

# Area Divide

Grade 3

Division

4 levels

## Probing Questions

- How do you decide how long to make the hole in the grass?
- What will you see after you choose your answer?
- How can you prove your answer?

## What Concepts Are Being Developed?

The array model allows students to see the relationship between the dimensions and the total blocks, which builds an understanding of the inverse relationship of multiplication and division. Students may see division as a missing factor problem.

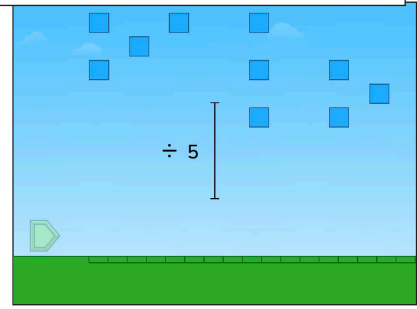
## Classroom Connection

Let students draw or build arrays. Discuss the division and multiplication expressions that match. Share how students interpret the problem.

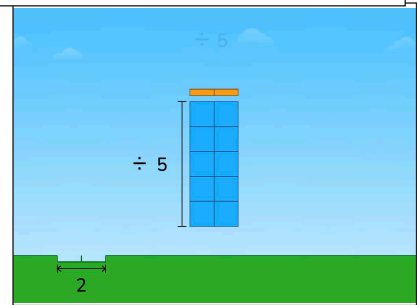
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Levels 1 and 2 show blocks as visual support.



The animation uses an array as a visual proof.



Division - 1



# How Many Creatures? LI

Grade 3

Division

4 levels

## Probing Questions

- How do you know how many animals to choose?
- How are you figuring it out?

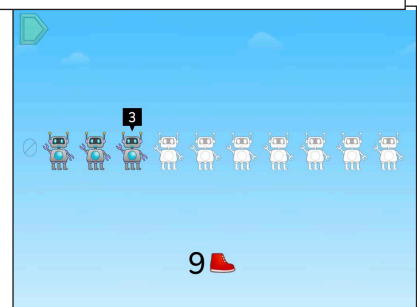
## Something to Think About

This game uses no division symbol and easy-to-work-with divisors of 2, 3, 5, and 10. This helps students focus on division as how many groups of \_\_\_ are needed to make \_\_\_\_.

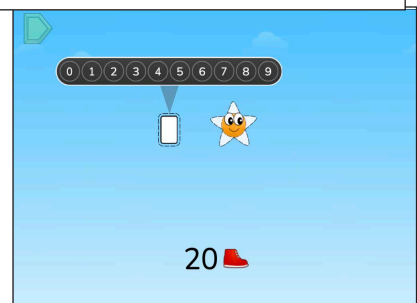
## Classroom Connection

Ask students to turn puzzles into word problems (this is harder than you would think). Students can create additional word problems and share them with each other.

Levels 1 and 2 offer more visual support.



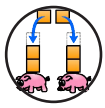
In levels 3 and 4 students can no longer count the objects on the screen.



Division - 2

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# Fair Sharing Expression

Grade 3

Division

3 levels

## Probing Questions

- How do you decide how many creatures to choose?
- What do you need to find out?
- How do you figure out how many each animal will get?

## Emphasize the Connection

In this partitive division model, ask students to explain how each number in the expression is represented with the visuals. Students can also turn the words in level 3 into numerical division expressions.

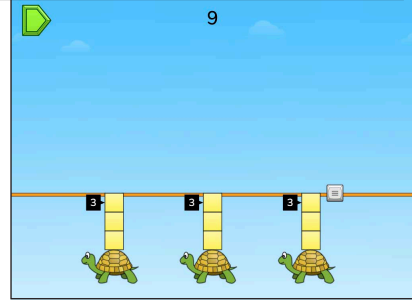
## Research is Clear

Partitive division is more easily understood by young students than quotative. It's important that students experience and solve both types of problems, but they don't need to know the names.

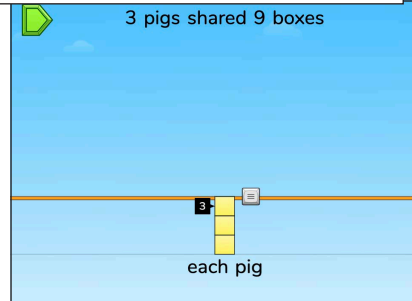
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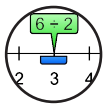
Level 1 shows the division visually as students choose their answers.



Level 3 puzzles use only words; the animation provides visual support.



Division - 3



# Number Line Division

Grade 3

Division

4 levels

## Probing Questions

- How do you read this problem?
- How can you figure it out?

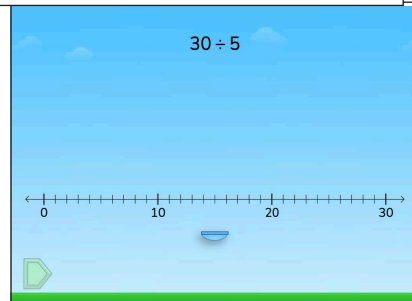
## Something to Think About

The animation shows a visual proof of the division. Some students may use skip counting to solve these puzzles. Ask students to compare the two different methods.

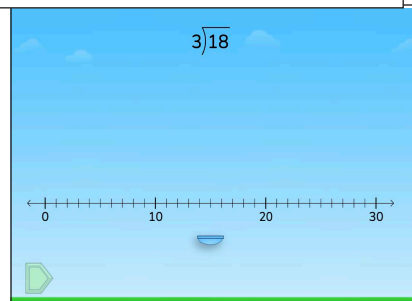
## What's Important Here?

As the last game in the objective, the puzzles include more symbols and the visual support is shown in the feedback.

Ask students to read the division expressions aloud.



Levels 3 and 4 mix different division symbols.



Division - 4

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