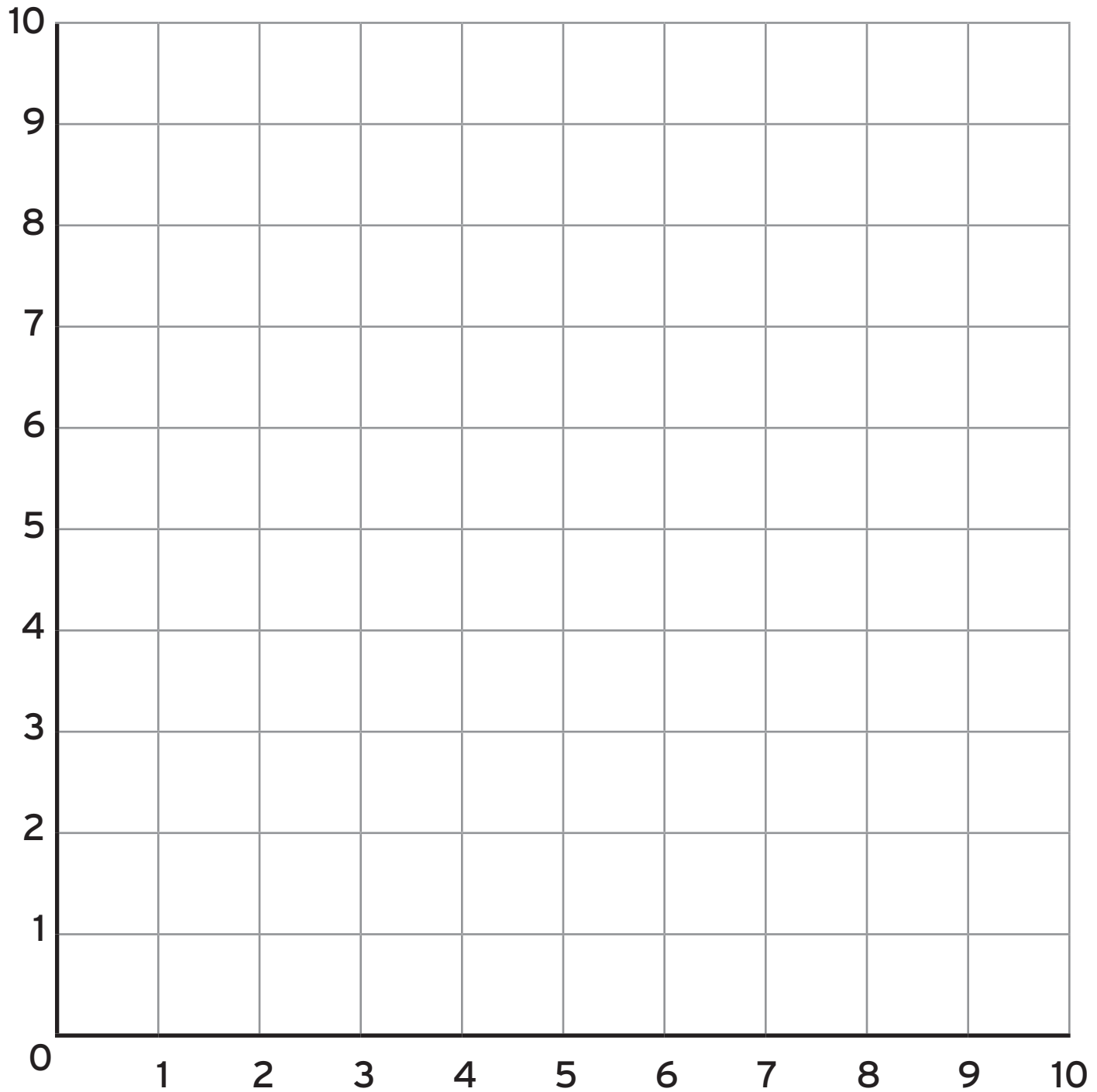
- Look at the illustrations of cacti in the book.
- Color the cacti and pots below.
- Consider creating a secret pattern with the colors you use.



NAME



Coordinate Targets



NAME



Litamatics Journal

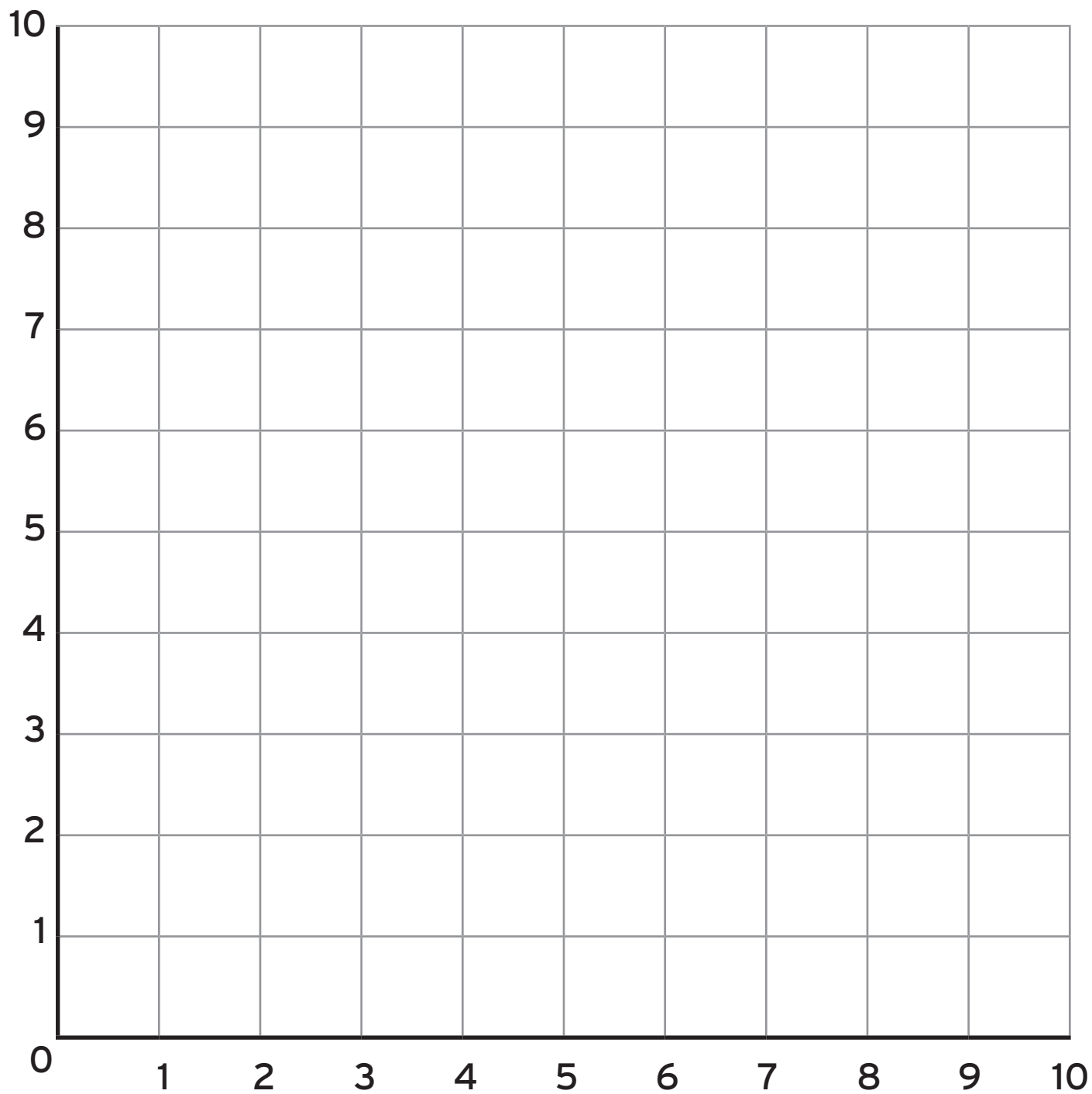
What is the "x-axis" on a coordinate grid?



NAME



Walls!



NAME



Litamatics Journal

What is a "coordinate"?





Litamatics™ is a unique and engaging math program that combines hands-on learning games, effective teaching strategies, and award-winning books.