



# Bouncing Shoes

Kindergarten

Making 10 and Number Pairs

5 levels

## Probing Questions

- How do you figure which creature(s) you'll need?
- Is there another way to solve this puzzle?
- What do the light blue boxes mean?

## Classroom Connection

Project puzzles from Level 3 and ask students to share different solutions. Talk about the different combinations for specific numbers. Represent them using linking cubes and/or expressions. Discuss patterns.

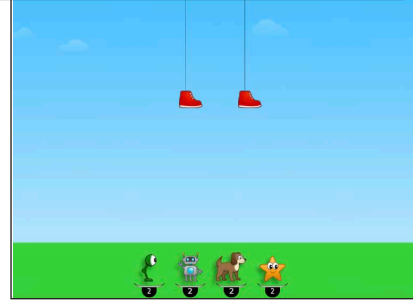
## What's Important Here?

It is critical that students find multiple representations of numbers. The reasoning involved forms the foundation for building basic facts, composing and decomposing numbers, compensation, and the inverse relationship of addition and subtraction.

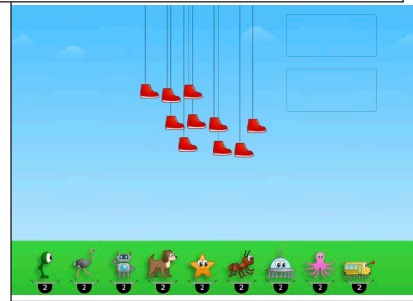
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Some puzzles have multiples of the same creature.



In later levels, students must find multiple solutions.



Making 10 and Number Pairs 1



# Bouncing Shoes to 10

Kindergarten

Making 10 and Number Pairs

4 levels

## Probing Questions

- How is this game different than the last game?
- What does the darker blue box do?
- How do you know which creature(s) to choose?
- How do you know that all of the shoes will be filled?

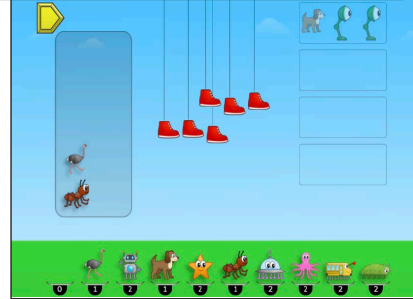
## Something to Think About

This game requires students use more spatial temporal reasoning as they must select all of the creature cards before the creatures fill the shoes.

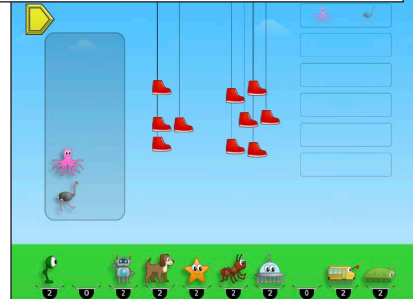
## Classroom Connection

Project a puzzle from level 1 or 4. Ask students to find all of the possible solutions. Show incorrect answers and ask students to share why they won't work. Represent the solutions with linking cubes or numerical expressions.

If students find their solution is incorrect, they can pull creatures down from the box on the left.



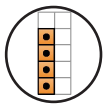
Duplicate solutions aren't allowed. If no other solutions are possible, reset the puzzle.



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Making 10 and Number Pairs 2



# Ten Frame

Kindergarten Making 10 and Number Pairs

4 levels

## Probing Questions

- How do you know how many to select?
- What do you notice about the way the frame fills in?
- How are you finding how many more you need?

## Something to Think About

The ten frame is always filled in by columns -- 5 first and then 10 -- so that the numbers can be recognized instantly without counting. This builds a foundation that allows students to use the ten frame to compose and decompose numbers visually which supports addition and subtraction strategies.

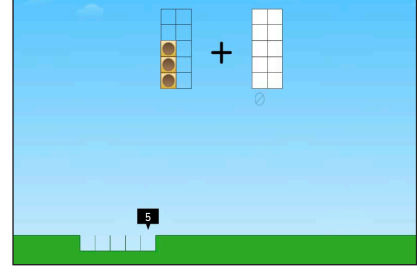
## What's Important Here?

In this game students learn the combinations for five and ten. The ten frame organization helps them see each number in relation to 5 and 10. Practicing these daily in class using ten frame cards will help all students build strong visual images of numbers.

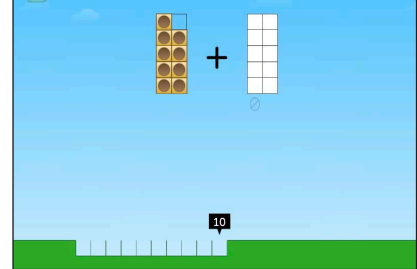
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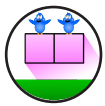
In levels 3 and 4 the numerals are connected to the quantities.



In levels 3 and 4 the visual numbers are translated to a beginning number line.



Making 10 and Number Pairs 3



# Bird Lift

Kindergarten Making 10 and Number Pairs

6 levels

## Probing Questions

- How many more birds do you need?
- How do you decide how many to choose?

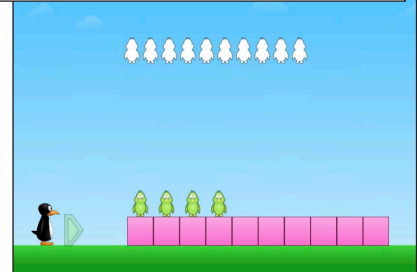
## What Concepts are Being Developed

How many more are needed is a difficult concept. Rather than just counting the empty blocks, have students answer the question, "How many more birds are needed?" Take note of the counting strategies being used by students: Do they count all? Do they count on?

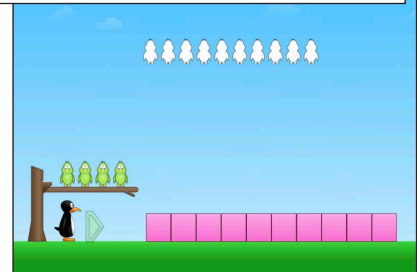
## What Do the Standards Say?

*For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. (K.OA.A.4)*

Levels 3, 5, and 6 work on combinations of 10.



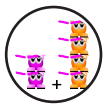
Levels 4-6 require more abstraction.



Making 10 and Number Pairs 4

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# Critter Addition

Kindergarten Making 10 and Number Pairs

5 levels

## Probing Questions

- How can you find how many to choose?
- What do the 5 dots next to the column of critters mean?
- What do you have to do different if the answer is already given?

## Supporting Struggling Students

Linking cubes can be helpful on levels 2-5 if students are struggling. Comparing the two towers will also reinforce the concept of how many more, a useful strategy that builds to counting on and finding the difference.

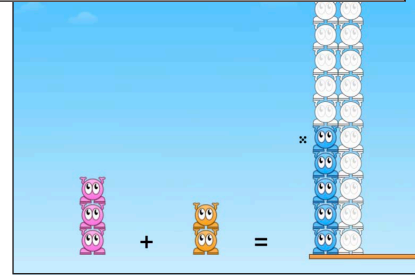
## What's Important Here?

Finding a missing addend can be challenging but is part of the foundation needed for seeing the inverse relationship of addition and subtraction. Discuss with students to see what reasoning and counting strategies they are using.

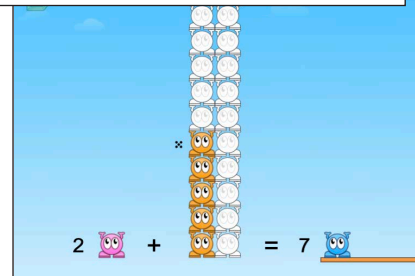
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Find out if students are counting on or just counting all the critters.



Ask students to identify what they think the 5 dots are when there are 10 or more creatures.



Making 10 and Number Pairs 5



# Bouncing Shoes with Numbers

Kindergarten Making 10 and Number Pairs

6 levels

## Probing Questions

- How do you know which creatures to choose?
- What happens after you select a creature?
- What do the blue squares/rectangles mean?
- How do you know how many shoes you need?

## Classroom Connection

This game presents visual word problems. Project some puzzles from levels 1-3 and ask students to create word problems to match the visuals in the puzzles.

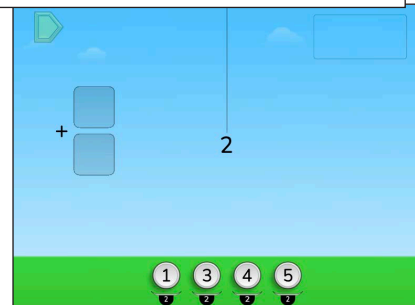
## What Do the Standards Say?

*Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g.,  $5 = 2 + 3$  and  $5 = 4 + 1$ ). (K.OA.A.3)*

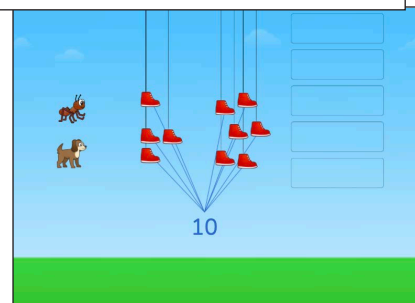
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The visual support gradually transition to numerals.



The animation provides a visual proof.



Making 10 and Number Pairs 6



# Partners

Kindergarten Making 10 and Number Pairs

6 levels

## Probing Questions

- How do you know which numbers to choose?
- What other choices can you make?
- How many different ways can you make this number?

## Supporting Struggling Students

Provide cubes for students who still rely on counting. Help them move to more efficient strategies such as counting on.

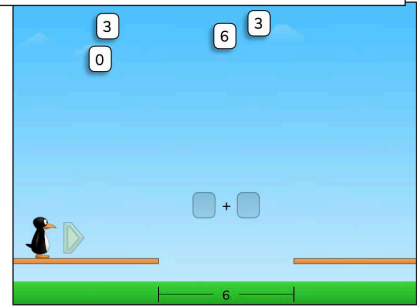
## Classroom Connection

Write out the combinations for the larger numbers. Ask students how they know they have found them all and to look for patterns in the expressions. This game lends itself to part-part-whole discussions using bar models and allows for connections to number bond cards.

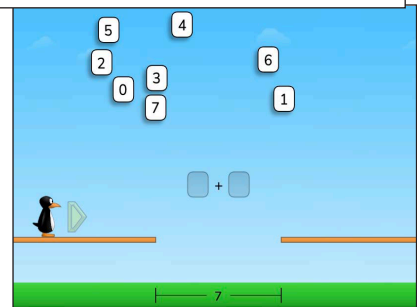
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There is little support for students who rely on counting.



Zero is included in this game.



Making 10 and Number Pairs 7