

Facilitation Guide



20 Min
Exploration



Digital Guide



Animal Addition Word Problems



ROUTINE OVERVIEW

In this 20 minute exploratory activity, students will act out “add-to” and “result unknown” animal-themed word problems to model and solve. Students will use the Read-Represent-Write routine to demonstrate their understanding and thinking.

Maryland Standards

MARYLAND STATE MATH STANDARDS

- **1.AT.A.2** – Add and subtract within 20 involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions (result unknown, change unknown, start unknown) by using objects, drawings, and/or equations with a symbol for the unknown number to represent the problem.

MARYLAND ARTS STANDARDS

- **DA.AS1.E:P-2:1** – Solve movement problems by responding to stimuli. (e.g. – nature, feeling.)
- **DA.AS7.E:P-2:1** – Communicate clearly and describe what is seen, heard, felt, and experienced when observing a dance.



Not in MD? View [National Standards](#) in the Digital Guide

Getting Ready ★ REVEAL MATH: 1st Grade: 7-1

ARTS INTEGRATED LEARNING OBJECTIVE: Students will use animal-inspired movement through gestures, voice, and facial expressions to act out addition word problems within 20. They will visualize quantities, represent two addends, and find the result unknown as they take on animal characteristics and movements.

MATH DOMAIN:

Algebraic Thinking
(AT)
Previously Operations
and Algebraic
Thinking (OA)

Represent and
solve problems
involving
addition and
subtraction.

Represent and solve
add-to problems
within 20

WHAT'S BEFORE: Add and subtract within 10 (Grade K)

WHAT'S NEXT: Solve word problems that vary across situations (Grade 2)

MATH SKILL: Represent and solve add-to, result unknown word problems within 20

ART SKILL: Use body, face, gestures, and voice to communicate and express character traits to solve movement problems.

MATERIALS

- [Slides](#)
- [Number Cards #0-10](#)
- [Number Line 0-20](#)
- [Animal Cards](#)
- [Double Tens Frames](#)
- Dry erase marker & surface
- Counters and/or cubes
- [“My Math Story Path”](#)
- [Worksheet](#)
- [Self Assessment](#)
- [Student story mats](#)

TEACH

Facilitation Steps

Introduction:

"Today we're going to use our bodies to become part of a math story! We are going to represent word problems by adding two parts to find an unknown result.

Ask: How can movement and imagination help us understand addition?

Student responses:

- "It helps us see what's happening in the story."
- "We can act out to solve the math problem."
- "It helps us picture the numbers."
- "We can use our bodies to show the groups getting bigger."

"Today we will be going on a Math zoo adventure! We will use our bodies, voices, and imaginations to act out different stories. We will then represent what we do with an equation"

Pose the problem:

Read together: 9 birds are on a fence. 8 more birds land on the fence. How many birds are on the fence?

Ask: How can you show this word problem?
"What do you know from the word problem?"

Represent: Invite two students to the "animal stage"

- Give one student a 9 number card.
- Give the other student an 8 number card.

"You are going to help us tell this story with your bodies." Since one student cannot physically become 9 birds, you'll want the student to represent the quantity of 9 rather than literally act as nine birds.

Invite students at their seats to record thinking using cubes and/or dry erase markers

Student 1 possible response: (9 Birds)

- Holds up the **9** number card and flaps their arms like a bird while standing in one spot to represent the first group of birds.
- Says, *"I'm the group of 9 birds already on the fence."*
- Makes gentle bird movements while pointing to the number **9** to show the quantity.
- Flaps their arms while taking 9 steps forward

Student 2 possible response: (8 Birds)

- Holds up the **8** number card and "flies" over by flapping their arms before standing next to Student 1.
- Says, *"I'm the 8 more birds landing on the fence."*
- Takes 8 steps while "flying" and joins the first student to represent the second addend.




SLIDES




**VIDEO
PLAYLIST**




MATERIALS
GOOGLE FOLDER

TEACH

Facilitation Steps

"What is the unknown?" "What do we need to do in order to find out how many birds land on the fence?" "How do you know what to add to solve this problem?"

Invite volunteers from the animal stage to record their thinking on a digital double tens frame for visual representation and/or use the linked digital cubes.

(interactive double tens frame and digit cubes found on attached slides).

Invite students to create an equation to show the word problem and to state the sum.

Develop the Math:

"We just used our bodies to become birds and show an add-to story. Now it's your turn to become the animals!"

Ask: What other animals might you see at the zoo?

Possible student answers: Elephant, Lions, Giraffe, Zebra, Kangaroo, Monkey

Teacher: **Take students on a journey using their imagination with the following animals**

"Great thinking! Every zoo animal moves in a different way. Before we begin, let's practice how each animal moves. Remember, our movements should be safe, controlled, and stay in our own space."

Practice Animal Movements

"Show me how a..."

- Giraffe walks..... slowly on tiptoes with a long neck reaching up to eat leaves.
- Monkey swings..... its arms and makes small jumps.
- The lion prowls.... quietly, then freezes like it's resting under a tree.
- Zebra gallops.... gently in place.
- Kangaroo.... makes small two-foot hops.
- Elephant.... takes slow, heavy stomps while swinging its trunk.

After each movement: **"Freeze!"**

"Excellent! You are ready to become zoo animals."

Explain the Partner Activity

Put students in pairs. "When I say 'Go,' each partnership will receive an animal card, story mat, and 2 number cards. You'll become the animals in your zoo story."

"First, you'll read the story together. Next, you'll represent the story by moving like your animal. Finally, you'll write the equation that matches what happened."

"Remember, we're not just pretending to be animals—we're using movement to help us understand the math."

****Teacher Notes-** Movement ideas and numberless problems included for students******

TEACH

Elephants:

Movement: Stomp slowly while swinging one arm like a trunk.

____ elephants are drinking water at a watering hole.
____ elephants stomp over to join them. How many elephants are at the watering hole now?

Lions:

Movement: Crawl quietly, then stand tall and give a gentle roar.

____ lions are resting under a shady tree. ____ lions walk over to join them. How many lions are resting together now?

Giraffes:

Movement: Walk slowly on tiptoes with long necks stretched high.

____ giraffes are eating leaves from a tall tree. ____ giraffes walk over to eat with them. How many giraffes are at the tree now?

Zebras:

Movement: Gallop lightly in place.

____ zebras are grazing in the grass. ____ zebras gallop over to join them. How many zebras are grazing now?

Kangaroo:

Movement: Big, bouncy hops

____ kangaroos are relaxing in their zoo habitat. ____ kangaroos hop over to join them. How many kangaroos are in the habitat now?

Monkeys:

Movement: Swing arms and make small jumps

____ monkeys are playing in a tree. ____ monkeys swing over to join them. How many monkeys are playing together now?

After providing time for students to work with partners, invite students in groups to the “animal stage” to present their problem. Pass out the attached worksheet for students to complete while following along on the given slides.



TEACH

Facilitation Steps

Bring It Back:

Use the following questions to discuss the overall activity-based exploration with your students. As students share out their responses, ask them to explain how they represented the problem with a model and equation.

What ways can you show a word problem?
How can you represent a word problem as an equation?

Questions that can be asked while students present:
What do you know from the problem?
What is the unknown?
How did you solve the given equation?

Key Takeaways

- One meaning of addition is adding to.
- An equation can represent an add-to situation.
- If the two addends are known, solving the equation gives the result.
- You can show addition word problems in different ways.
- You can add the two addends to find the unknown sum,
- An equation is one way to show the problem.

Move into student self-assessment.

Assessment & Reflection

Students can follow their "My Math Story Path." to assist in solving given word problems. This can be used in future lessons.

Students use a self assessment checklist to support their learning and measure their mastery of the given task: Student Self Assessment

Look fors:

- Clear communication of problem
- Numbers added together (students solve given problem)
- Equation presented (students write addition equation to match word problems)

Students demonstrate understanding through teacher informal observation and student self-assessment.



SELF-ASSESS

TEACH

Differentiation

K.OA.A.2 : Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

Accommodations:

- Strategic partner pairing and/or assign clear partner roles
- Adjust to only include number cards within 5
- Solve together using concrete objects, double tens frame, and/or number lines
- Encourage oral explanations with sentence stems: "First..." "Then..." "Now there are..."
- Allow seated movements (gestures) using only arms, hands, and/or facial expressions and sounds if needed

Extend:

- Increase numbers within 100
- Have students create their own zoo word problems or numberless problem
- Solve using various strategies and compare methods
- Change the story into a change unknown or start unknown problem