



# Push Box Addition

Grade 1

Addition and Subtraction Within 10

3 levels

## Probing Questions

- What do you see in this puzzle?
- What do you think you need to do to help JiJi cross?
- Where can you click?

## Stop the Animation

Stop the animation when the blocks are going up the ramp or being pushed up and ask students to describe the action.

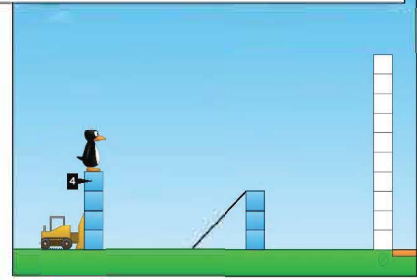
## Classroom Connection

After students solve the puzzle, redo the puzzle and have them write the matching equation.

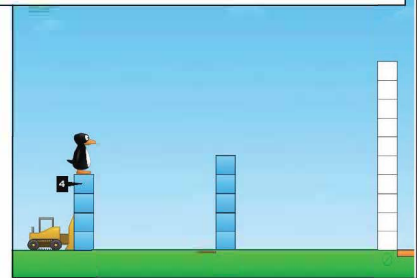
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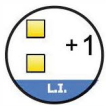
In Levels 1 and 2 JiJi starts on a greater number of blocks and adds a smaller number of blocks.



In Level 3 JiJi starts on a smaller number of blocks and adds a greater number of blocks.



Addition and Subtraction Within 10 - 1



# Select Box Addition Symbolic

Grade 1

Addition and Subtraction Within 10

3 levels

## Probing Questions

- How do you help JiJi cross?
- Where can you click?

## The Bigger Picture

Representing the sum by the holes in the ground will, in later games, turn into showing adding on a number line. Number lines are a very important tool that will continue to be used all the way through calculus -- and it starts here.

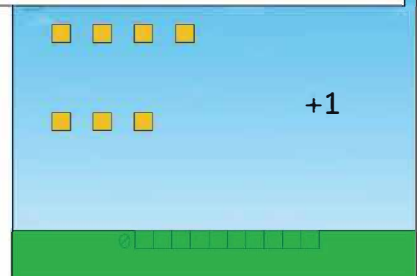
## Classroom Connection

Ask students to tell the story of the expression and what happens in the puzzle. Help students learn to use mathematical vocabulary correctly (e.g., expression, sum, equals, plus, addends)

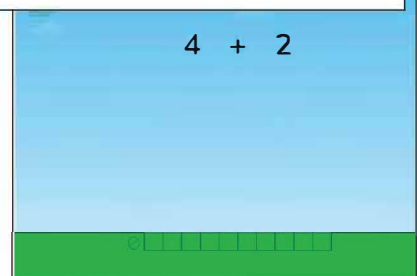
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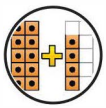
Level 1 shows blocks for the first addend and a numeral for the second addend.



Levels 2 and 3 show an expression with two numerals.



Addition and Subtraction Within 10 - 2



# Ten Frame Addition

Grade 1

Addition and Subtraction Within 10

5 levels

## Probing Questions

- What do you need to do to solve this puzzle?
- How can you make the problem easier by using the ten-frame?

## Stop the Animation

Pausing several times during the animation allows you to discuss how the numbers are being represented in the ten frame and how they are combined.

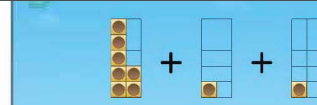
## Research is Clear

Changing the orientation and filling approach when using ten frames helps students develop a stronger number sense and think more flexibly.

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Levels 1 and 2 have 2 addends. Levels 3 and 4 have 3 or 4 addends.



Level 5 shows expressions with numerals.

$$7 + 1 + 1 + 1$$

Addition and Subtraction Within 10 - 3



# Push Box Subtraction

Grade 1

Addition and Subtraction Within 10

4 levels

## Probing Questions

- What does the hole in the ground represent?
- What does the ramp represent?
- How can you help JiJi cross?

## What Do the Standards Say?

Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. CCSS.Math.Content.1.OA.A.1

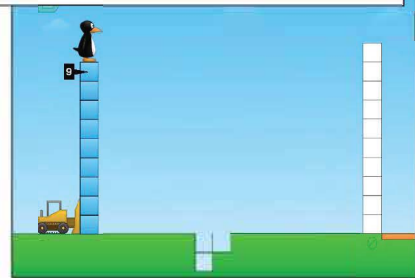
## Classroom Connection

Project puzzles on a white board and have students discuss how they determine whether to add or subtract and why.

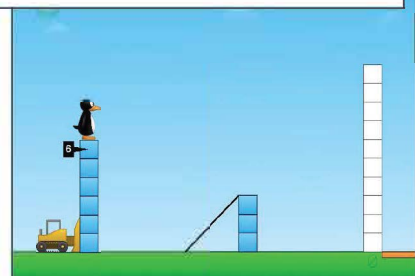
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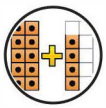
Levels 1, 2, and 3 consist of only subtraction problems.



Level 4 includes both addition and subtraction problems.



Addition and Subtraction Within 10 - 4



# Ten Frame Addition

Grade 1

Addition and Subtraction Within 10

5 levels

## Probing Questions

- What do you need to do to solve this puzzle?
- How can you make the problem easier by using the ten-frame?

## Stop the Animation

Pausing several times during the animation allows you to discuss how the numbers are being represented in the ten frame and how they are combined.

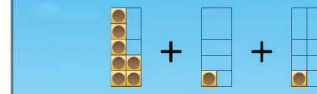
## Research is Clear

Changing the orientation and filling approach when using ten frames helps students develop a stronger number sense and think more flexibly.

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Levels 1 and 2 have 2 addends. Levels 3 and 4 have 3 or 4 addends.

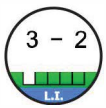


Level 5 shows expressions with numerals.

$$7 + 1 + 1 + 1$$



Addition and Subtraction Within 10 - 5



# Basic Fact Subtraction Symbolic

Grade 1

Addition and Subtraction Within 10

5 levels

## Probing Questions

- What do the blue and red blocks represent in the puzzle?
- What happens to the numbers when you solve the puzzle?

## Emphasize the Connection

Ask students to represent the subtraction expression on ten frames. Encourage them to use mathematical language to describe what they're doing.

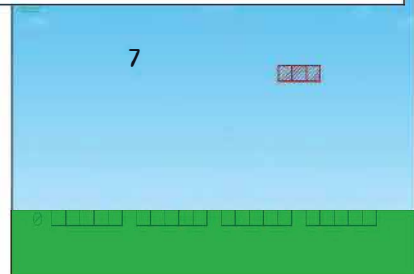
## Classroom Connection

Ask students to create a number line and show how the puzzle would be represented on the number line.

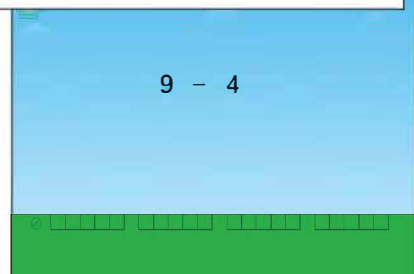
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In Levels 1 and 2, the minuend is represented by a numeral but is still shown visually when students choose an answer.



Levels 3-5 show both the minuend and subtrahend are represented as numerals.



Addition and Subtraction Within 10 - 7



# Pie Monster Symbolic

Grade 1

Addition and Subtraction Within 10

6 levels

## Probing Questions

- What do the numbers represent?
- How do you get rid of the boxes in JiJi's path?

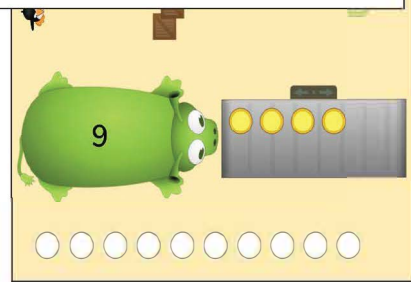
## What Strategies Are Being Used?

Have students share their strategies. Are they counting on? Are they subtracting? Is one strategy "better" than the other?

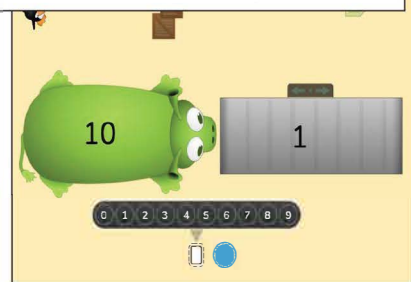
## Classroom Connection

Have students create word problems for what's going on in the puzzles. Encourage students to see the situations as addition as well as subtraction.

In Levels 1 and 2, the minuend is represented by a numeral while the pies are still represented visually.



In later levels, the minuend, subtrahend and difference are all represented by numerals.



Addition and Subtraction Within 10 - 8