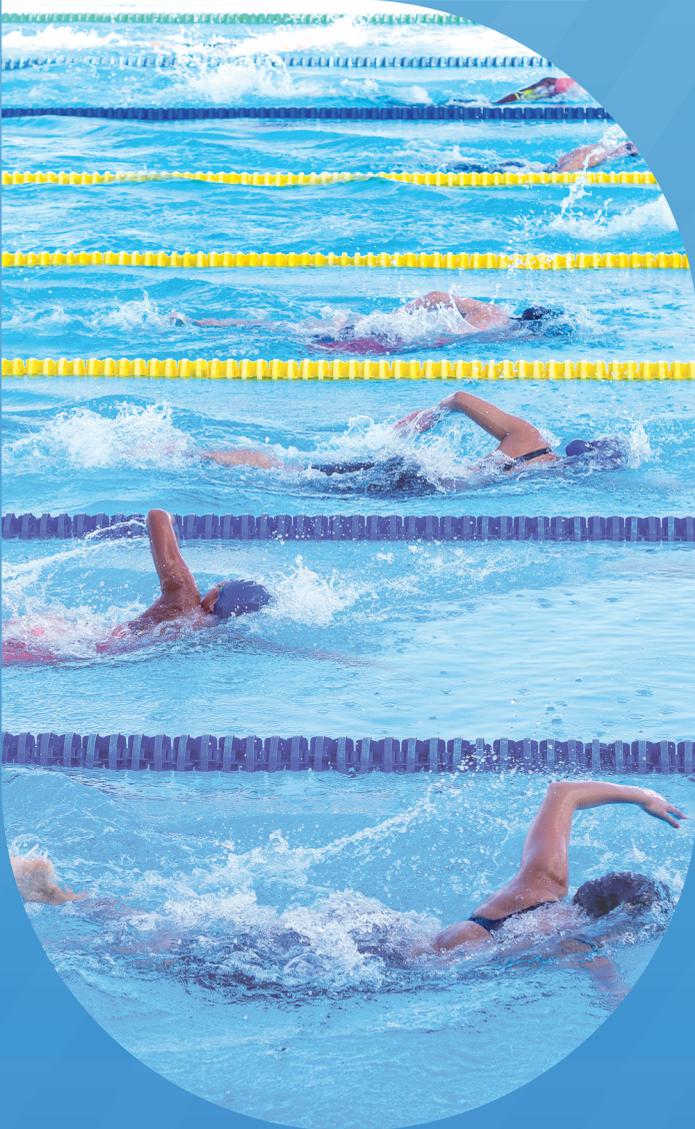


Kindergarten

# MATH NATION

BY ACCELERATE LEARNING

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*Accelerate*LEARNING  
THE LEADER in STEM EDUCATION



## What's Inside This Sample Lesson?

- A fully guided lesson written to meet rigorous state and national standards
- **Teacher Edition** pages, **Student Workbook** pages, and other **helpful resources** to fully experience a Math Nation lesson
- Warm-ups, exploration tasks, instructional routines, and teacher prompts
- Support for English learners and students with disabilities
- Integrated reflection, synthesis, and cool-down opportunities

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**Go Online!**

Explore the digital resources for this lesson.



# LESSON 15

## EXPRESSIONS AND DRAWINGS

**TEACHER-FACING LEARNING GOAL**

- Interpret expressions in relation to drawings.

**ALIGNMENT**

**Addressing**

K.CC.A.3    K.OA.A.1    K.OA.A.2

**LESSON PREPARATION**

**Instructional Routines**

Notice and Wonder (Warm-up)

**Materials To Gather**

Crayons: Activity 3

Materials from previous centers: Activity 3

Two-color counters: Activity 3

**Materials To Copy**

Shake and Spill Stage 3 Recording Sheet Kindergarten (groups of 1): Activity 3

**LESSON TIMELINE**

<b>Warm-up</b>	10 min
<b>Activity 1</b>	10 min
<b>Activity 2</b>	10 min
<b>Activity 3</b>	25 min
<b>Lesson Synthesis</b>	5 min
<b>Cool Down</b>	0 min

**TEACHER REFLECTION QUESTION**

Revisit the norms you established as a class about doing mathematics. Which norms are working, and which might need revision? Are there any norms you or your students might want to add?

 **LESSON INFORMATION**

**Student-Facing Learning Goal**

- Let's match expressions to drawings.

**Lesson Narrative**

The **objective** of this lesson is for students to connect expressions to drawings.

In previous lessons, students created drawings to represent story problems and connected drawings and expressions to story problems. In this lesson, students match expressions to drawings and create drawings and expressions. This lesson is moving students toward a more abstract understanding of expressions (MP2). In previous lessons, students had the context of a story problem and a clear action to help them relate to the expressions. In this lesson, students use their understanding of the plus and minus signs to determine whether to add or subtract.



## WARM-UP | NOTICE AND WONDER: SHAPES AND NUMBERS

10 minutes

### Instructional Routines

Notice and Wonder

The purpose of this warm-up is to elicit the idea that there can be a connection between drawings and expressions, which will be useful when students interpret the numbers and symbols in an expression in relation to drawings. While students may notice and wonder many things about the image and expression, the important discussion points are that there are 3 red counters and the number 3 and that there is 1 yellow counter and the number 1.

#### LAUNCH

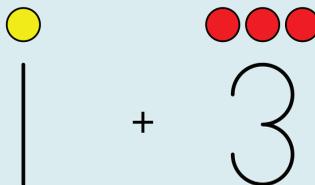
- Groups of 2
- Display the image.
- “What do you notice? What do you wonder?”
- 1 minute: quiet think time

#### ACTIVITY

- “Discuss your thinking with your partner.”
- 1 minute: partner discussion
- Share and record responses.

#### STUDENT-FACING TASK STATEMENT

What do you notice? What do you wonder?



#### POSSIBLE RESPONSES

- Students may notice:
- There is 1 yellow counter and the number 1.
  - There are 3 red counters and the number 3.
  - There are 4 counters and  $1 + 3$  is 4.
- Students may wonder:
- Why are there more red counters than yellow counters?

#### ACTIVITY SYNTHESIS

- “How many counters are there? How do you see them?” (4. I see 1 yellow counter and 3 red counters.)
- “In the next activity, we will match expressions to drawings.”



## EXPLORATION ACTIVITY 1 | MATCH DRAWINGS TO EXPRESSIONS

10 minutes

The purpose of this activity is for students to match drawings to expressions. Students use the structure of the dots to decide whether they represent an addition or subtraction expression and then identify that expression (MP2, MP7).

### Support for Students with Disabilities

*Action and Expression: Develop Expression and Communication.* Students may benefit from creating drawings of the expressions to help find the matching drawing. Invite students to use two-color counters to recreate the expression or draw a picture to show the expression.

*Supports accessibility for: Visual-Spatial Processing, Conceptual Processing*

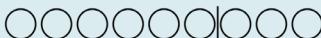
#### LAUNCH

- Groups of 2
- “Draw a line to match each drawing to an expression. Be prepared to share your thinking.”

#### ACTIVITY

- 4 minutes: independent work time
- “Share your matches with your partner.”
- 2 minutes: partner discussion

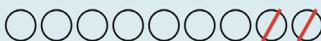
#### STUDENT-FACING TASK STATEMENT



$9 - 2$



$6 + 3$



$4 + 2$



$6 + 3$



$5 + 3$



$7 + 0$

#### POSSIBLE RESPONSES

- Students match:
- the first image to  $6 + 3$ .
  - the second image to  $7 + 0$ .
  - the third image to  $9 - 2$ .
  - the fourth image to  $5 + 3$ .
  - the fifth image to  $4 + 2$ .
  - the sixth image to  $6 - 3$ .

**ACTIVITY SYNTHESIS**

- Display the 9 circles with 2 crossed out:  

- “For the expression  $9 - 2$ , where do you see the 9 in the drawing? Where do you see the 2?” (There are 9 circles, and 2 circles are crossed out.)
- Display the 7 red counters:  

- “Which expression did you match to this drawing? Why?” ( $7 + 0$ , because 7 and 0 more is still 7.)
- “When we add 0, there are none added, so the drawing shows 7 and 0 more.”



**EXPLORATION ACTIVITY 2 | CREATE EXPRESSIONS AND DRAWINGS** 10 minutes

The purpose of this activity is for students to create a drawing when given an expression and to fill in expressions when given a drawing.

**Support for English Language Learners**

*MLR8 Discussion Supports.* Prior to solving the problems, invite students to make sense of the expressions and take turns sharing their understanding with their partner. Listen for and clarify any questions about the expressions or drawings.

*Advances: Reading, Representing*

**LAUNCH**

- Groups of 2
- Display student book.
- “What do you notice? What do you wonder?” (There are expressions and drawings. Some of the expressions are missing. Some of the drawings are missing. I wonder why one of the drawings has red and yellow.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share and record responses.
- “We noticed that there are some things missing. Work with your partner to fill in the missing expressions and drawings.”

**ACTIVITY**

- 5 minutes: partner work time

**STUDENT-FACING TASK STATEMENT**

Fill in the missing expressions and drawings.

$4 + 3$  

$4 - 0$  \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ 

$5 + 3$  \_\_\_\_\_

Fill in the missing expressions and drawings.

$8 - 2$  

\_\_\_\_\_ + \_\_\_\_\_ \_\_\_\_\_

$1 + 6$  

\_\_\_\_\_ - \_\_\_\_\_ \_\_\_\_\_

$8 - 2$  

\_\_\_\_\_ + \_\_\_\_\_ \_\_\_\_\_

$1 + 6$  

\_\_\_\_\_ - \_\_\_\_\_ \_\_\_\_\_

**POSSIBLE RESPONSES**

Students fill in the correct expressions and drawings.

**ACTIVITY SYNTHESIS**

- Display image from student book: 
- “What expression did you write to go with this drawing?” ( $6 - 3$ )
- “Where do you see the 3 circles that are crossed out in the expression?”
- “Where do you see all 6 circles in the expression?”

**ADVANCING STUDENT THINKING**

If students draw an image of addition for a subtraction expression or an image of subtraction for an addition expression, consider asking:

- “What do you know about this expression?”
- “Which part of the expression tells us whether to add or subtract? How can that help you figure out what to draw?”



## EXPLORATION ACTIVITY 3 | INTRODUCE SHAKE AND SPILL, REPRESENT

25 minutes

Materials To Gather	Materials To Copy	Required Preparation
Crayons, Materials from previous centers, Two-color counters	Shake and Spill Stage 3 Recording Sheet Kindergarten (groups of 1)	<ul style="list-style-type: none"> <li>Each group of 2 needs 10 two-color counters.</li> <li>Each group of 2 needs access to a yellow crayon and a red crayon.</li> <li>Gather materials from:                             <ul style="list-style-type: none"> <li>Number Race, Stage 1</li> <li>Math Stories, Stages 1 and 2</li> </ul> </li> </ul>

The purpose of this activity is for students to learn stage 3 of the Shake and Spill center. Students practice counting to find the total of 2 groups of objects and representing addition with an expression.

After they participate in the center, students choose from any stage of previously introduced centers.

- Number Race
- Math Stories

### LAUNCH

- Groups of 2
- Give each group of students two-color counters and red and yellow crayons. Give each student a recording sheet.
- “We are going to learn a new way to play Shake and Spill. One partner will choose some counters, shake them, and spill them. Then draw a picture to show the red and yellow counters. Work together to figure out how to fill in an expression to show how many red and yellow counters. Take turns shaking and spilling the counters.”

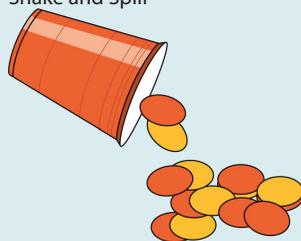
### ACTIVITY

- 8 minutes: partner work time
- “Now you can choose another center. You can also continue playing Shake and Spill.”
- Display the center choices in the student book.
- Invite students to work at the center of their choice.
- 10 minutes: center work time
- If time, invite students to choose another center.

### STUDENT-FACING TASK STATEMENT

Choose a center.

Shake and Spill



Number Race



**STUDENT-FACING TASK STATEMENT**  
*CONTINUED*

Math Stories

**ACTIVITY SYNTHESIS**

- Display  $4 + 3$ .
- “Andre and Tyler wrote  $4 + 3$ . What do you think their counters looked like?” (4 red counters and 3 yellow counters. 4 yellow counters and 3 red counters.)

**LESSON SYNTHESIS** 5 minutes

Draw 5 circles with 3 crossed out. Display  $5 - 3$ .



“Clare drew this picture to match the expression. She says that she can use the same drawing to match  $5 + 3$ . What do you think?” (She can’t use the same drawing. There are the same numbers but one is addition and one is subtraction.)

“What should Clare draw to show  $5 + 3$ ?” (She can draw 5 circles and 3 more circles.)

Draw the drawing or invite a student to draw the drawing.

**COOL DOWN | UNIT 4, SECTION C CHECKPOINT** 0 minutes

**STUDENT-FACING TASK STATEMENT**

There is no student-facing task. Use the Section C Checkpoint to make observations throughout the lesson to check for understanding.

**POSSIBLE RESPONSES**

- Explain how an expression connects to a drawing or story problem.
- Fill in an expression to represent a drawing.



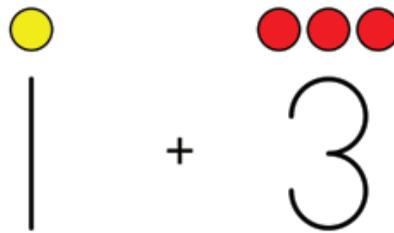
## Unit 4, Lesson 15: Expressions and Drawings



### Notice and Wonder: Shapes and Numbers

What do you notice?

What do you wonder?





### Match Drawings to Expressions



$9 - 2$



$6 - 3$



$4 + 2$



$6 + 3$



$5 + 3$



$7 + 0$



### Create Expressions and Drawings

Fill in the missing expressions and drawings.

$4 + 3$



$4 - 0$



$\underline{\quad} - \underline{\quad}$



$5 + 3$



Fill in the missing expressions and drawings.

$8 - 2$



$\underline{\quad} - \underline{\quad}$



$1 + 6$



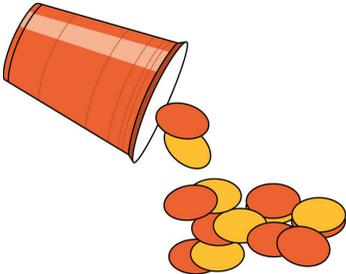
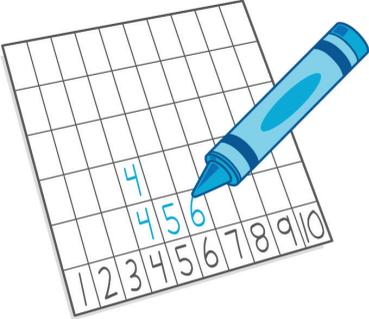
$\underline{\quad} - \underline{\quad}$





## Introduce Shake and Spill, Represent

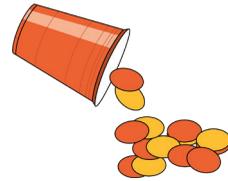
Choose a center.

Shake and Spill	Number Race
	
<h3>Math Stories</h3>	
	

Shake and Spill Stage 3 Recording Sheet Grade 1

Directions:

- Choose how many counters to put in the cup.
- Partner A: Shake and spill.
- Both partners: Determine how many red counters and how many yellow counters there are and write an equation to show the total.
- Switch roles and start the next round.



round	Write an equation to represent the red and yellow counters.
1	
2	
3	
4	
5	
6	
7	
8	

Shake and Spill Stage 3 Recording Sheet Kindergarten



Draw a picture.

Fill in the expression.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Draw a picture.

Fill in the expression.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

Draw a picture.

Fill in the expression.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}}$$

## Shake and Spill Stage 3 Recording Sheet Kindergarten

Draw a picture.

Fill in the expression.

$$\underline{\quad\quad\quad} + \underline{\quad\quad\quad}$$

Draw a picture.

Fill in the expression.

$$\underline{\quad\quad\quad} + \underline{\quad\quad\quad}$$

Draw a picture.

Fill in the expression.

$$\underline{\quad\quad\quad} + \underline{\quad\quad\quad}$$

2	7	9	1	8
3	4	10	5	6

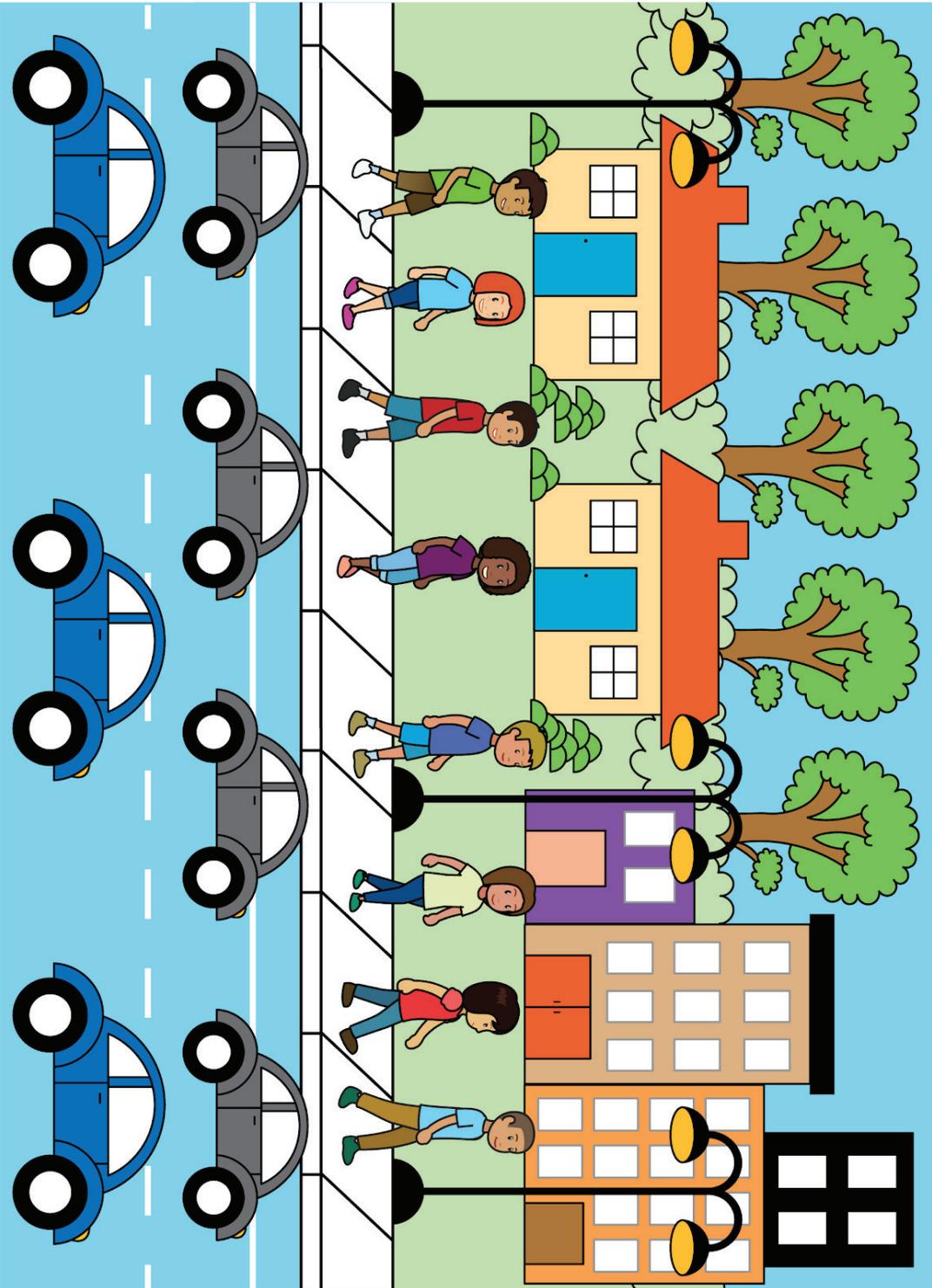
Number Race Stage 1 Recording Sheet for Tracing

1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10



Math Stories Stage 1 and 4 Pictures

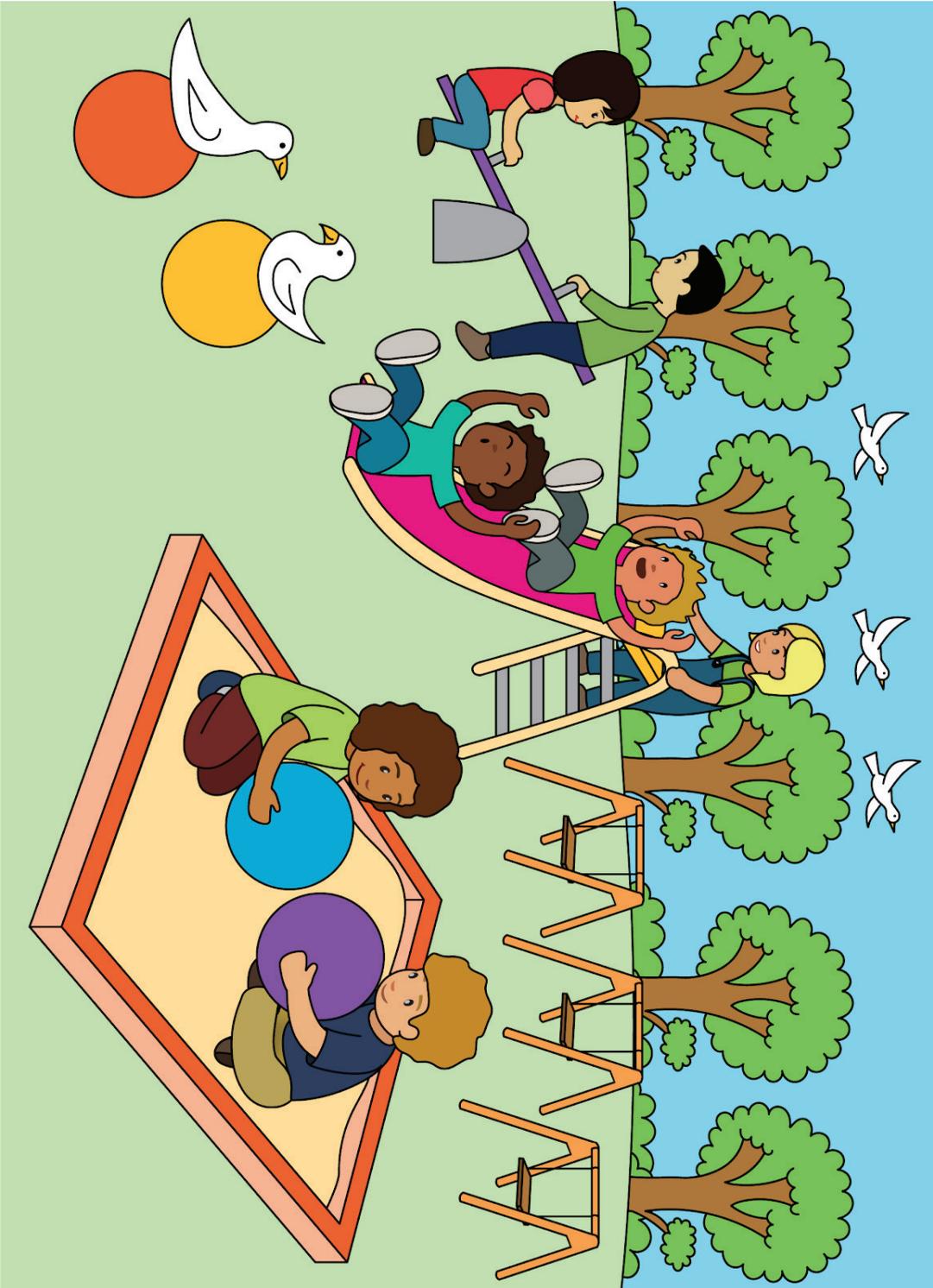
Picture A





Picture B

Math Stories Stage 1 and 4 Pictures



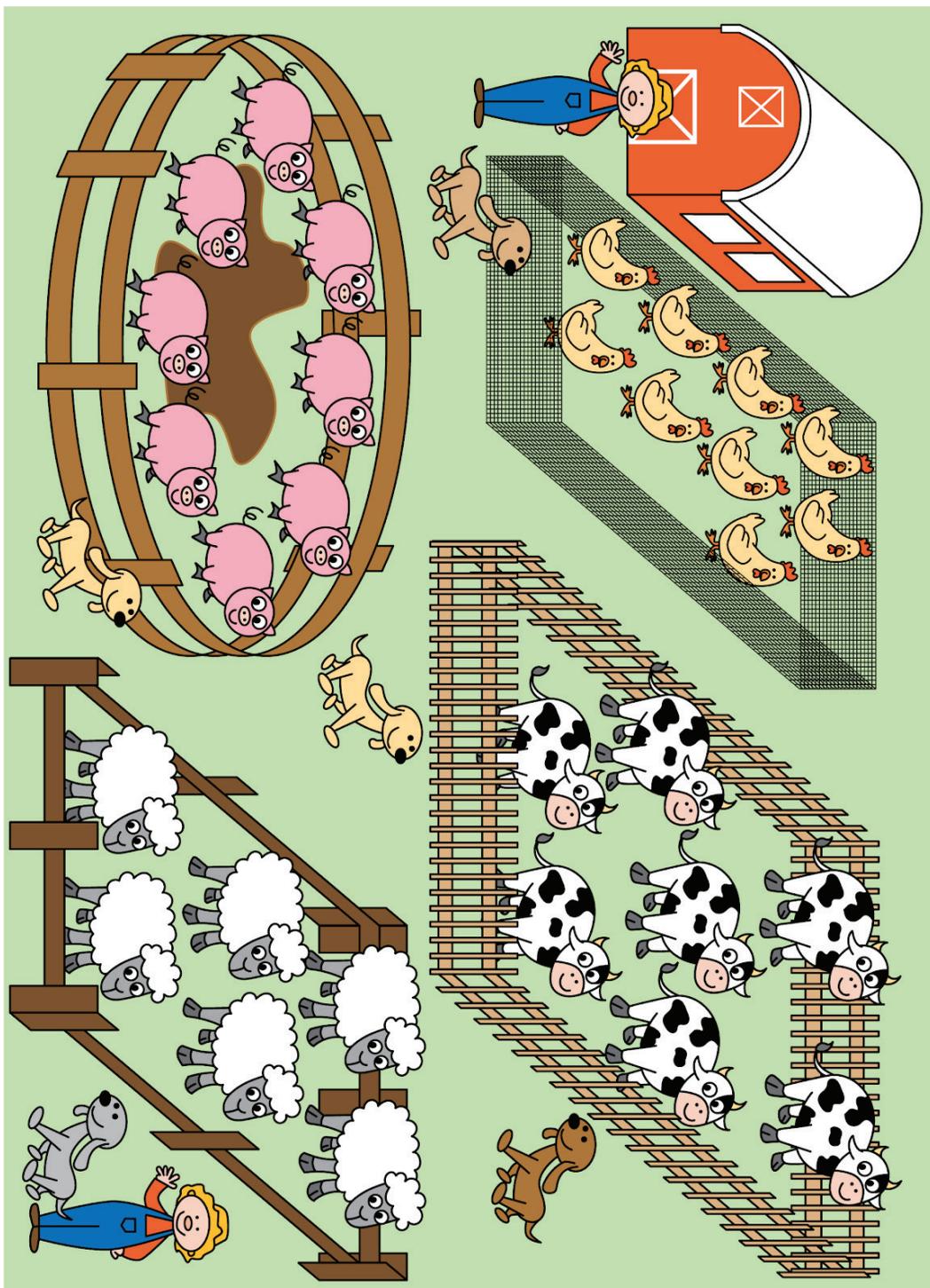
Picture C

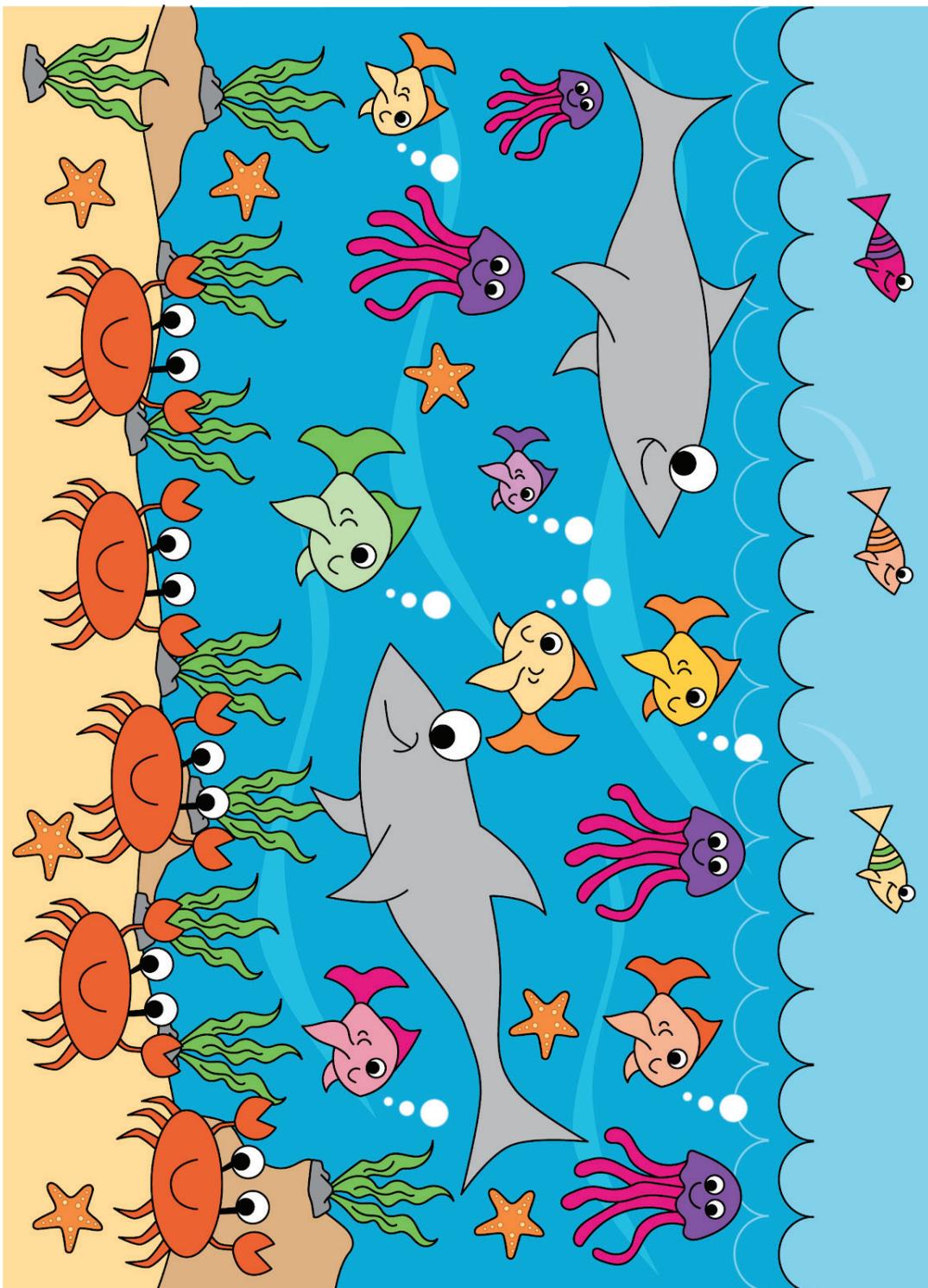


Picture D

Math Stories Stage 1 and 4 Pictures

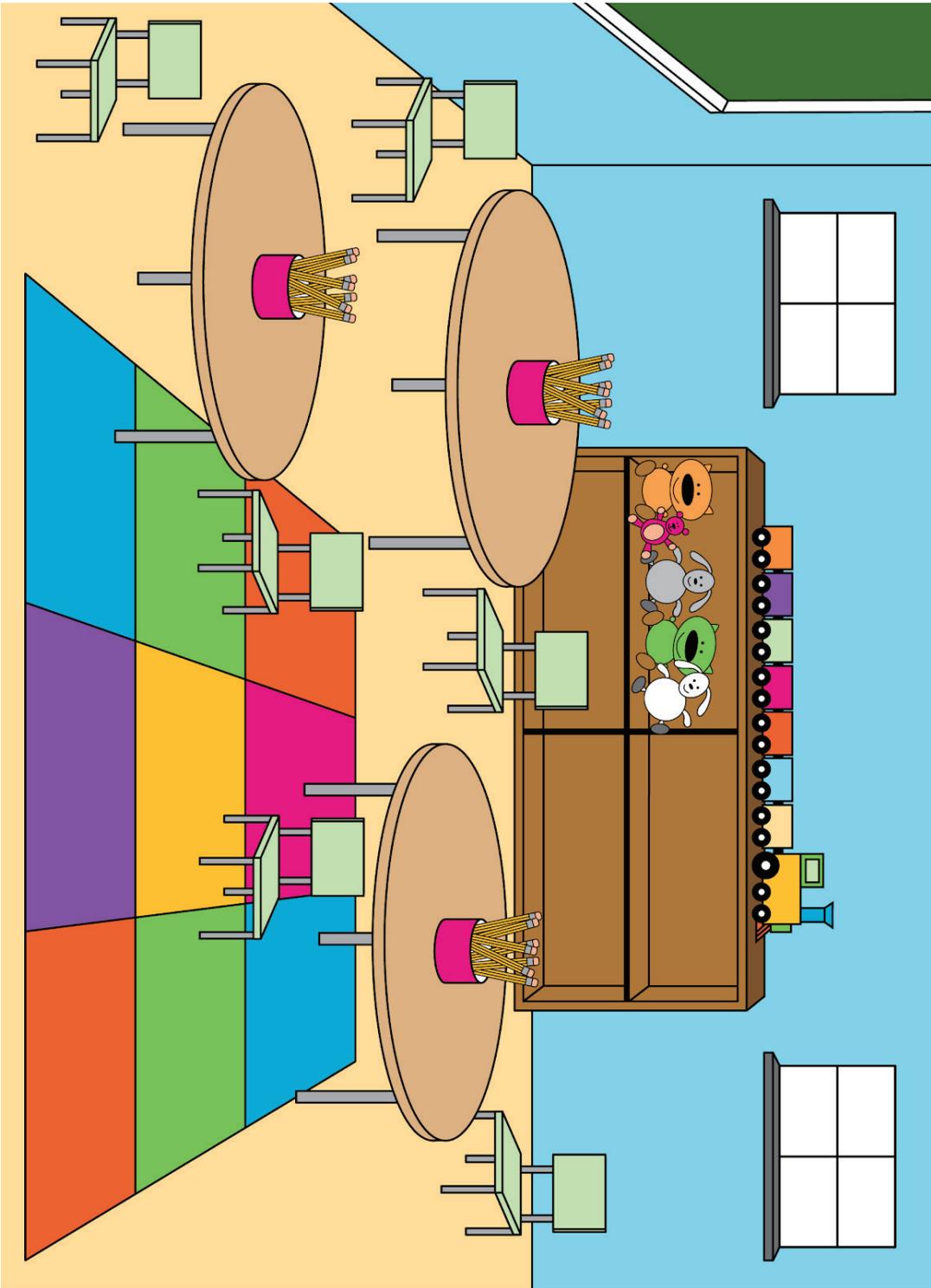
Picture E



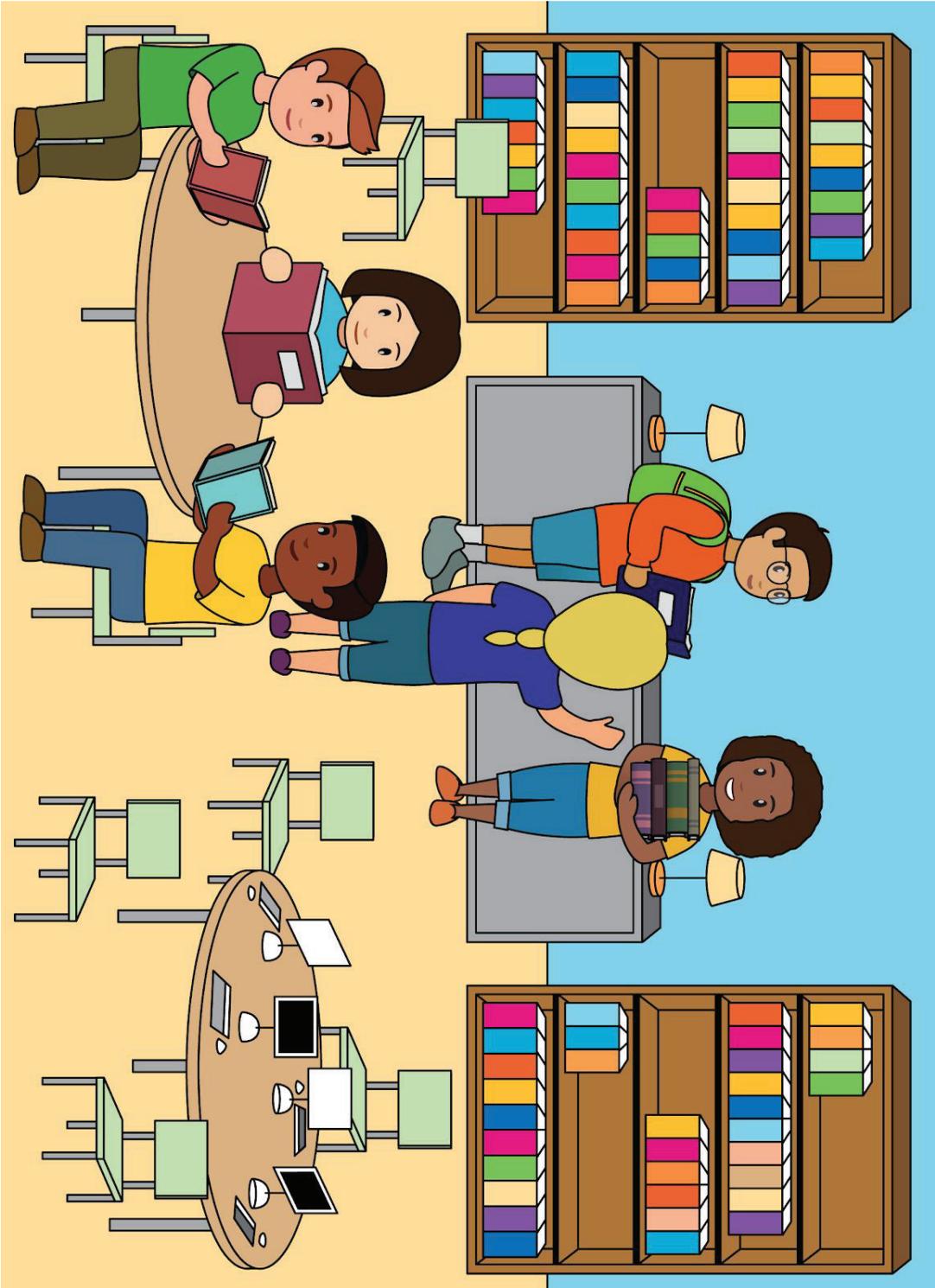


Picture F

Math Stories Stage 1 and 4 Pictures



Picture G



Picture H

Math Stories Stage 1 Recording Sheet

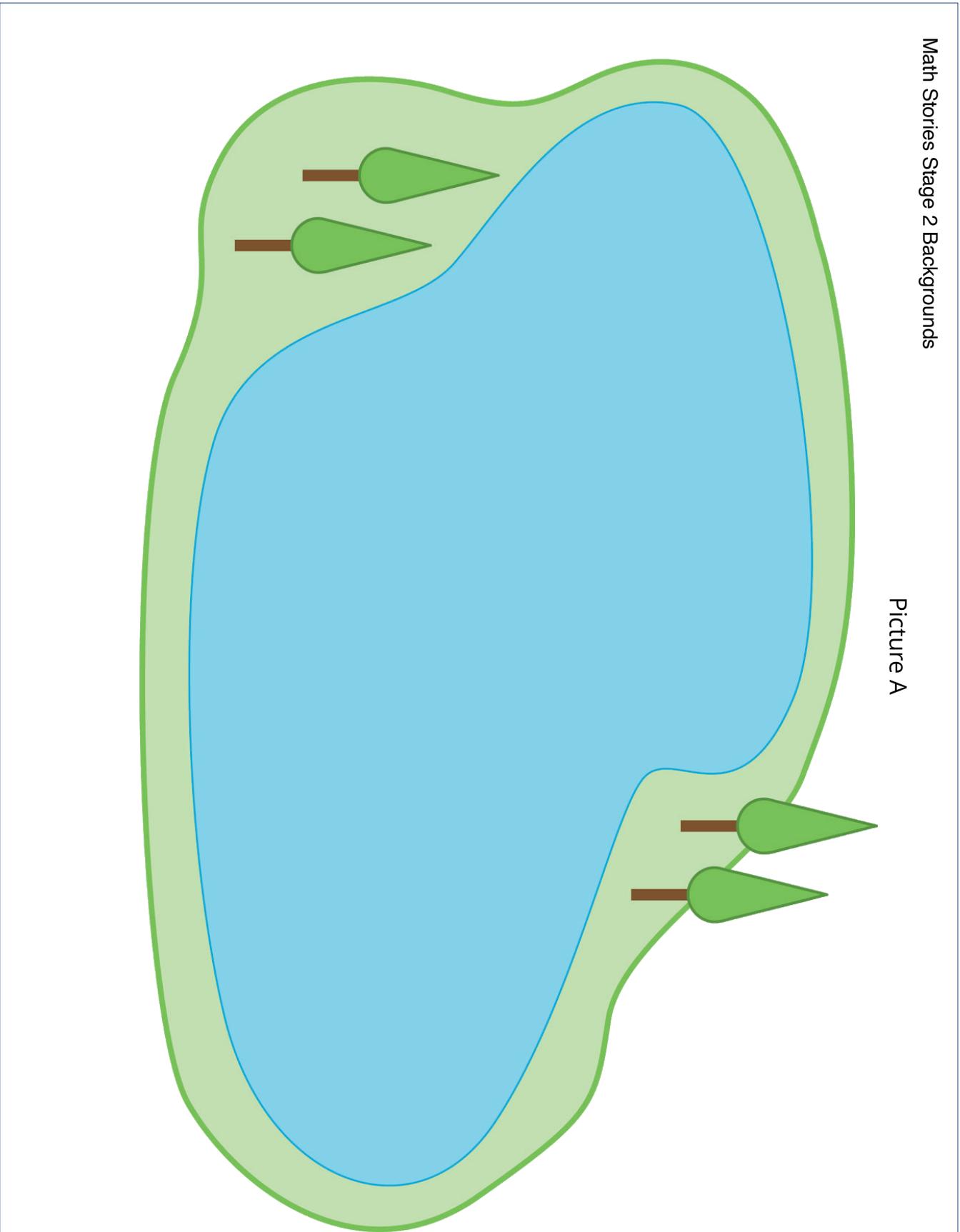
Blank writing area with a set of three horizontal lines (top solid, middle dashed, bottom solid) for recording.

Shaded writing area with a set of three horizontal lines (top solid, middle dashed, bottom solid) for recording.

Blank writing area with a set of three horizontal lines (top solid, middle dashed, bottom solid) for recording.

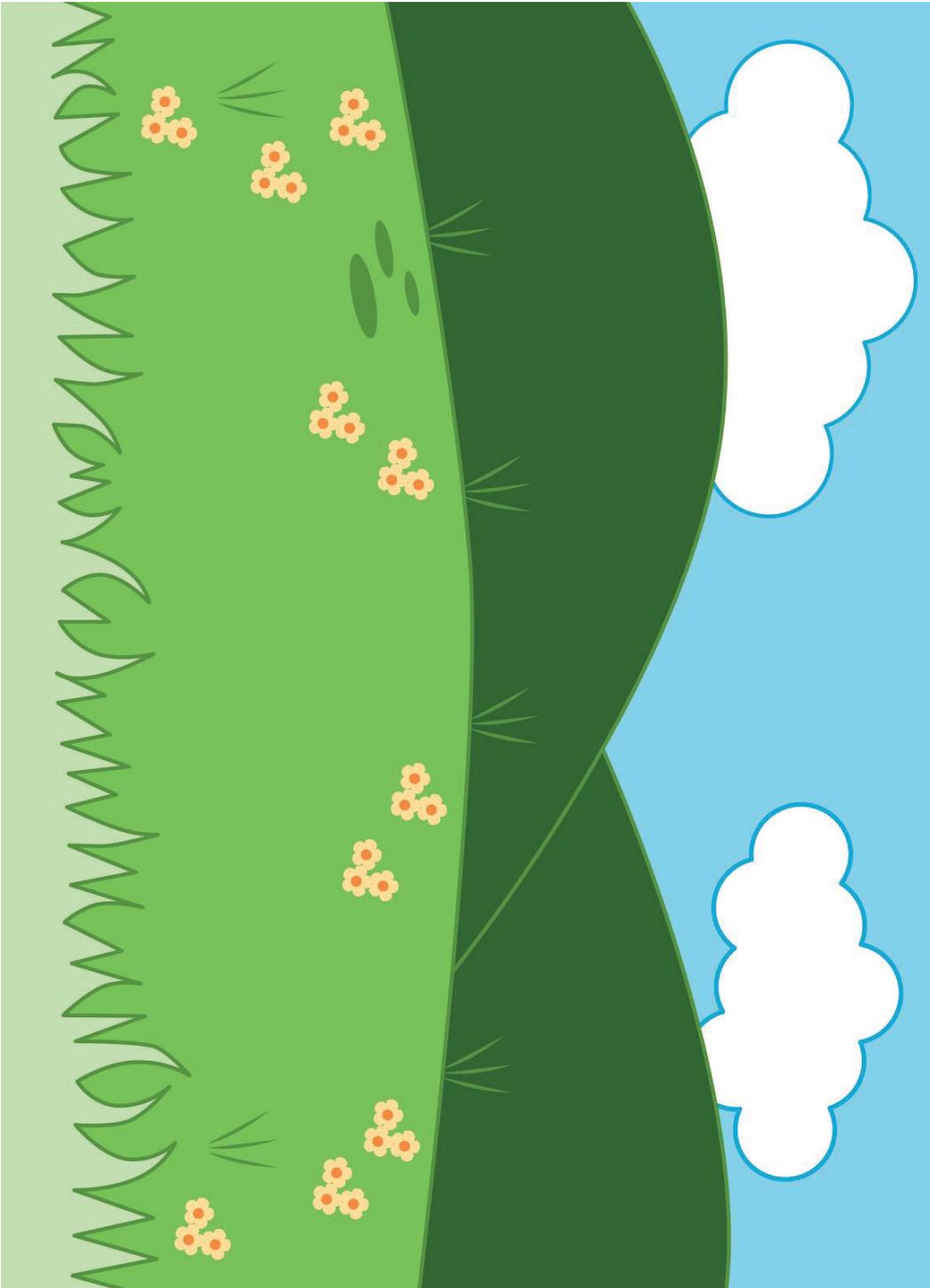
Shaded writing area with a set of three horizontal lines (top solid, middle dashed, bottom solid) for recording.

Picture A



Math Stories Stage 2 Backgrounds

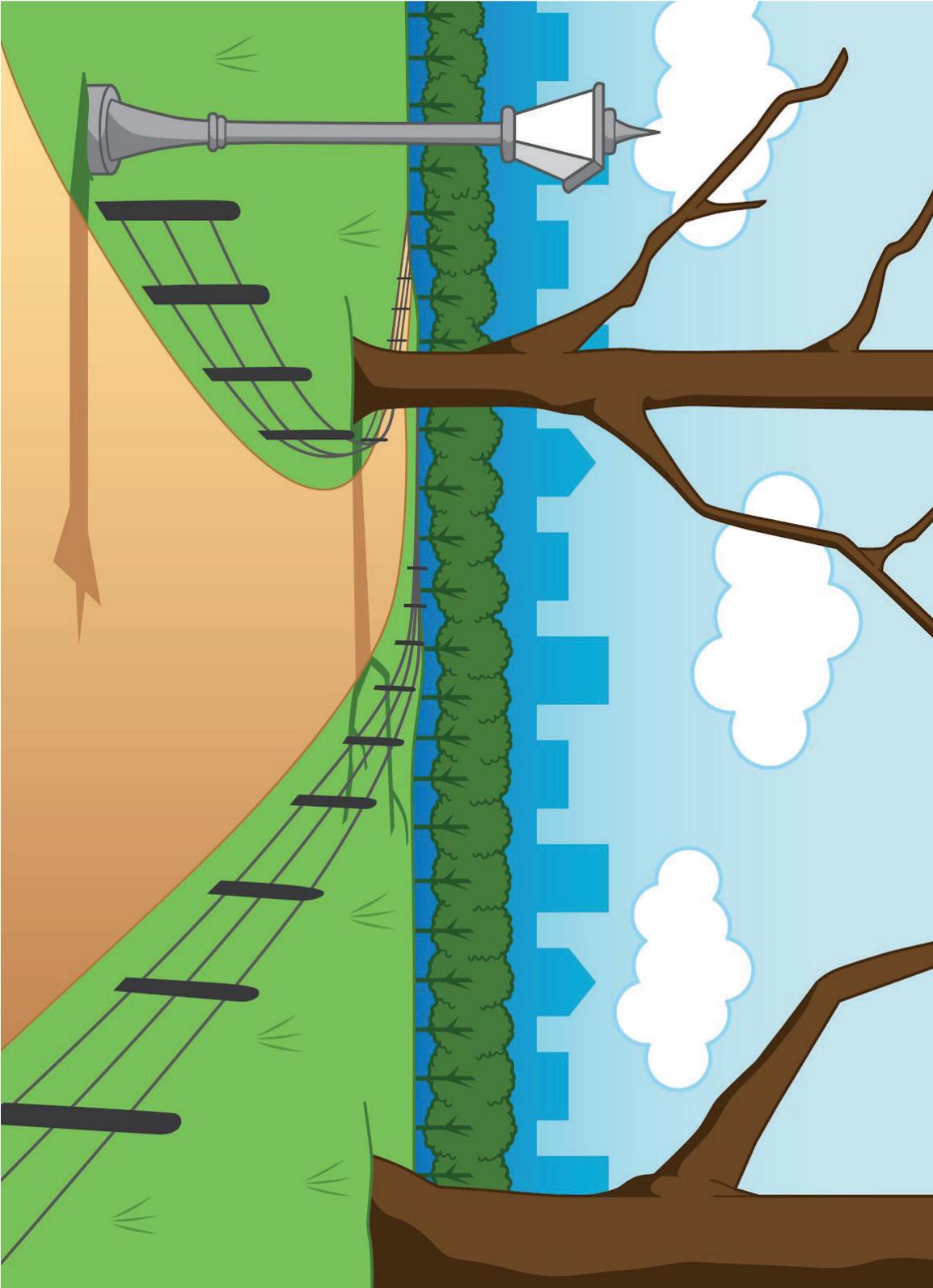
Picture B



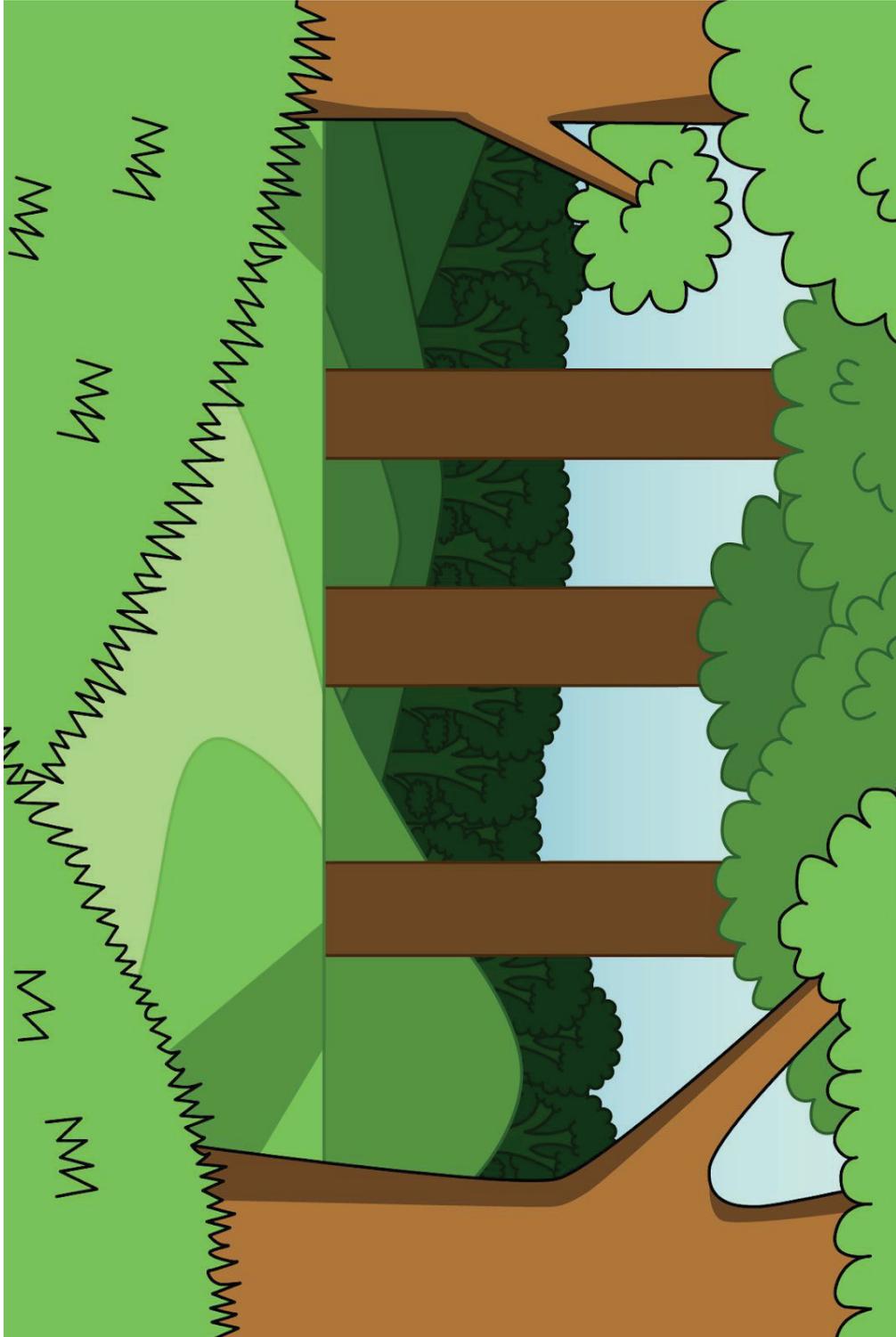


Math Stories Stage 2 Backgrounds

Picture D

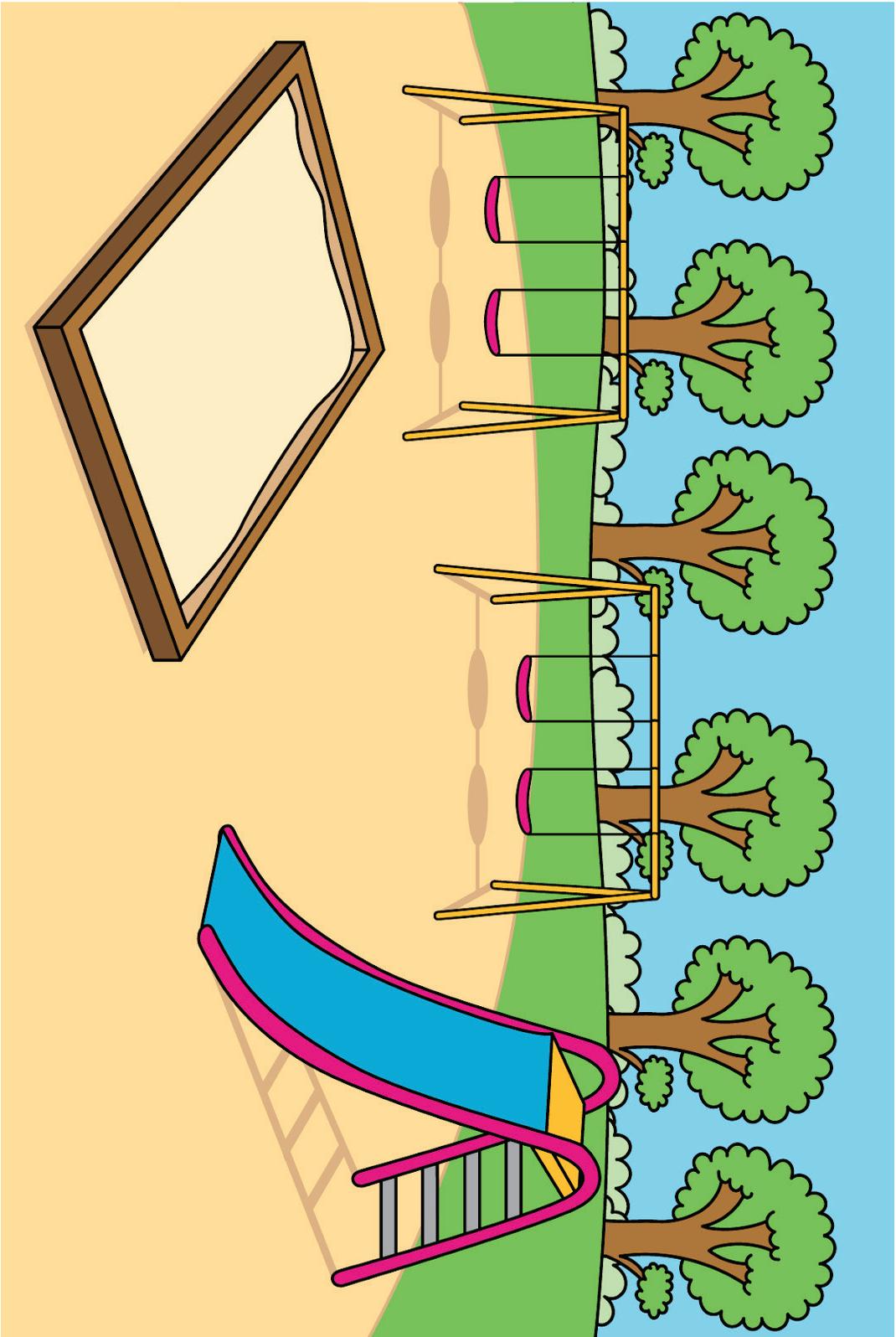


Picture E

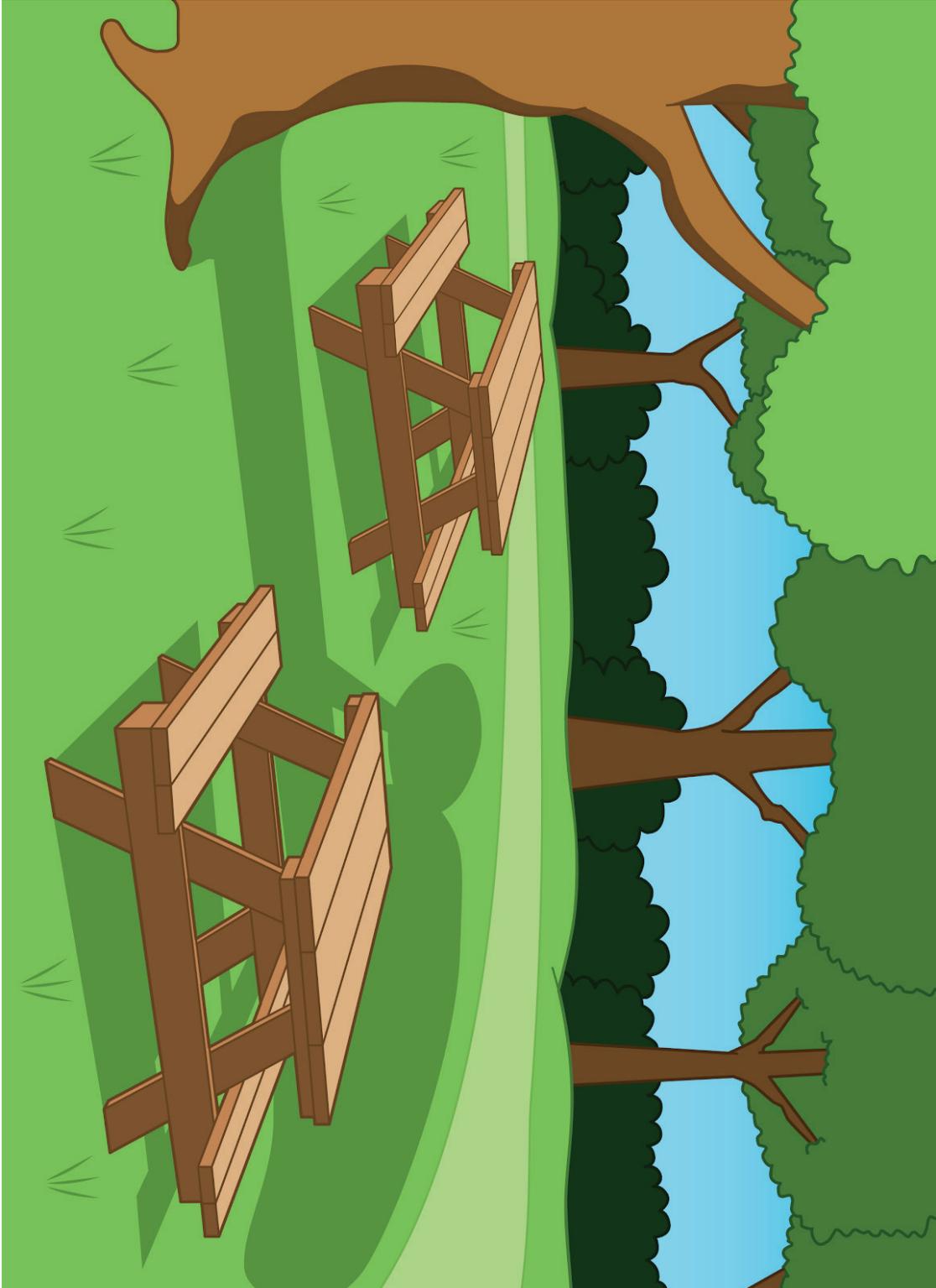


Math Stories Stage 2 Backgrounds

Picture F



Picture G

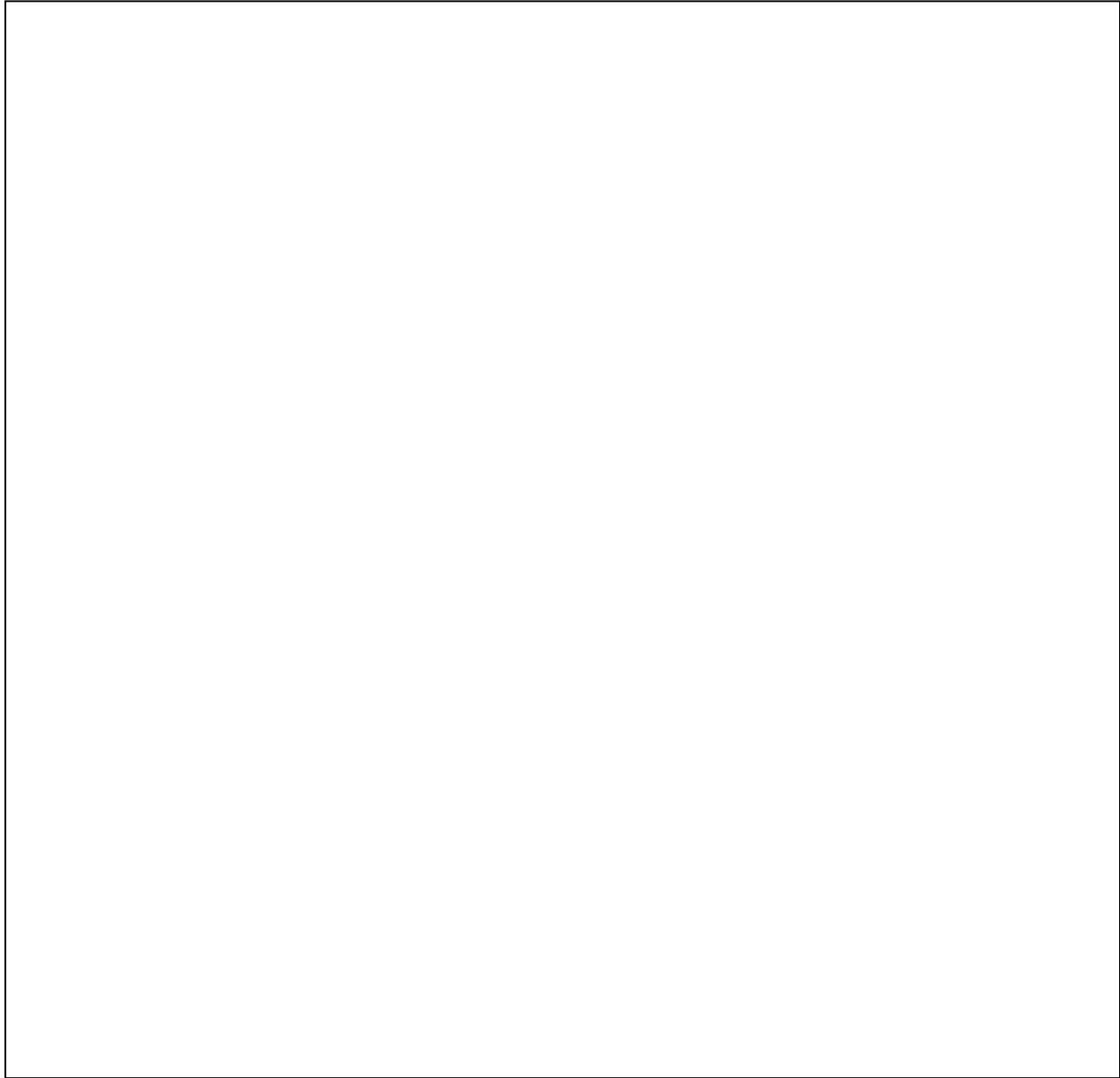


Math Stories Stage 2 Backgrounds

Picture H



Math Stories Stage 2 Recording Sheet



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**Ready to see the  
full program?**

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## Exploring this lesson with your students?

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