



Number Line Journey

Grade 2

The Number Line

6 levels

Probing Questions

- How do you know which way to move on the number line?
- What do the arrows at the top mean?

What Do the Standards Say?

Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram. CCSS. Math.Content.MD.6

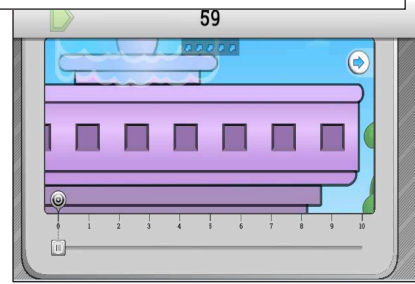
Uncover the Thinking

Determine how students are deciding whether to move left or right on the number line. Are they comparing tens or just matching the numbers? Use questioning to facilitate the development of more efficient strategies.

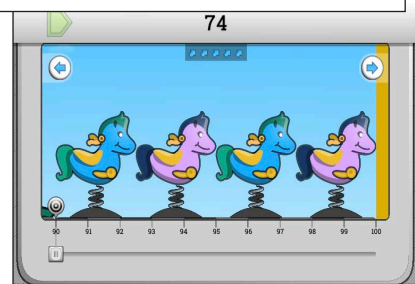
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In Levels 1-3, the number line always starts at zero and there is only one arrow.



The arrows in the middle indicate how many moves can be made to find the number.



The Number Line - 1



Number Line Trap

Grade 2

The Number Line

2 levels

Probing Questions

- What do the ticks between the numbers on the number line mean?
- How do you know where to place the glue if the number is not showing on the number line?

What Do the Standards Say?

Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram. CCSS. Math.Content.2.MD.6

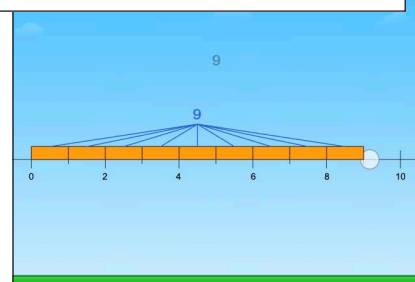
The Bigger Picture

Understanding number lines will help students in future work with fractions, decimals, linear equations as well as build strong number sense.

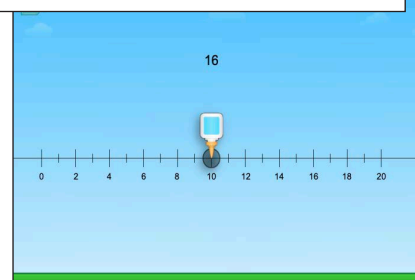
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The animation supports the importance of starting at zero.



Level 1 goes to 10 and Level 2 goes to 20.



The Number Line - 2



Number Line Journey Zoom

Grade 2

The Number Line

3 levels

Probing Questions

- What do you need to do if the number at the top doesn't show up on the number line?
- What does the magnifying glass do?
- How do you know whether to select the target or the magnifying glass?

What Concepts are Being Developed?

The animation provides a visual proof supporting the strategy of looking at the tens place first and then finding the ones place within the correct decade.

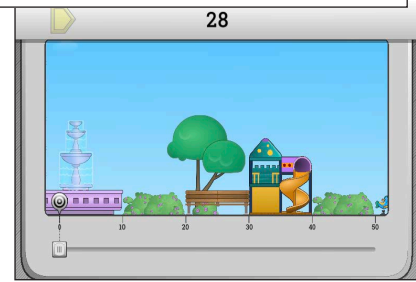
Emphasize the Connection

This strategy isn't found only in math. When looking up a word in the dictionary, you look in the section that has the first letter and then continue the strategy. In science, animals are identified by increasingly specific Latin names.

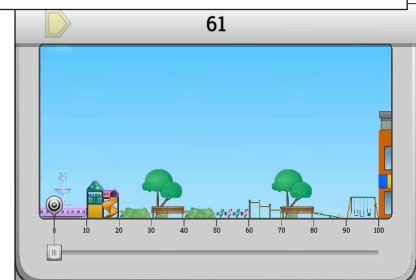
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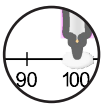
The range of the number line increases in each level.



Use the scrub bar to slow down the animation showing the expanding number line.



The Number Line - 3



Number Line to 100

Grade 2

The Number Line

5 levels

Probing Questions

- What moves on the screen? Where do you need to click?
- How can you use the numbers that are shown to help you know where to place the glue?

Supporting Struggling Students

Help students who are struggling to break the problems down into smaller steps. Have them identify the tens place and where that number might be on the number line: Closer to 0? Closer to the middle? Closer to the end?

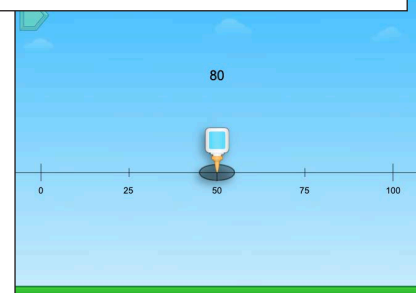
What's Important Here?

Students who have a strong number sense will be better estimators. For example, they'll know that $93 + 82$ will be closer to 200 than 100 which is an essential skill that research says many students do not have.

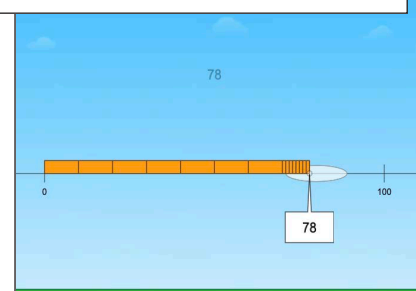
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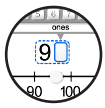
Level 2 shows ticks at 0, 25, 50, 75, and 100.



The animation in Levels 3-5 shows the number as tens and ones.



The Number Line - 4



Number Line to 100 Bubble Select

Grade 2

The Number Line

5 levels

Probing Questions

- How are you deciding what number to enter?
- How are you using the feedback if your answer is incorrect?
- What do the black dots mean?

Classroom Connection

Using this game with the entire class will allow students to share strategies for selecting their first guess and then using the feedback to make another estimate. Challenge students to use as few guesses as possible.

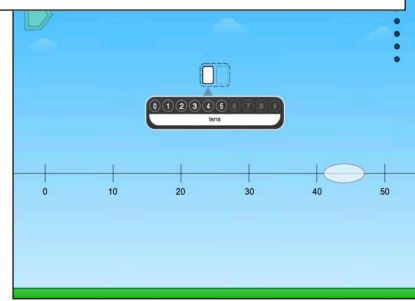
Uncover the Thinking

Discuss with students how an incorrect answer affects their next guess. For example, was their guess too high? too low? How do they know? What is a reasonable next guess?

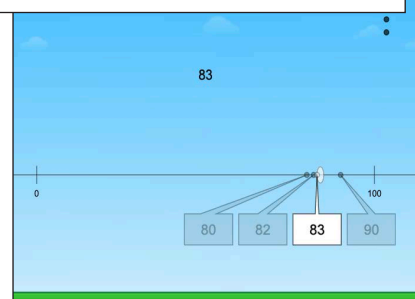
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These puzzles require students to read a number line.



Students have multiple chances to guess the number.



The Number Line - 5