

JiJi Cycle Select Wheel LI*

Grade 5

 Fractions on the Number Line

 3 levels

Probing Questions

- What do the numbers in the circles mean?
- How many are needed to make a whole?

Emphasize the Connection

Are students understanding the meaning of the fraction notation, especially the denominator?

Stop the Animation

Focus on the connection between the visual and symbolic representations of the fractions.

Wheels are presented numerically . . .



. . . but shown visually in the feedback.



*LI: Language Integration - Refers to the transition from a visual representation in ST Math to a gradual inclusion of words, mathematical symbols, and operators in higher levels of games.

STMath.

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Estimate Fractions on the Number Line

Grade 5

Fractions on the Number Line

5 levels

Probing Questions

- How do you decide where to put the blastpad?

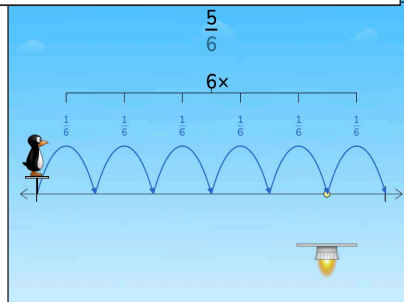
The Bigger Picture

Previous games focused on visual models. From this game on, puzzles begin with numbers. The animation uses visual models to reinforce the meaning of the fractions.

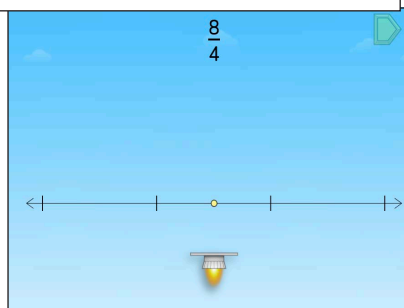
Research is Clear

Even after years of study, students lack conceptual understanding of fractions, which limits their ability to solve problems and apply computational procedures.

The animation shows jumps on the number line as unit fractions.



Later levels extend the number line beyond 1.





Fraction Trap

Grade 5

Fractions on the Number Line

3 levels

Probing Questions

- What do you know about the value of that fraction?
- How many parts should you break the line from 0 to 1 into?

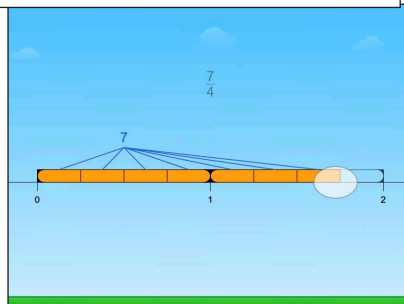
What's Important Here?

In levels 2 and 3, students are introduced to whole numbers as fractions (e.g., $0/4$, $6/1$).

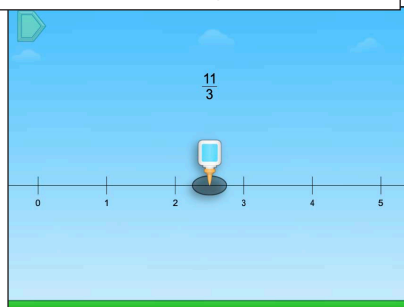
What do the Standards Say?

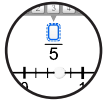
Represent a fraction a/b on a number line diagram by marking off a lengths of $1/b$ from 0.

Pause using the scrub bar to see how the unit is divided and then iterated.



The number line in Level 3 goes from 0-5.





Bubble Fraction Trap

Grade 5

Fractions on the Number Line

3 levels

Probing Questions

- How do you know where to put the glue trap?
- Why did you place the glue trap between those two numbers?

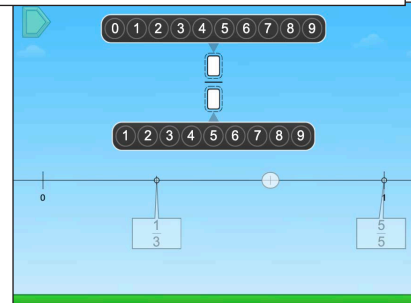
What's Important Here?

By naming multiple fractions with the same denominator, students are building a foundation for comparing fractions.

The Bigger Picture

Previously students placed a given fraction on the number line. In this final game, students must use fraction notation to describe points on a number line.

Multiple fractions must be shown on the same number line.



Help students connect to their whole number counting schema.

