Strip Diagrams

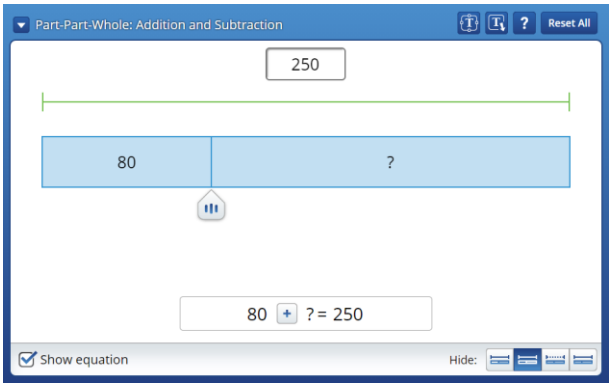
Finding a Missing Part

The workspace provides an automatic check system.

You can see how a value can be split into 2 parts, where the sum of the parts equals the whole.

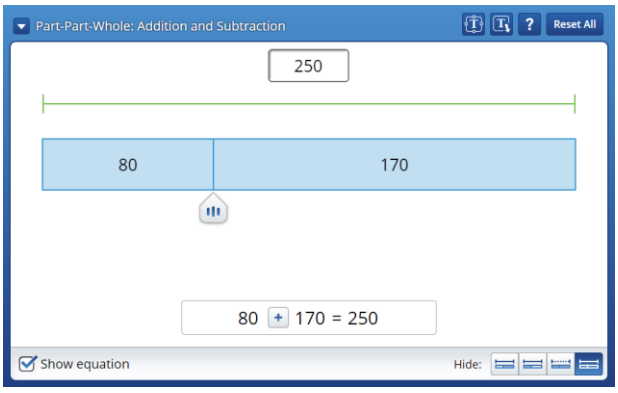
- You can input a number and divide it into 2 parts. The parts can be equal or not equal to each other. An equation is shown to match the diagram.
- Make sure that the mode displays Part-Part-Whole: Addition and Subtraction in the upper-left shell.
- You can click on the + to change the equation from addition to subtraction.

Practice Using Part-Part-Whole



1. Find the missing part of the equation 80 + ? = 250.
2. Click on the box above the strip diagram in the workspace.
   - Enter 250 next to "Enter a value" or enter using the numeric keypad. Then click OK.
3. Click the toggle button in the bottom shell of the workspace to hide the right part. The equation should change from 125 + 125 = 250 to 125 + ? = 250.
4. Drag the so that the strip diagram shows 80 for the first part and "?" for the second part.

   The equation should now read: 80 + ? = 250
5. Find the value of the missing part, or the "?," to make the equation true.
   - Click the toggle button that to show the full equation with the missing part, to see if your answer is correct.



Strip Diagrams

Comparing Parts to the Whole

To view the Part Comparison mode, click to see the drop-down menu and select **Comparison: Addition and Subtraction**.

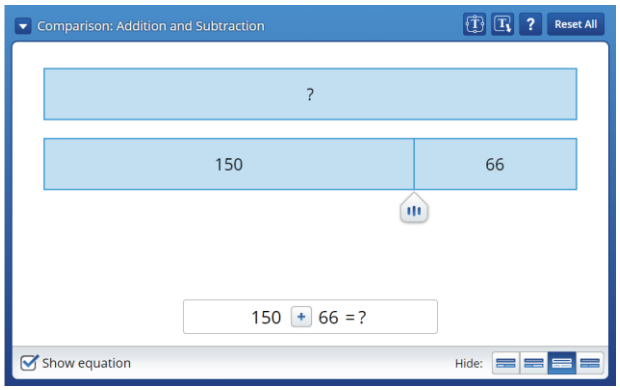
You can see how a value compares to 2 parts, where the sum of the parts equals the whole.

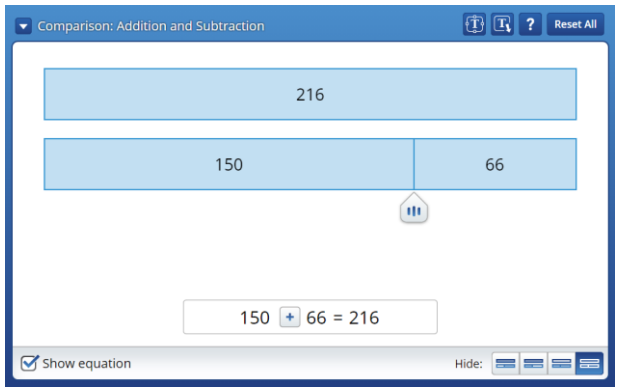
- You can input a number and divide it into 2 parts. The parts can be equal or not equal to each other. An equation is shown to match the diagram.
- You can click on the + to change the equation from addition to subtraction.

Practice Using Comparison: Addition

1. Find the sum of two parts 150 + 66 = ?.
2. Click the toggle button in the bottom shell of the workspace to hide the whole. The equation should change from 10 + 10 = 20 to 10 + 10 = ?.
3. Click on the left part of the strip diagram in the workspace.
   - Enter 150 next to "Enter a value" or enter using the numeric keypad. Then click OK.
4. Click on the right part of the strip diagram
   - Enter 66 next to "Enter a value" or enter using the numeric keypad. Then click OK.

   The equation should now read: 150 + 66 = ?.
5. Find the value of the missing whole, or the "?," to make the equation true.
   - Click the toggle button that to show the full equation with the whole, to see if your answer is correct.





Strip Diagrams

Finding Equal Parts

To view the Equal Parts mode, click to see the drop-down menu and select **Equal Parts: Multiplication and Division**.

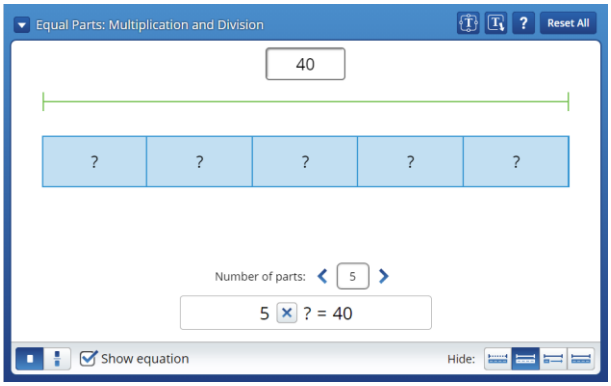
The workspace provides an automatic check system.

You can see how a value can be split into various parts and how parts can be multiplied to make a value. These parts can be whole numbers or fractions.

- You can click on to change the equation from multiplication to division.

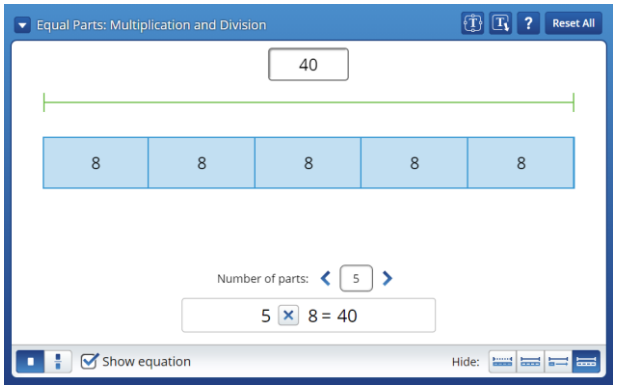
Practice Using Equal Parts

1. Divide 40 into 5 equal parts. Find the value of the parts.
   - Click on the top box in the workspace.
   - Enter 40 next to "Enter a value" or enter using the numeric keypad. Then click OK.



2. Click the toggle button in the bottom shell of the workspace. The equation should change from 2 × 20 = 40 to 2 × ? = 40.
3. Make sure that the Whole Numbers button is selected in the left part of the bottom shell.
4. Click on the right arrow located under the strip diagram until the box shows "5." 5

   The equation should now read: 5 × ? = 40.
5. Find the value of the 5 equal parts, or the value of the "?," to make the equation true.
   - Click the toggle button to show the full equation with the missing part, to see if your answer is correct.



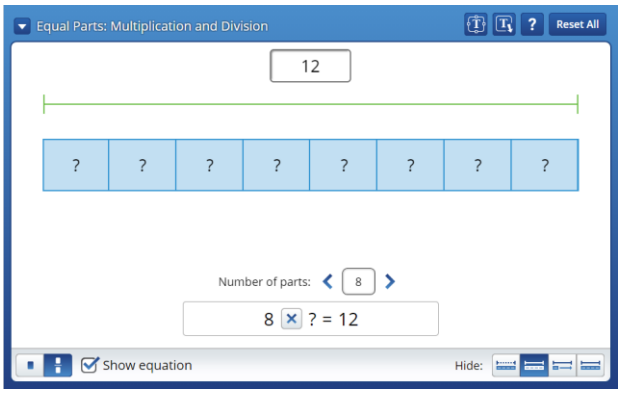
6. Divide 12 into 8 equal parts. Find the value of the parts.
7. Click the "Reset All" button Reset All in the top shell above the workspace. Then click OK.
8. Click on the top box in the workspace.
   - Enter 12 next to "Enter a value" or enter using the numeric keypad. Then click OK.

9 Click the  toggle button in the bottom shell of the workspace. The equation should change from $2 \times 6 = 12$ to $2 \times ? = 12$.

10 Make sure that the fractions button  is selected in the left part of the bottom shell.

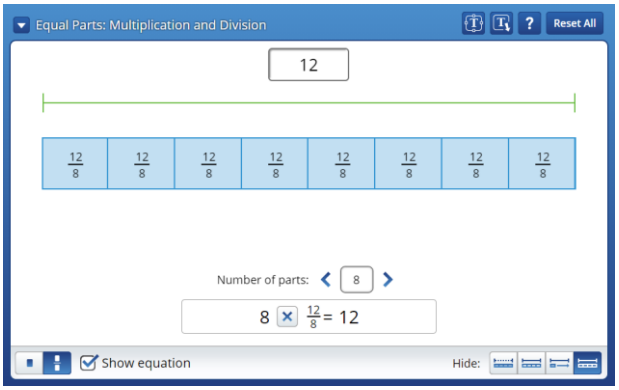
11 Click on the right arrow after the "Number of parts," located under the strip diagram, until the box shows "8". 

The equation should now read: $8 \times ? = 12$



12 Find the value of the 8 equal parts, or the value of the "?," to make the equation true.

- Click the  toggle button to show the full equation with the missing part, to see if your answer is correct.



Strip Diagrams

Comparing Factors

To view the Factor Comparison mode, click to see the drop-down menu and select **Comparison: Multiplication and Division**.

The workspace provides an automatic check system.

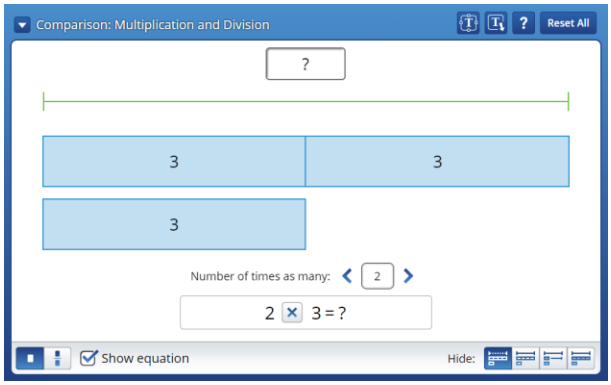
You can see how parts can be multiplied to make a value and compare the parts to the whole. These parts can be whole numbers or fractions.

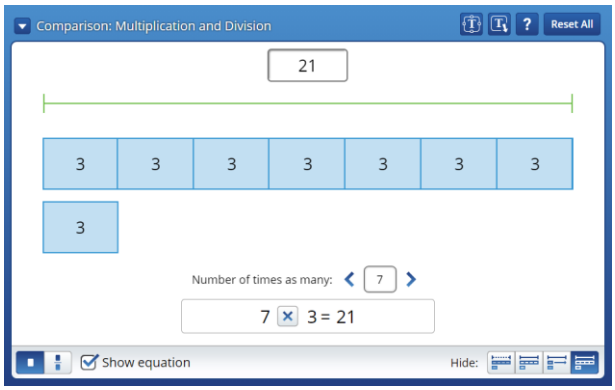
- You can click on to change the equation from multiplication to division.

Practice Using Comparison: Multiplication

1. Multiply 7 × 3.
   - Click on one part of the strip diagram in the workspace.
   - Enter 3 next to "Enter a value" or enter using the numeric keypad. Then click OK.
2. Click the toggle button in the bottom shell of the workspace. The equation should change from 2 × 3 = 6 to 2 × 3 = ?.
3. Click on the right arrow located under the strip diagram until the box shows "7." 7

   The equation should now read: 7 × 3 = ?.
4. Find the value of the product, or the value of the "?," to make the equation true.
   - Click the toggle button to show the full equation with the missing part, to see if your answer is correct.





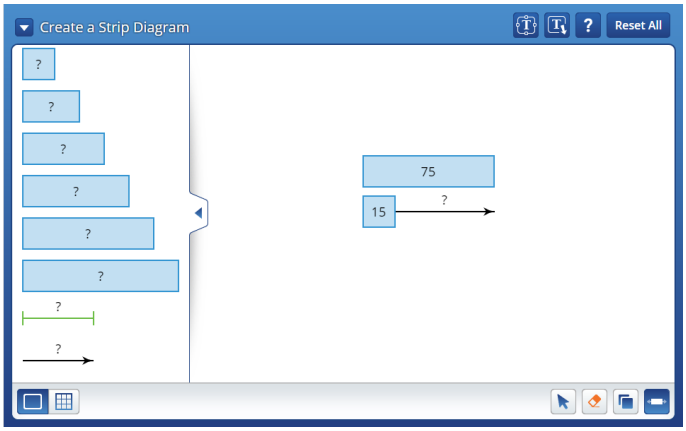
Strip Diagrams

Creating Diagrams

To view the Create a Strip Diagram mode, click ▼ to see the drop-down menu and select **Create a Strip Diagram**.

You can construct a strip diagram to model any situation.

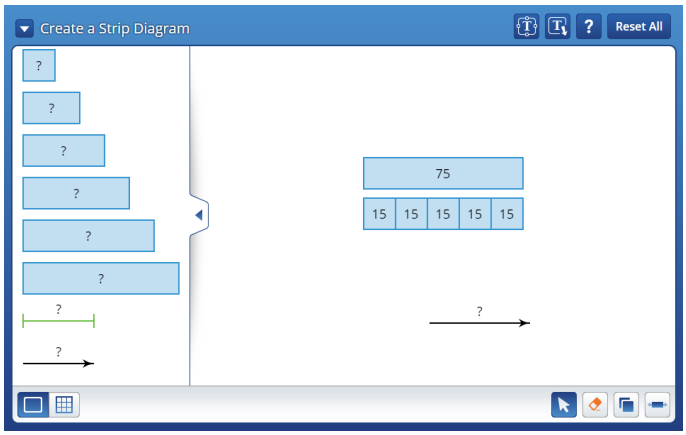
Practice Creating a Strip Diagram



1 Model the problem 75 ÷ 15.

- Click on a medium-sized [?] tile from the palette and drag it into the workspace.
- Click on the tile and enter 75 next to "Enter a value" or enter using the numeric keypad. Then click OK.
- Click on the smallest [?] tile from the palette and drag it to line up with the left side of the first tile.
- Click on the tile and enter 15 next to "Enter a value". Then click OK.
- Click on the ? ⟶ icon and drag it into the workspace.
- Use the ⟷ to resize the arrow to match the large tile.

This strip diagram models 75 ÷ 15.



2 Model the problem 75 ÷ 15 = 5.

- Select ⧉ and click on the [15] tile to make 4 copies.
- Use the ↖ to drag the arrow out of the way, and then line up the [15] tiles below the [75] tile.
- Use the ⟷ to resize the large tile to match the length of the 5 smaller tiles.

This strip diagram models the problem 75 ÷ 15 and its solution, 5.

Additional Features

- Use ◇ to erase an element from the workspace.