Number: Fractions

Master The Curriculum

3

Fluency & Reasoning Teaching Slides

Equivalent Fractions (1)

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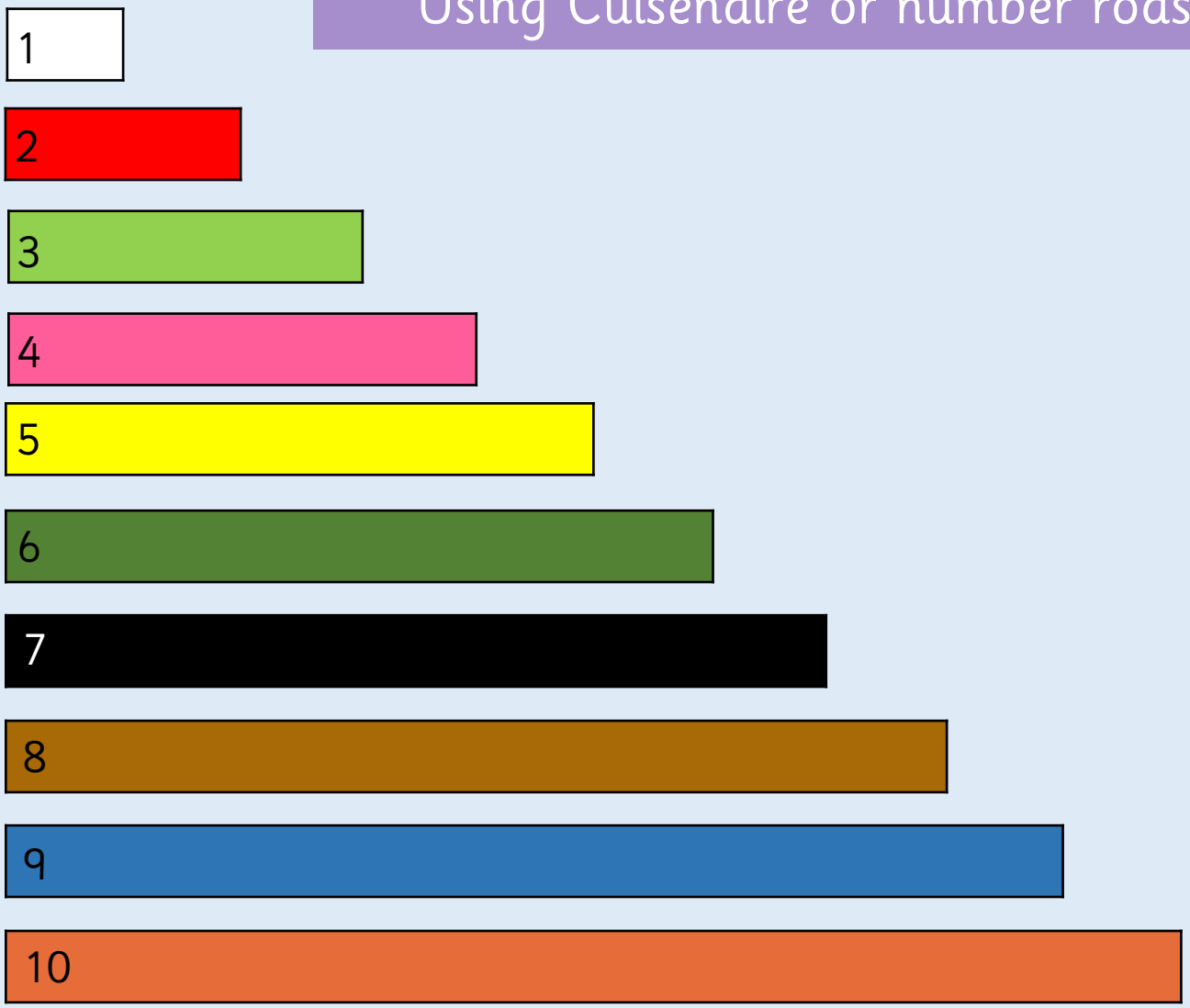
Fluency & Reasoning Teaching Slides

Activity 1

Equivalent Fractions (1)

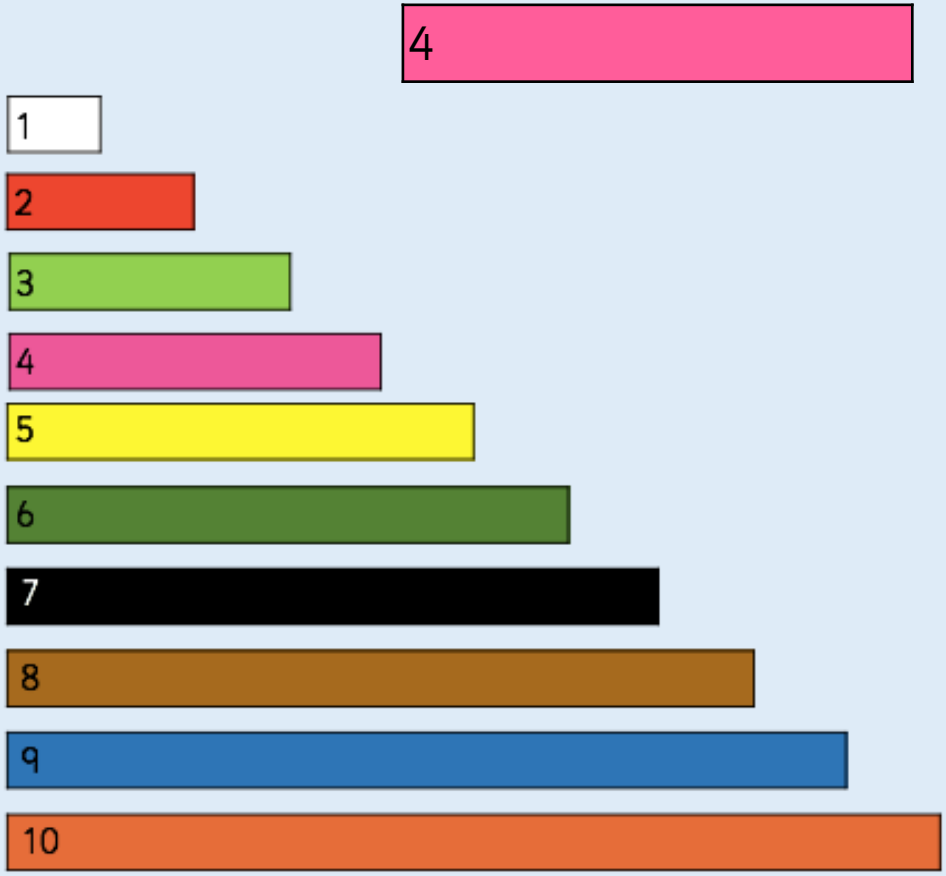
Using Cuisenaire or number rods.



Activity 1

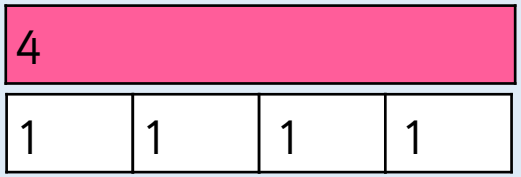
Equivalent Fractions (1)

The pink rod is worth one whole.
Which rod would be worth $\frac{1}{4}$?



Activity 1 Equivalent Fractions (1)

The white rod would be worth $\frac{1}{4}$.



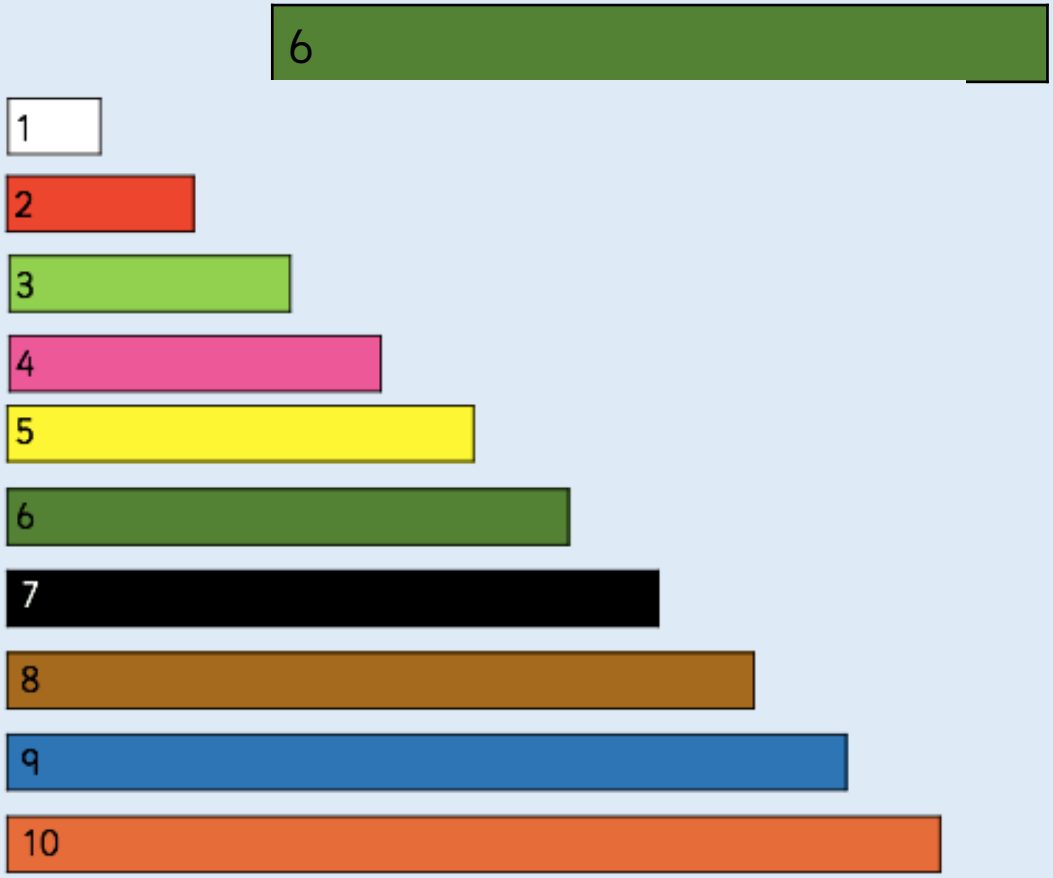
Can you explain why?

Investigate other equivalent fractions.

Activity 1

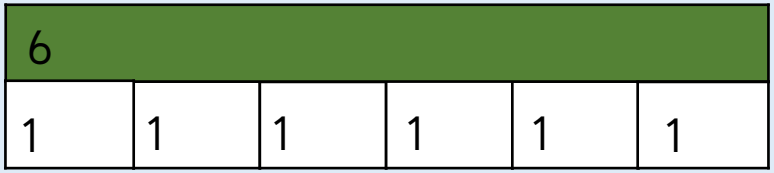
Equivalent Fractions (1)

The green rod is worth one whole.
Which rod would be worth $\frac{1}{6}$?



Activity 1 Equivalent Fractions (1)

The white rod would be worth $\frac{1}{6}$.



Can you explain why?

Investigate other equivalent fractions.

The picture can't be displayed.

Which rods would be worth $\frac{2}{4}$ *?* $\frac{1}{2}$ *?*

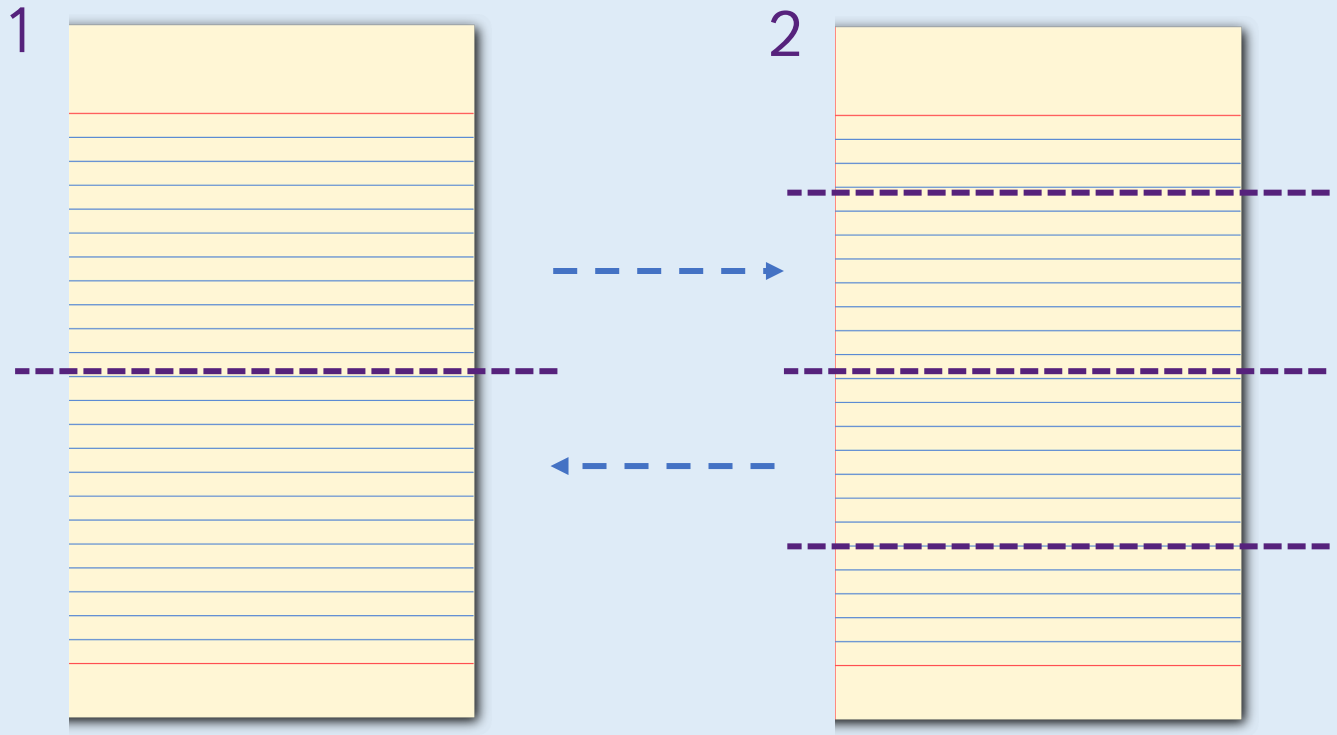
Activity 2 Equivalent Fractions (1)

You will need two equally sized strips of paper.

Fold one strip of paper into halves and the other into quarters.
Place the halves on top of the quarters and lift one half.

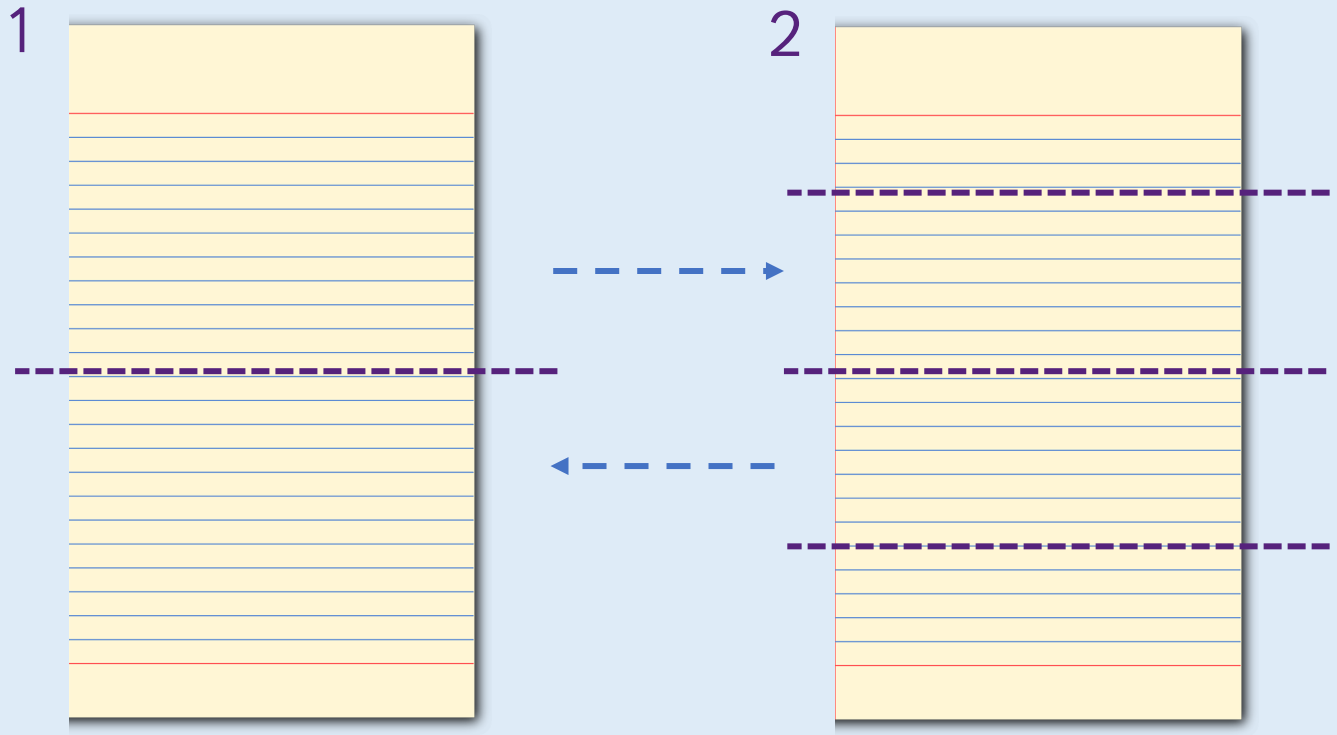
Activity 2 Equivalent Fractions (1)

How many quarters can you see?
How many quarters are equivalent to one half?



Activity 2 Equivalent Fractions (1)

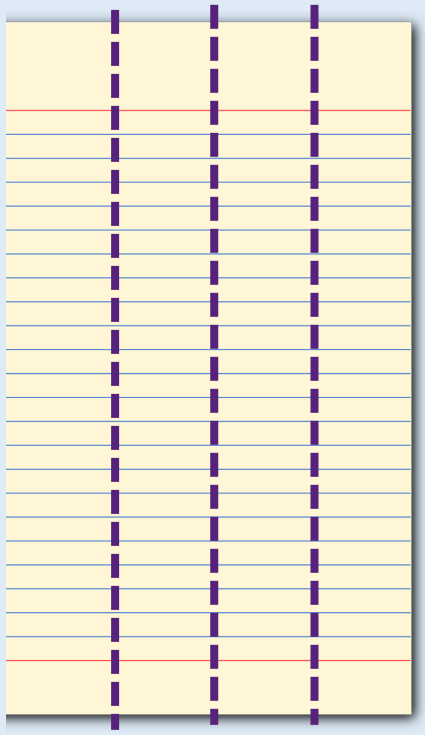
two quarters = one half



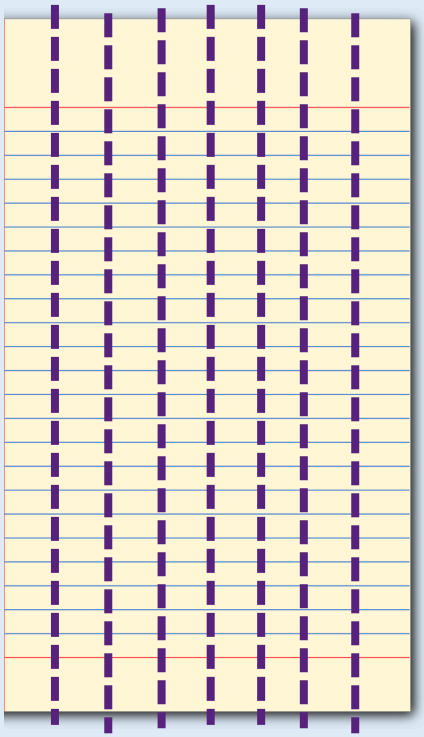
Activity 2 Equivalent Fractions (1)

Fold one paper into quarters and the other into eighths.

1



2



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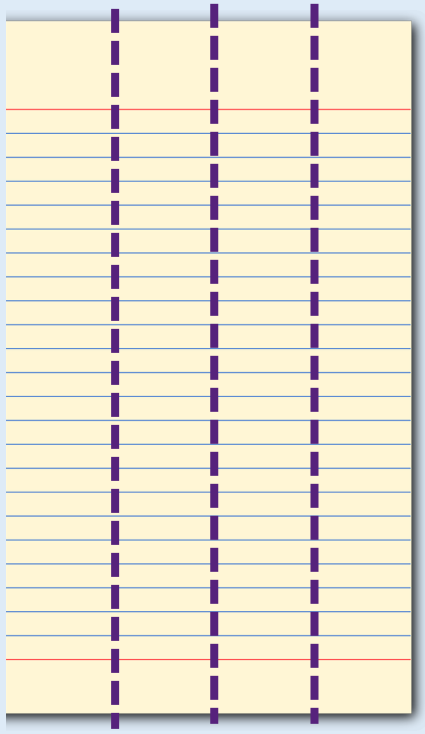
When you lift up one quarter, how many eighths is this equivalent to?

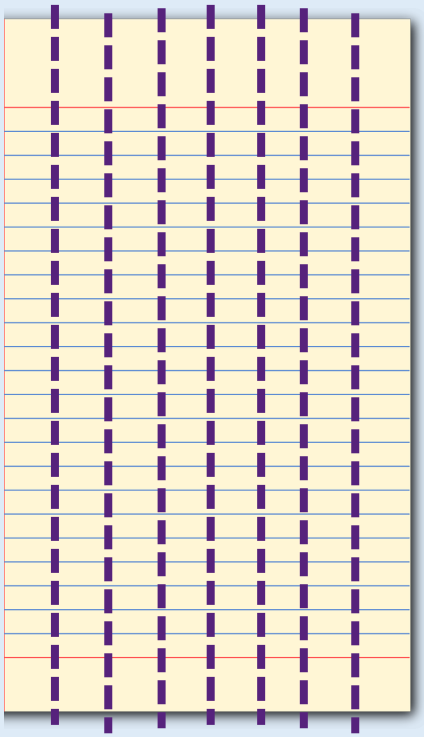
Activity 2 Equivalent Fractions (1)

one quarter = two eighths

1



2



The picture can't be displayed.

Can you find any other equivalent fractions?

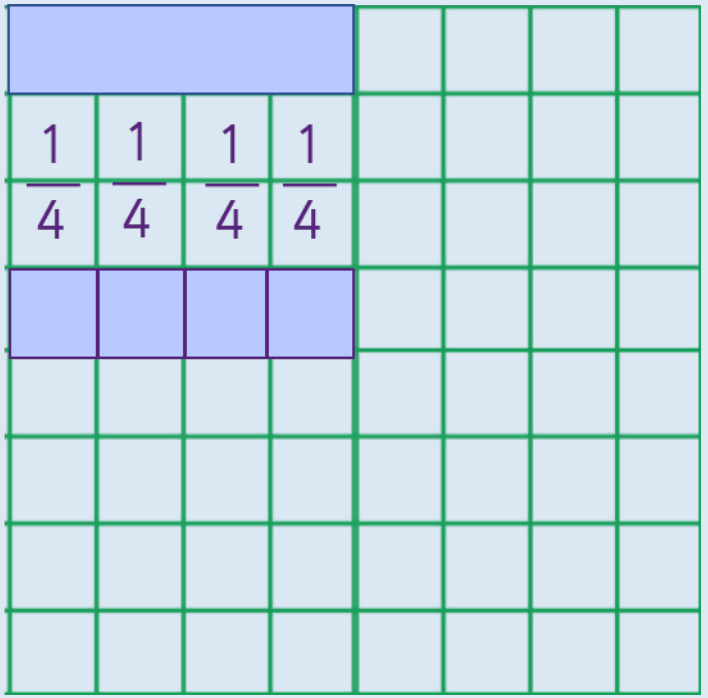
Activity 3 Equivalent Fractions (1)

Using squared paper, look carefully and investigate equivalent fractions using equal parts.

e.g. $\frac{\square}{2} = \frac{\square}{4}$

Start by drawing a bar four squares long. Label each square $\frac{1}{4}$.

Underneath, compare the same length bar split into four equal parts.

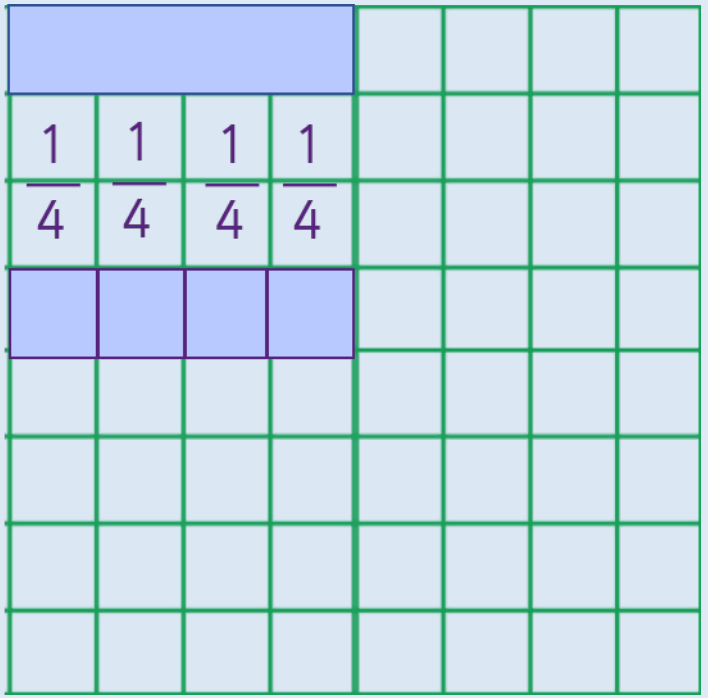


Activity 3 Equivalent Fractions (1)

What fraction is each part now?

Answer:

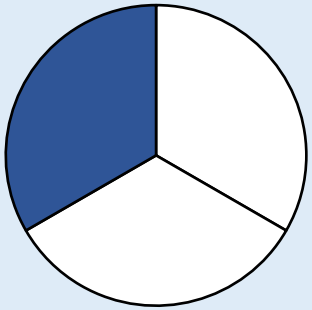
e.g. $\frac{\boxed{1}}{2} = \frac{\boxed{2}}{4}$

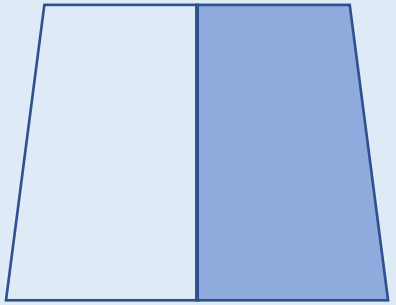


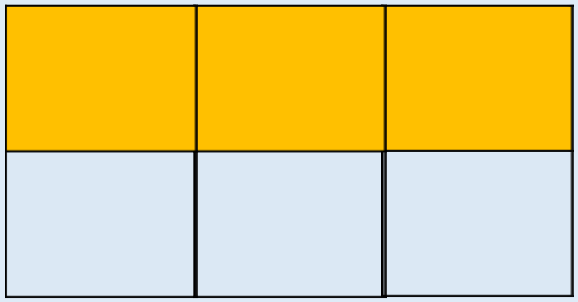
Reasoning 1

Equivalent Fractions (1)

Tia wants to know which of the following is the odd one out and why.

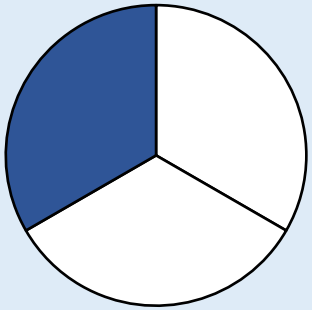






Reasoning 1 Equivalent Fractions (1)

Tia wants to know which of the following is the odd one out and why.



This is the odd one out because both of the other fractions are equivalent to $\frac{1}{2}$

Reasoning 2 Equivalent Fractions (1)

Malachi makes this fraction:

Esin

Esin says she can make an equivalent fraction with a denominator of 12.

Zach disagrees. He says it can't have a denominator of 12 because the denominator would need to be double 4.

Zach

Reasoning 2 Equivalent Fractions (1)

Who is correct? Who is incorrect?
Explain why.

Esin

Esin is correct. She could make three twelfths which is equivalent to one quarter.

Zach is incorrect. He has a misconception that you can only double to find equivalent fractions.

Zach

Discuss

Equivalent Fractions (1)

If the ___ rod is worth one whole, can you show me $\frac{1}{2}$?

How about $\frac{1}{4}$?

Can you find other rods that are the same?
What fraction would they represent?

How can you fold a strip of paper into equal parts?
What do you notice about the numerators and denominators?
Do you see any patterns?

Can a fraction have more than one equivalent fraction?

Equivalent Fractions (2)

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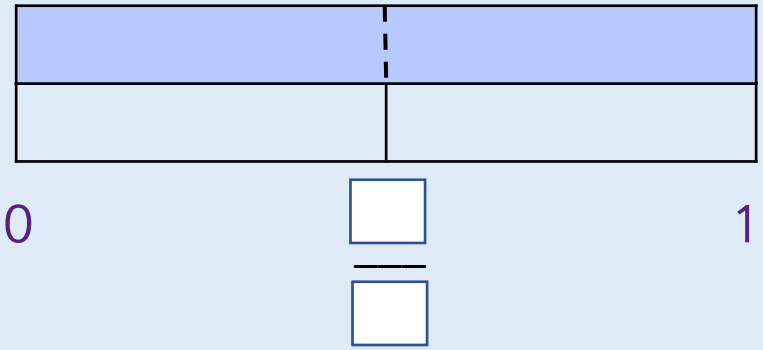
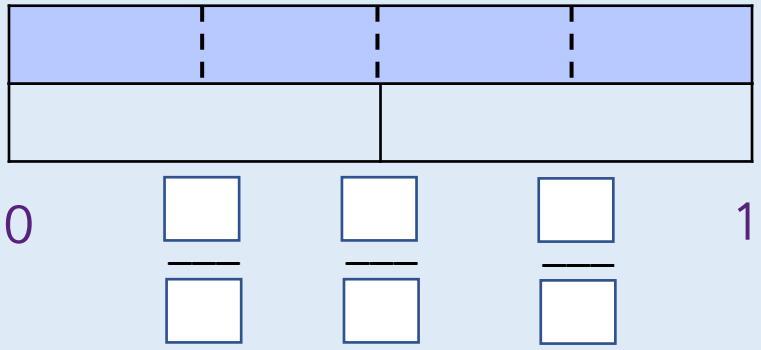
Activity 1 Equivalent Fractions (2)

Use the bars on the number line to identify the missing fractions.





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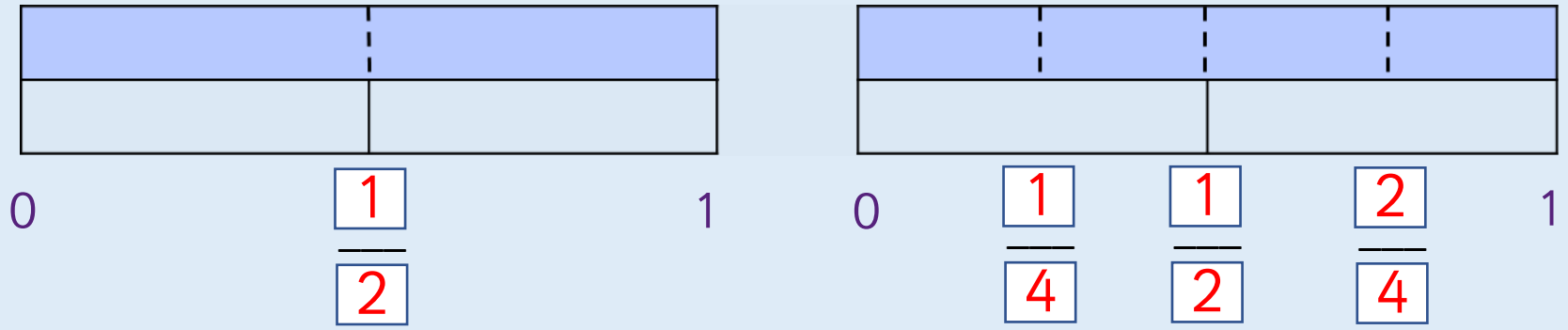
Which fractions are equivalent?

Activity 1 Equivalent Fractions (2)

Use the bars on the number line to identify the missing fractions.

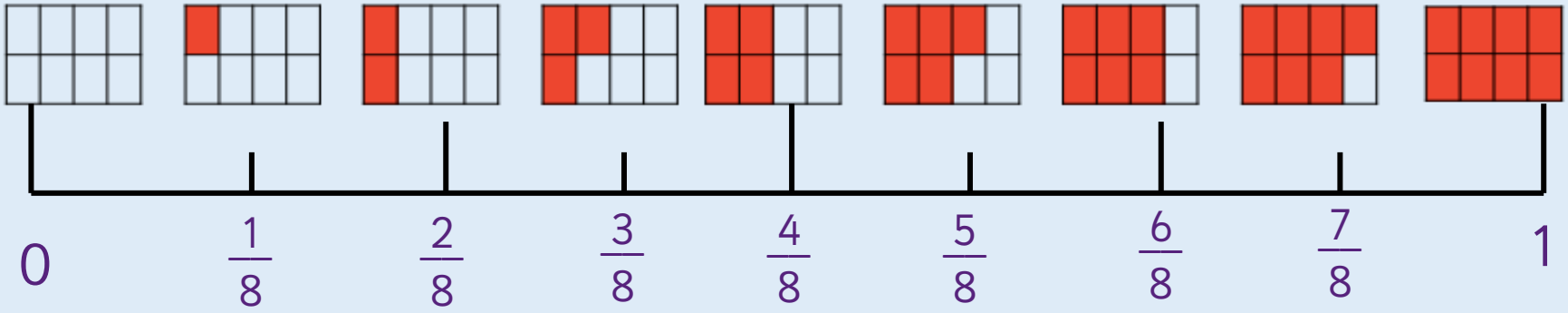


The picture can't be displayed.

Which fractions are equivalent?

Activity 2 Equivalent Fractions (2)

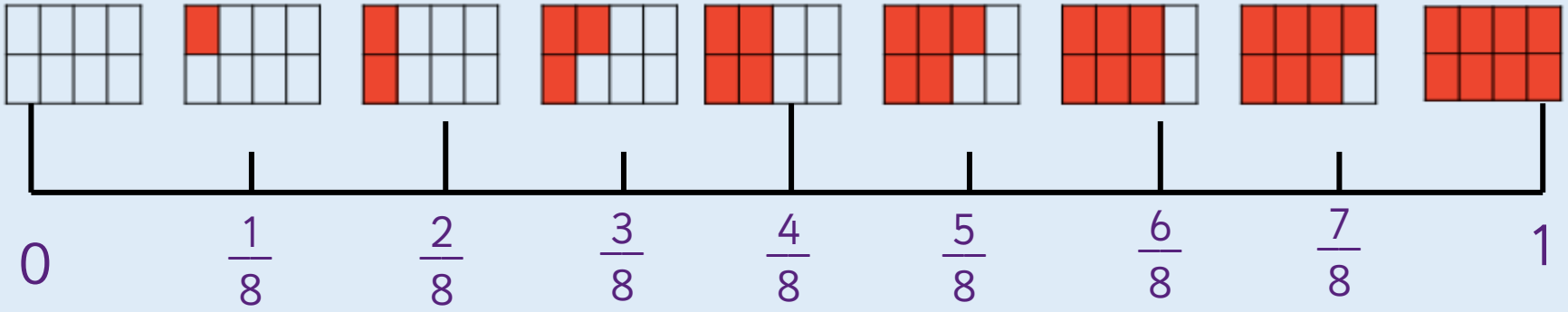
Look carefully at the fraction diagrams.
Can you complete the missing equivalent fractions?



0 = ☐/☐ = ☐/☐ = ☐/☐ 1

Activity 2 Equivalent Fractions (2)

Look carefully at the fraction diagrams.
Can you complete the missing equivalent fractions?

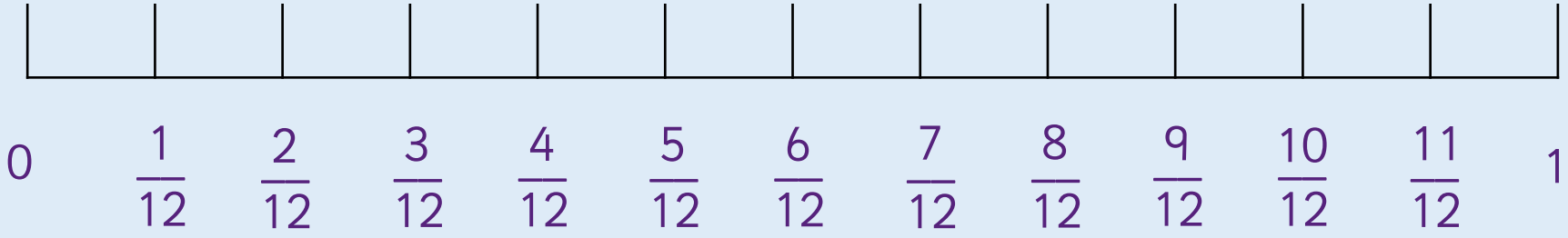


0 $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ 1

Activity 3 Equivalent Fractions (2)

Place these equivalent fractions on the number line.

$\frac{1}{4}$ $\frac{3}{4}$ $\frac{1}{6}$ $\frac{1}{3}$ $\frac{2}{3}$

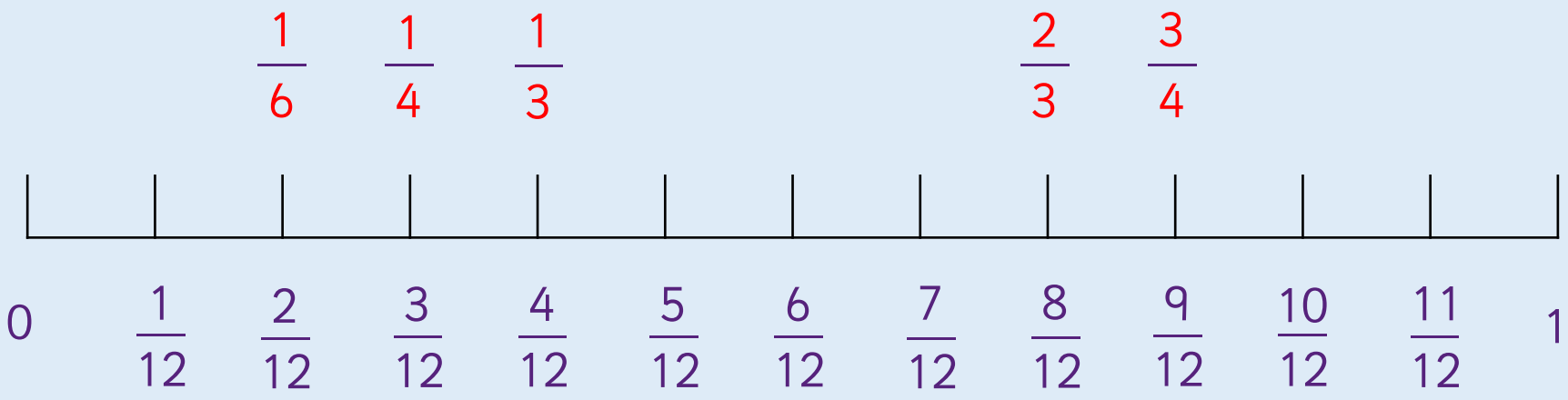


The picture can't be displayed.

Can you identify any other equivalent fractions?

Activity 3 Equivalent Fractions (2)

Place these equivalent fractions on the number line.

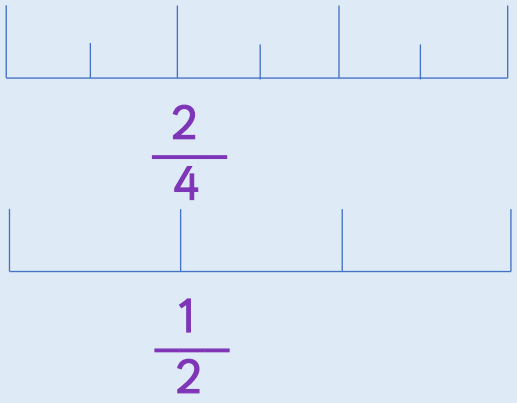


Reasoning 1 Equivalent Fractions (2)

Leanna wants to work on a number line to explore equivalent fractions.

Rosie

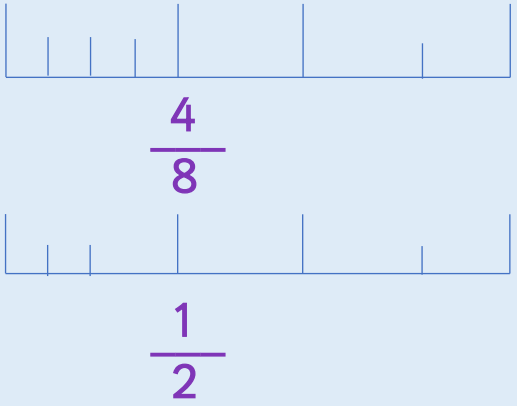
$\frac{2}{4}$ $\frac{1}{2}$



Which representation should Leanna agree with? Explain why.

$\frac{4}{8}$ $\frac{1}{2}$

Tia



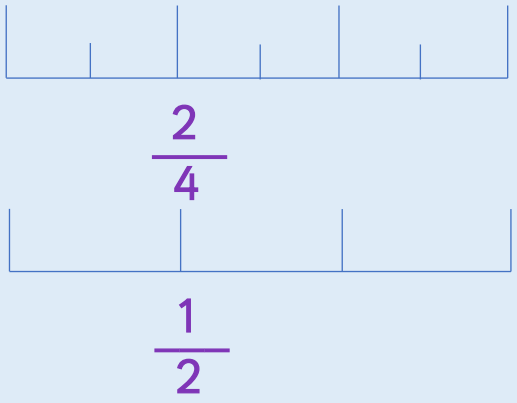
Reasoning 1

Equivalent Fractions (2)

Leanna wants to work on a number line to explore equivalent fractions.

Rosie

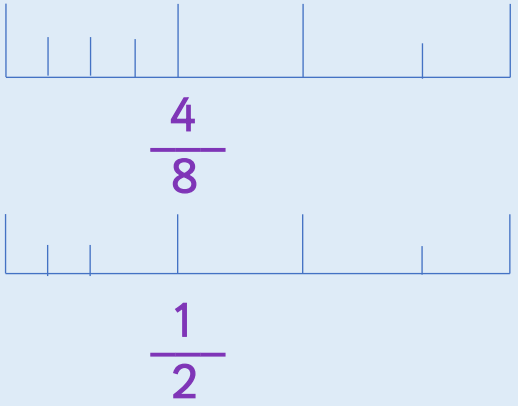
$\frac{2}{4}$ $\frac{1}{2}$



Rosie is correct. Tia's top number line isn't split into equal parts which means she cannot find the correct equivalent fraction.

$\frac{4}{8}$ $\frac{1}{2}$

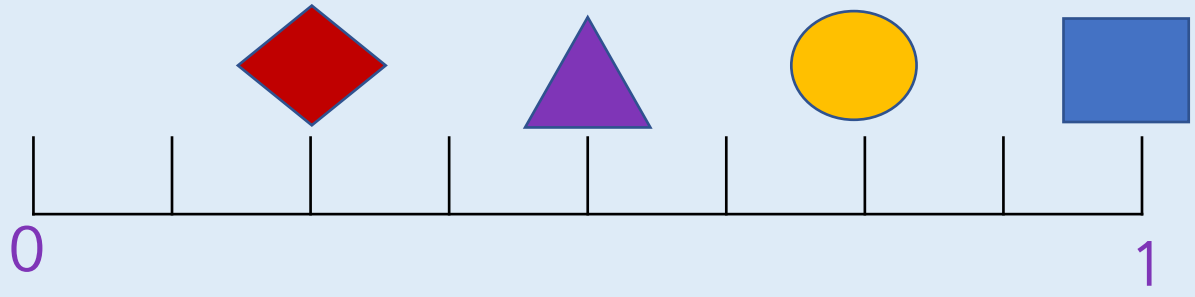
Tia



Reasoning 2 Equivalent Fractions (2)

Use the clues to work out which fraction is being described for each shape.

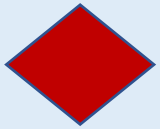
$\frac{1}{4}$ $\frac{2}{2}$ $\frac{3}{4}$ $\frac{2}{4}$ $\frac{4}{4}$ $\frac{4}{8}$



- My denominator is 8 and my numerator is half of my denominator.
- I am equivalent to one whole
- I am equivalent to $\frac{3}{12}$
- I am equivalent to $\frac{6}{8}$

Reasoning 2 Equivalent Fractions (2)

Use the clues to work out which fraction is being described for each shape.

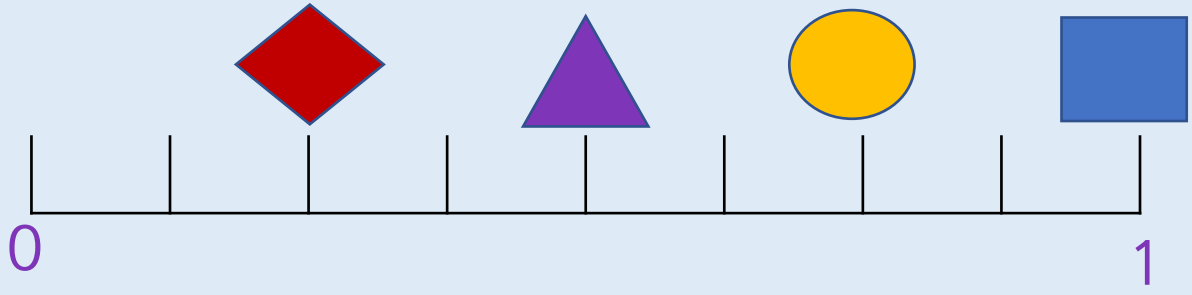


$= \frac{1}{4}$

$= \frac{2}{4}$ $\frac{4}{8}$

$= \frac{4}{4}$ $\frac{2}{2}$

$= \frac{3}{4}$



- My denominator is 8 and my numerator is half of my denominator.
- I am equivalent to one whole
- I am equivalent to $\frac{3}{12}$
- I am equivalent to $\frac{6}{8}$

Discuss

Equivalent Fractions (2)

The number line represents one whole, where can we see the fraction $\frac{\square}{\square}$?

Can we see any equivalent fractions?

Look at the number line divided into twelfths. Which unit fractions can you place on the number line as equivalent fractions?

E.g. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, etc. Which unit fractions are not equivalent to twelfths?

Equivalent Fractions (3)

3

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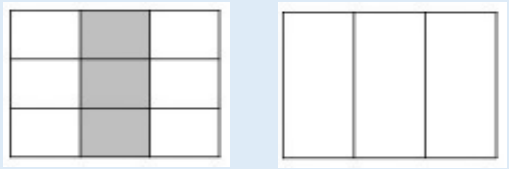
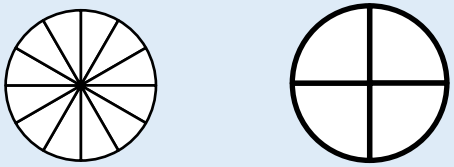
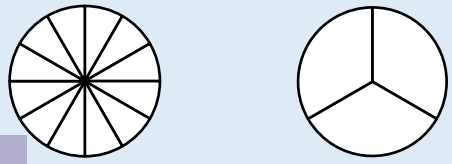
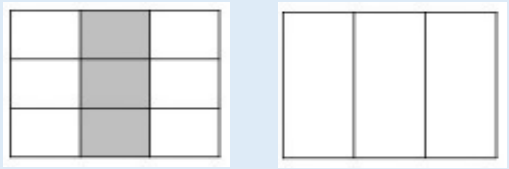
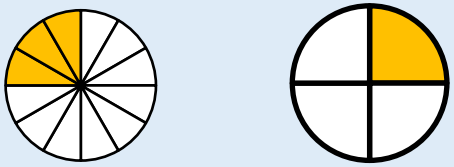
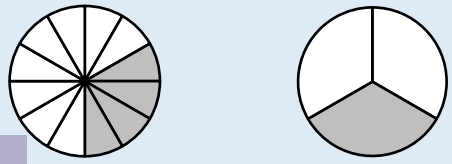
Activity 1 Equivalent Fractions (3)

Complete the table. Can you spot any patterns?

Pictorial representations	Fraction	Words
	$\frac{6}{8} = \frac{3}{4}$	Six eighths is equivalent to three quarters.
	$\frac{3}{9} = \frac{\quad}{3}$	
	$\frac{\quad}{4} = \frac{\quad}{12}$	Three twelfths is equivalent to
	$\frac{4}{12} = \frac{\quad}{\quad}$	

Activity 1 Equivalent Fractions (3)

Complete the table. Can you spot any patterns?

Pictorial representations	Fraction	Words
	$\frac{6}{8} = \frac{3}{4}$	Six eighths is equivalent to three quarters.
	$\frac{3}{9} = \frac{1}{3}$	Three ninths is equivalent to one third.
	$\frac{1}{4} = \frac{3}{12}$	Three twelfths is equivalent to one quarter.
	$\frac{4}{12} = \frac{1}{3}$	Four twelfths is equivalent to one third.

Activity 2

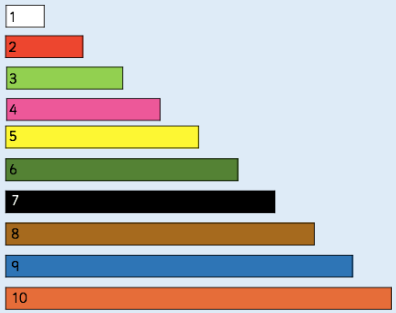
Equivalent Fractions (3)

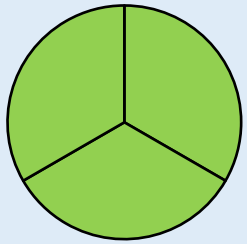
Complete the statements.
Use practical equipment, strips or the fraction wall to help you.

$$\frac{1}{2} = \frac{\quad}{6} = \frac{\quad}{12}$$

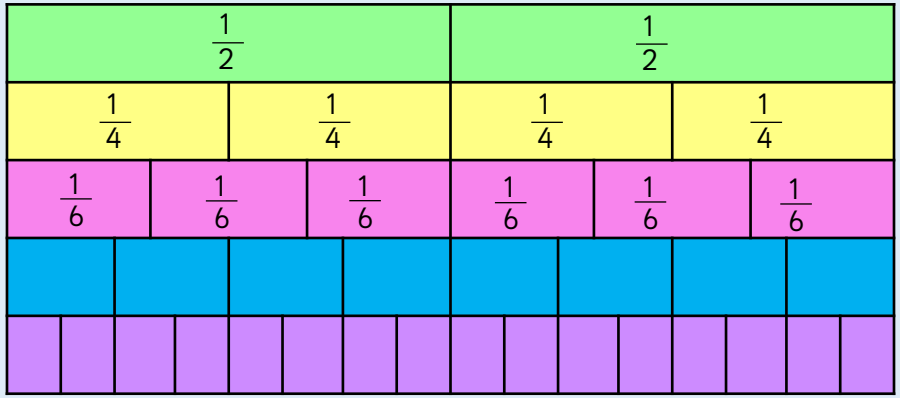
$$\frac{\quad}{2} = \frac{2}{4} = \frac{\quad}{8}$$

$$\frac{1}{4} = \frac{\quad}{8} = \frac{\quad}{16}$$





Fraction circles



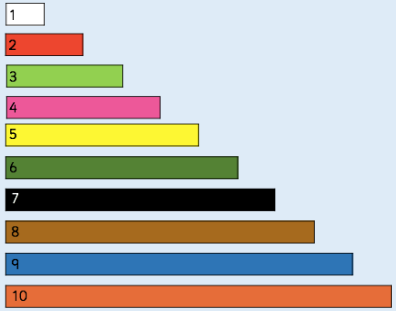
Activity 2 Equivalent Fractions (3)

Complete the statements.
Use practical equipment, strips or the fraction wall to help you.

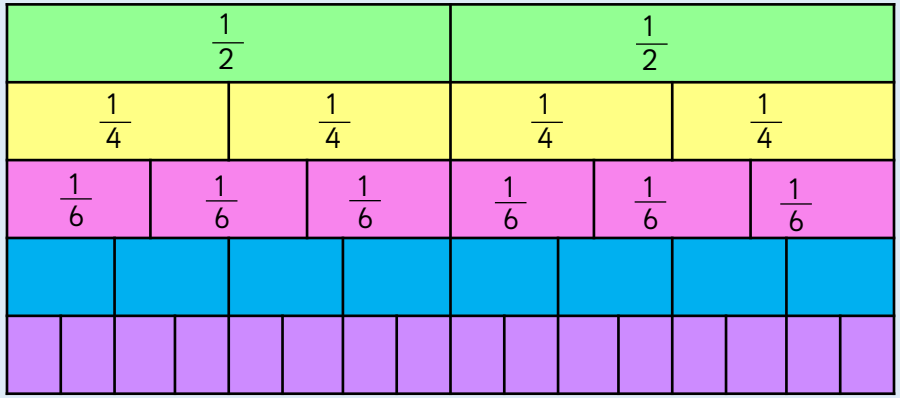
$\frac{1}{2} = \frac{3}{6} = \frac{6}{12}$

$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$

$\frac{1}{4} = \frac{2}{8} = \frac{4}{16}$



Fraction circles



Reasoning 1 Equivalent Fractions (3)

If a fraction is equivalent to one half, the denominator is triple the numerator.
Prove it.

Always | Sometimes | Never

Can you find any relationships between the numerator and denominator for other equivalent fractions?

Reasoning 1 Equivalent Fractions (3)

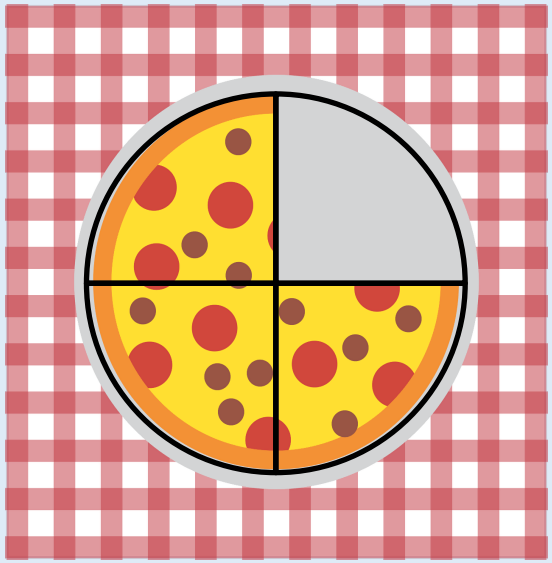
If a fraction is equivalent to one half, the denominator is triple the numerator.
Prove it.

Never. If a fraction is equivalent to one half, the denominator is double the numerator. Children could also think of the numerator as being half of the denominator.

Never

Reasoning 2 Equivalent Fractions (3)

Malachi is relating equivalent fractions with a sliced pizza.



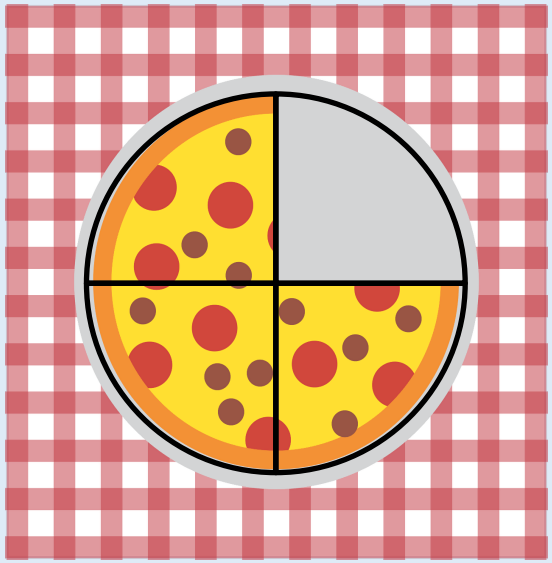
Malachi

I am thinking of an equivalent fraction to the pizza where the denominator is 9.

Is this possible?
Explain why.

Reasoning 2 Equivalent Fractions (3)

Malachi is relating equivalent fractions with a sliced pizza.



Malachi

I am thinking of an equivalent fraction to the pizza where the denominator is 9.

This is impossible. Malachi may have mistaken the denominator for the numerator and be thinking of $\frac{9}{12}$

which is equivalent to $\frac{3}{4}$

Discuss

Equivalent Fractions (3)

Why do our times tables help us find equivalent fractions?

Can we see a pattern between the fractions?

Look at the relationship between the numerator and denominator, what do you notice?
Does an equivalent fraction have the same relationship?

If we add the same number to the numerator and denominator, do we find an equivalent fraction? Why?

Compare Fractions

3

Fluency & Reasoning Teaching Slides

Activity 1 Compare Fractions

Compare the fractions using comparison symbols >, =, and <. Use fraction strips below to help.

$\frac{1}{10}$ ◯ $\frac{1}{4}$

$\frac{1}{3}$ ◯ $\frac{1}{6}$

$\frac{1}{5}$ ◯ $\frac{1}{4}$

Activity 1 Compare Fractions

Compare the fractions using comparison symbols >, =, and <. Use fraction strips below to help.

$\frac{1}{10} < \frac{1}{4}$

$\frac{1}{3} > \frac{1}{6}$

$\frac{1}{5} < \frac{1}{4}$

Activity 2 Compare Fractions

When the numerators are the same, the bigger the denominator, the smaller the fraction.

$\frac{1}{10} < \frac{1}{4}$ $\quad \frac{1}{3} > \frac{1}{6}$ $\quad \frac{1}{5} < \frac{1}{4}$

Compare these fractions

$\frac{1}{9} \bigcirc \frac{1}{4}$ $\quad \frac{1}{8} \bigcirc \frac{1}{10}$ $\quad \frac{1}{3} \bigcirc \frac{1}{12}$

Activity 2 Compare Fractions

When the numerators are the same, the bigger the denominator, the smaller the fraction.

$\frac{1}{10} < \frac{1}{4}$ $\quad \frac{1}{3} > \frac{1}{6}$ $\quad \frac{1}{5} < \frac{1}{4}$

Compare these fractions

$\frac{1}{9} < \frac{1}{4}$ $\quad \frac{1}{8} > \frac{1}{10}$ $\quad \frac{1}{3} > \frac{1}{12}$

Activity 3 Compare Fractions

Compare the fractions using comparison symbols >, =, and <. Use the fraction strips below to help.

$\frac{5}{6}$ ◯ $\frac{1}{6}$

$\frac{6}{6}$ ◯ $\frac{2}{6}$

$\frac{3}{6}$ ◯ $\frac{4}{6}$

Activity 3 Compare Fractions

Compare the fractions using comparison symbols >, =, and <. Use the fraction strips below to help.

$\frac{5}{6} > \frac{1}{6}$

$\frac{6}{6} > \frac{2}{6}$

$\frac{3}{6} < \frac{4}{6}$

Activity 4 Compare Fractions

When the denominators are the same, the bigger the numerator, the bigger the fraction.

$\frac{5}{6} > \frac{1}{6}$ $\frac{3}{6} < \frac{4}{6}$ $\frac{6}{6} > \frac{2}{6}$

Compare these fractions

$\frac{5}{9} \bigcirc \frac{8}{9}$ $\frac{4}{8} \bigcirc \frac{2}{8}$ $\frac{7}{12} \bigcirc \frac{1}{12}$

Activity 4 Compare Fractions

When the denominators are the same, the bigger the numerator, the bigger the fraction.

$\frac{5}{6} > \frac{1}{6}$ $\frac{3}{6} < \frac{4}{6}$ $\frac{6}{6} > \frac{2}{6}$

Compare these fractions

$\frac{5}{9} < \frac{8}{9}$ $\frac{4}{8} > \frac{2}{8}$ $\frac{7}{12} > \frac{1}{12}$

Reasoning 1 Compare Fractions

According to Esin, she knows that $\frac{1}{5}$ is larger than $\frac{1}{4}$ because 5 is larger than 4.

Esin

$\frac{1}{5} > \frac{1}{4}$

Do you agree with Esin?
Can you explain why?

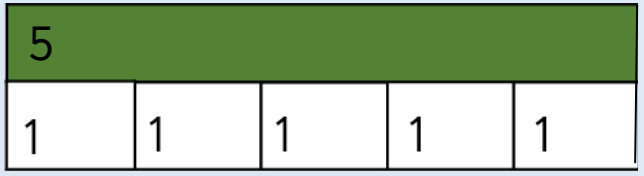
Reasoning 1 Compare Fractions

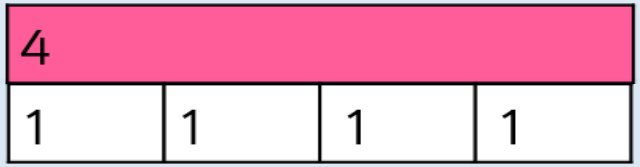
$\frac{1}{5}$ is smaller because it is split into five equal parts, rather than four equal parts.

Esin could draw a bar model to show this.

Esin

$\frac{1}{5} < \frac{1}{4}$





Reasoning 2 Compare Fractions

Zach wants to complete the missing denominator.

$$\frac{1}{2} > \frac{1}{\square} > \frac{1}{10}$$

How many different options can he find?

Reasoning 2 Compare Fractions

Zach wants to complete the missing denominator.

$$\frac{1}{2} > \frac{1}{\square} > \frac{1}{10}$$

How many different options can he find?

Possible options:

$\frac{1}{2} > \frac{1}{4} > \frac{1}{10}$ $\frac{1}{2} > \frac{1}{8} > \frac{1}{10}$

Reasoning 3 Compare Fractions

Compare the three fractions.

$\frac{1}{6}$ $\frac{2}{3}$ $\frac{2}{6}$

Which fraction is the largest?
How do you know?

Which fraction is the smallest?
How do you know?

Reasoning 3 Compare Fractions

Compare the three fractions.

$\frac{1}{6}$ $\frac{2}{3}$ $\frac{2}{6}$

$\frac{2}{3}$ is the largest.

When the numerators are the same, the smaller the denominator, the larger the fraction.

$\frac{1}{6}$ is the smallest.

When the denominators are the same, the smaller the numerator, the smaller the fraction.

Discuss

Compare Fractions

What fraction of the strip is shaded?
What fraction of the strip is not shaded?

Why is it important that the strips are the same length and are lined up underneath each other?

Can you think of a unit fraction that is smaller than $\frac{1}{10}$?

Can you think of a unit fraction that is larger than $\frac{1}{3}$?

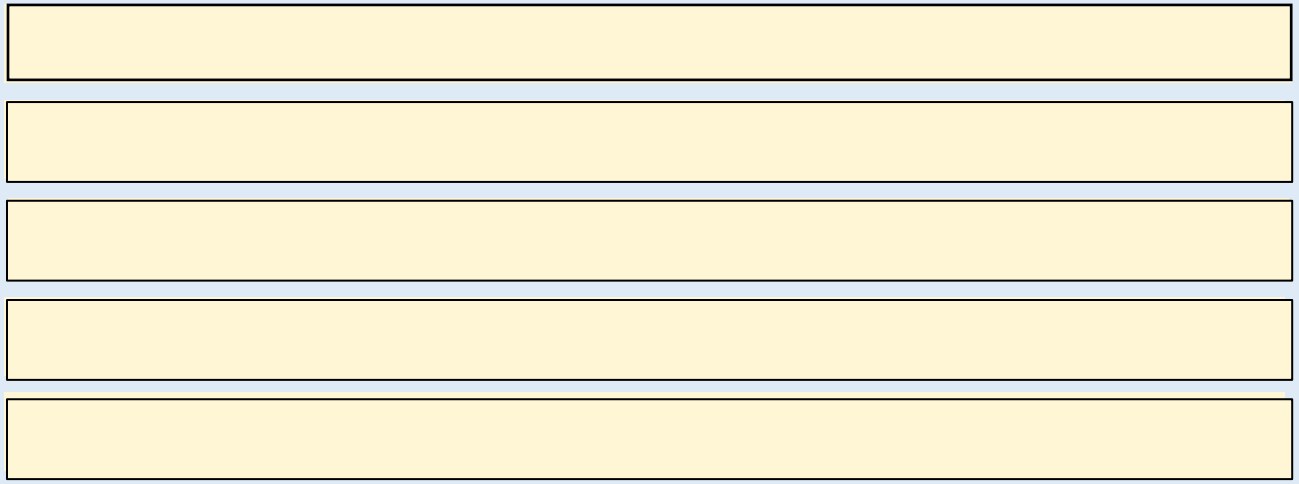
Order Fractions

3

Fluency & Reasoning Teaching Slides

Activity 1 Order Fractions

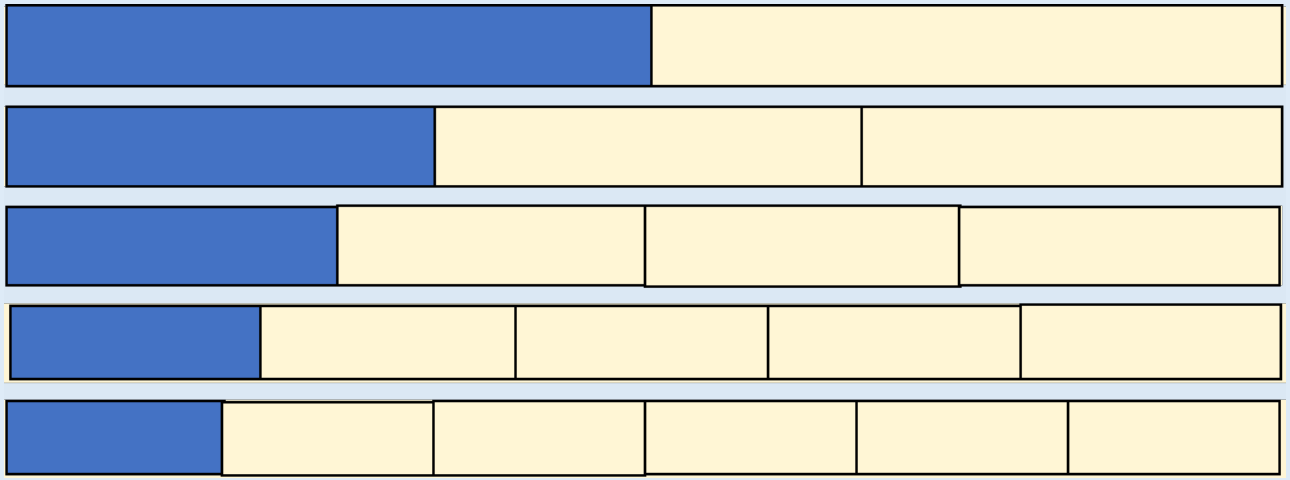
You will need five strips of paper the same size.



Split the papers into halves, thirds, quarters, fifths and sixths and colour one part of each strip.

Activity 1 Order Fractions

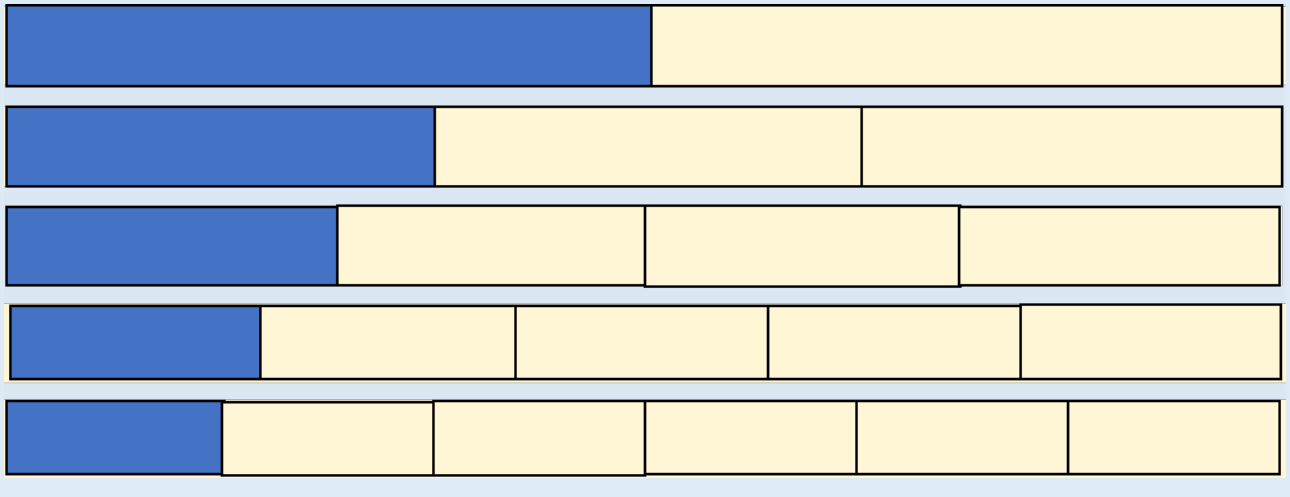
Order them in ascending (smallest to largest) order. Then descending (largest to smallest) order.



When the numerators are the same, the _____ the denominator, the _____ the fraction.

Activity 1 Order Fractions

Order them in ascending (smallest to largest) order. Then descending (largest to smallest) order.



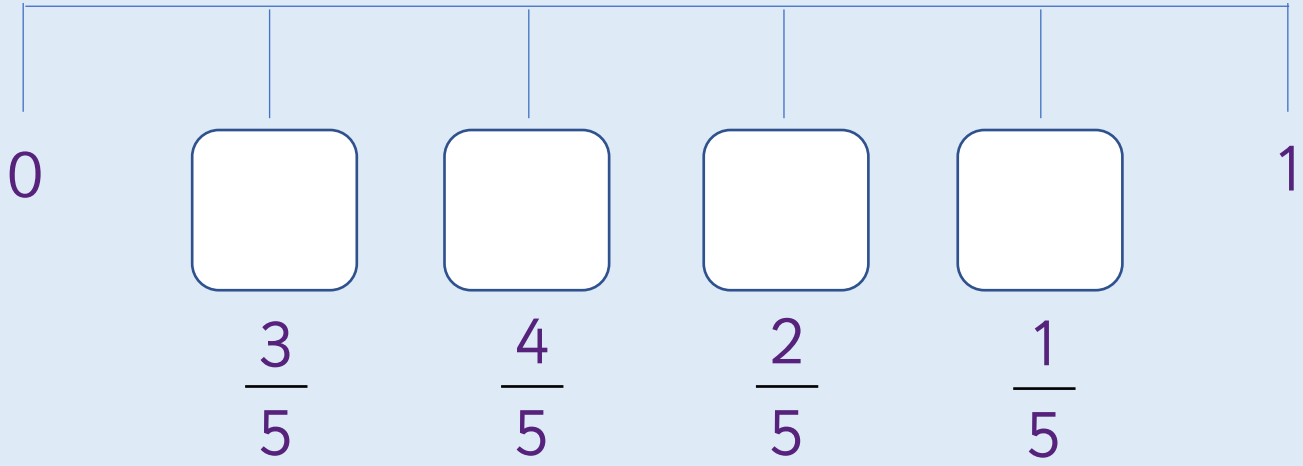
When the numerators are the same, the larger the denominator, the smaller the fraction.

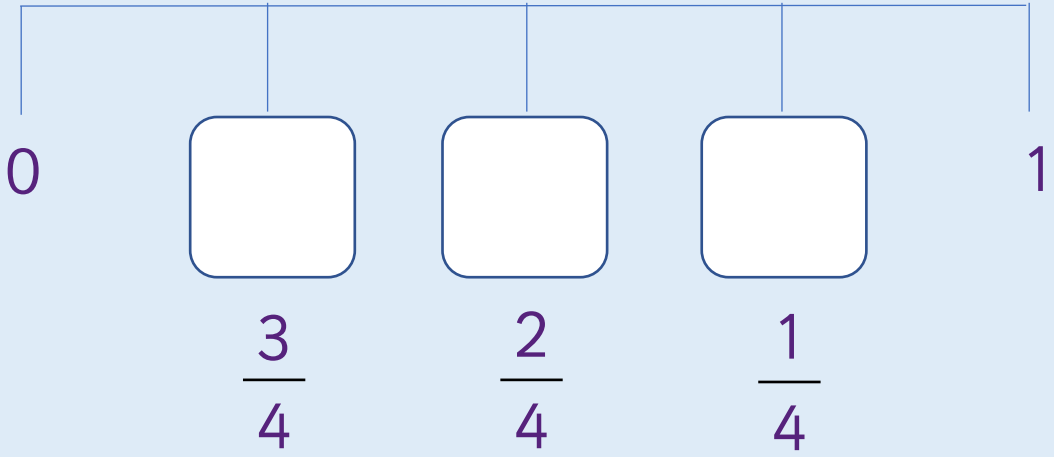
Ascending order: $\frac{1}{6}$ $\frac{1}{5}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$

Descending order: $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{6}$

Activity 2 Order Fractions

Place the fractions on the number line.





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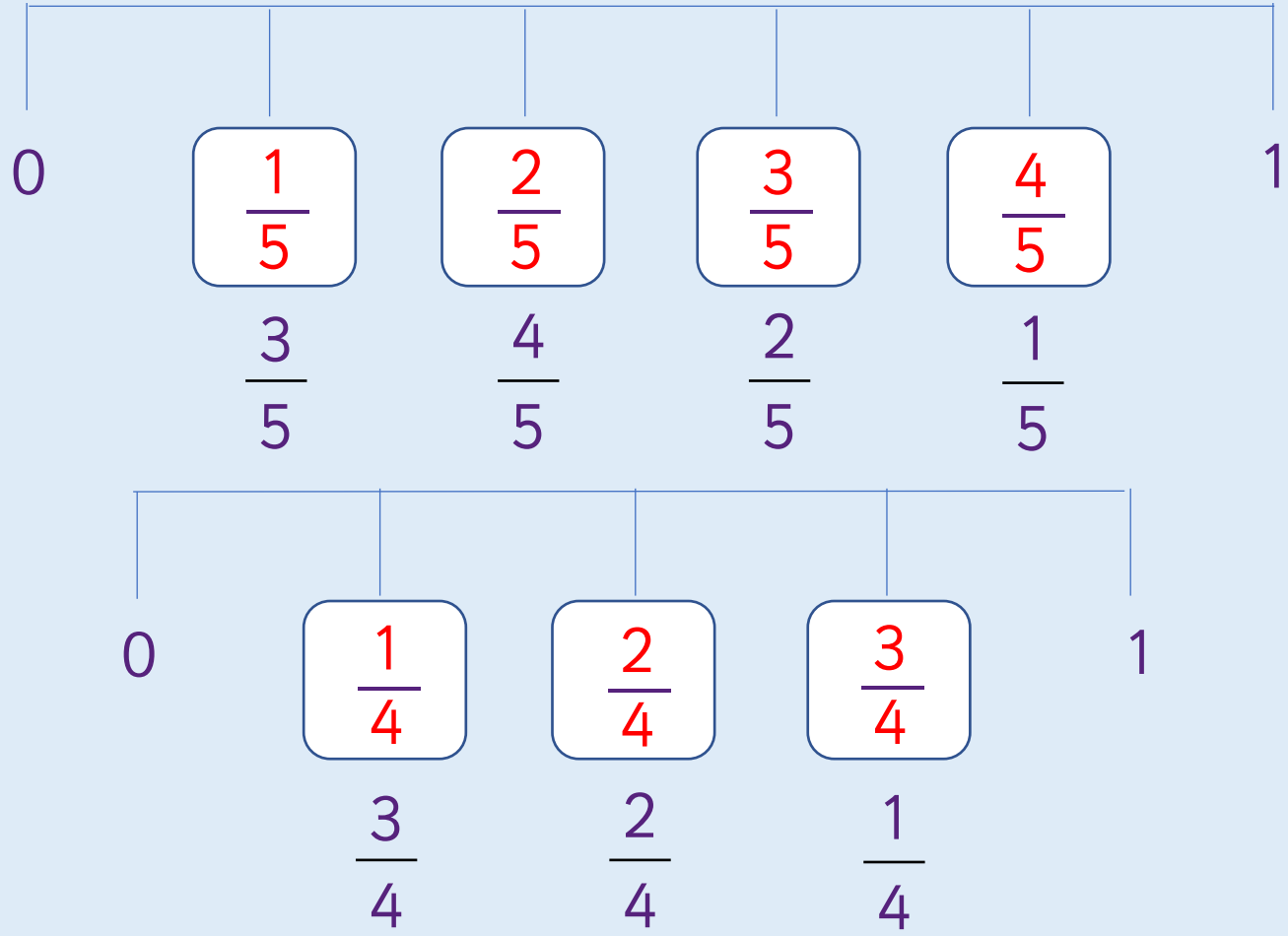


Activity 3 Order Fractions

Order the fractions in descending order.

$\frac{3}{6}$	$\frac{1}{6}$	$\frac{2}{6}$	$\frac{4}{6}$	$\frac{6}{6}$	$\frac{5}{6}$

Activity 3 Order Fractions

Order the fractions in descending order.

$\frac{3}{6}$ $\frac{1}{6}$ $\frac{2}{6}$ $\frac{4}{6}$ $\frac{6}{6}$ $\frac{5}{6}$

$\frac{6}{6}$ $\frac{5}{6}$ $\frac{4}{6}$ $\frac{3}{6}$ $\frac{2}{6}$ $\frac{1}{6}$

Activity 4 Order Fractions

Order the fractions in ascending order.

$\frac{1}{4}$	$\frac{1}{6}$	$\frac{1}{8}$	$\frac{1}{2}$	$\frac{1}{5}$	$\frac{1}{3}$

Activity 4 Order Fractions

Order the fractions in ascending order.

$\frac{1}{4}$ $\frac{1}{6}$ $\frac{1}{8}$ $\frac{1}{2}$ $\frac{1}{5}$ $\frac{1}{3}$

$\frac{1}{8}$ $\frac{1}{6}$ $\frac{1}{5}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$

Reasoning 1 Order Fractions

Do you agree with this statement?

Leanna

When the numerators are the same, the smaller the denominator, the smaller the fraction.

Is Leanna correct?
Why do you think so?

Reasoning 1 Order Fractions

Do you agree with this statement?

Leanna

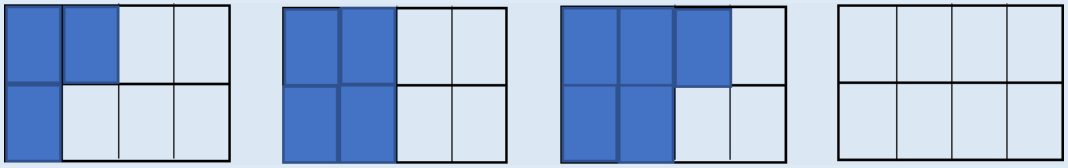
When the numerators are the same, the smaller the denominator, the smaller the fraction.

Leanna is incorrect.
When the numerators are the same, the smaller the denominator, the larger the fraction.

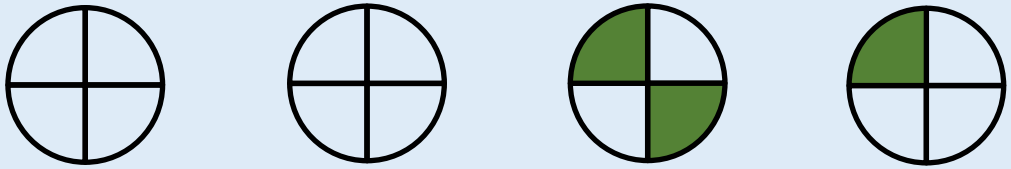
Reasoning 2 Order Fractions

Shade each blank diagram so the fractions are ordered correctly.

Fractions in ascending order



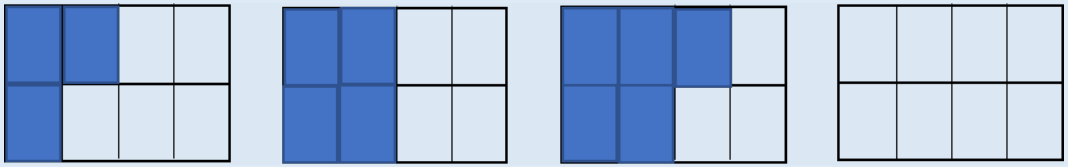
Fractions in descending order



Reasoning 2 Order Fractions

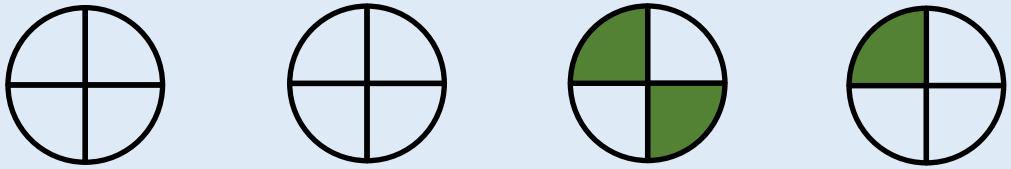
Shade each blank diagram so the fractions are ordered correctly.

Fractions in ascending order



Either six, seven or eight parts shaded

Fractions in descending order



Shade all parts

Three parts shaded

Discuss

Order Fractions

How many equal parts has the whole been divided into?

How many equal parts need shading?

Which is the largest fraction?
Which is the smallest fraction?

Which fractions are the hardest to make as paper strips?
Why do you think they are harder to make?

Add Fractions

3

Fluency & Reasoning Teaching Slides

Activity 1 Add Fractions

Using a piece of paper.

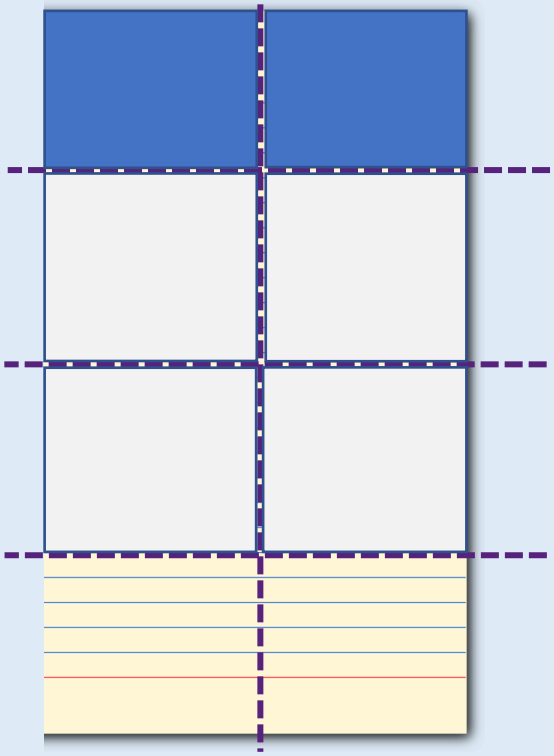
Fold your paper to split it into eight equal parts. Colour two parts blue and four parts white.

Use your model to complete the statements.

____ eighths are blue.
Four ____ are white.
Six eighths are coloured in.

Activity 1 Add Fractions

Using a piece of paper.



$\frac{2}{8}$

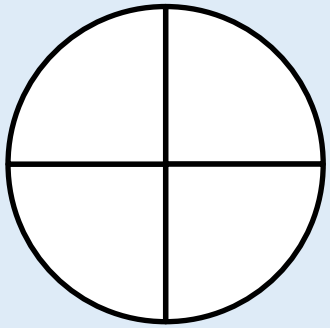
$\frac{4}{8}$

$$\frac{2}{8} + \frac{4}{8} = \frac{6}{8}$$

Two eighths are blue.
Four eighths are white.
Six eighths are coloured in.

Activity 2 Add Fractions

Use a paper circle split into four equal parts.



Colour one part red and two parts blue.
Use this to complete the sentences.

$\frac{\square}{4} + \frac{\square}{4} = \frac{\square}{4}$

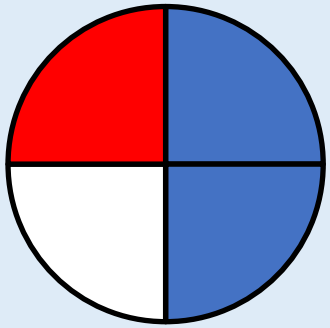
_____ quarter(s) is/are red.

_____ quarter(s) is/are blue.

_____ quarters are coloured in.

Activity 2 Add Fractions

Use a paper circle split into four equal parts.



Colour one part red and two parts blue.
Use this to complete the sentences.

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

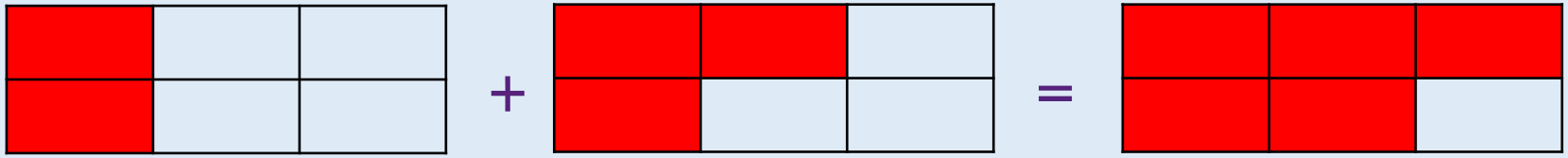
One quarter(s) is/are red.

Two quarter(s) is/are blue.

Three quarters are coloured in.

Activity 3 Add Fractions

Using diagrams



The diagram above shows: $\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$

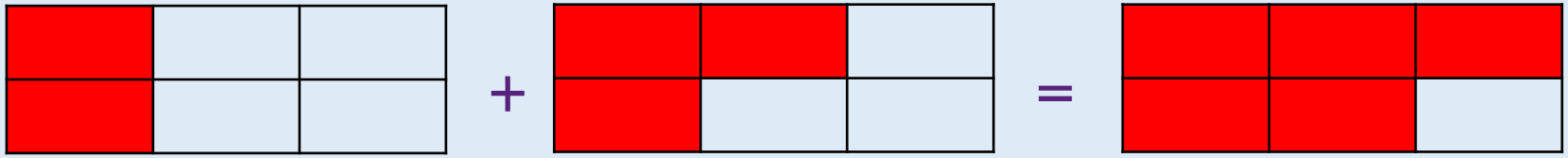
Draw your own models to calculate the following:

$$\frac{2}{8} + \frac{3}{8} + \frac{2}{8} = \square$$

$$\frac{2}{6} + \frac{1}{6} = \frac{\square}{6} \qquad \frac{4}{9} + \frac{\square}{\square} = \frac{5}{9} \qquad \frac{4}{10} + \frac{\square}{\square} = \frac{7}{10}$$

Activity 3 Add Fractions

Using diagrams



The diagram above shows: $\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$

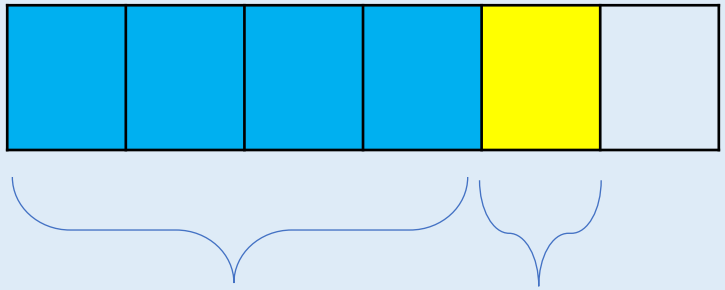
Draw your own models to calculate the following:

$\frac{2}{8} + \frac{3}{8} + \frac{2}{8} = \frac{7}{8}$

$\frac{2}{6} + \frac{1}{6} = \frac{3}{6}$ | $\frac{4}{9} + \frac{1}{9} = \frac{5}{9}$ | $\frac{4}{10} + \frac{3}{10} = \frac{7}{10}$

Activity 3 Add Fractions

Using diagrams

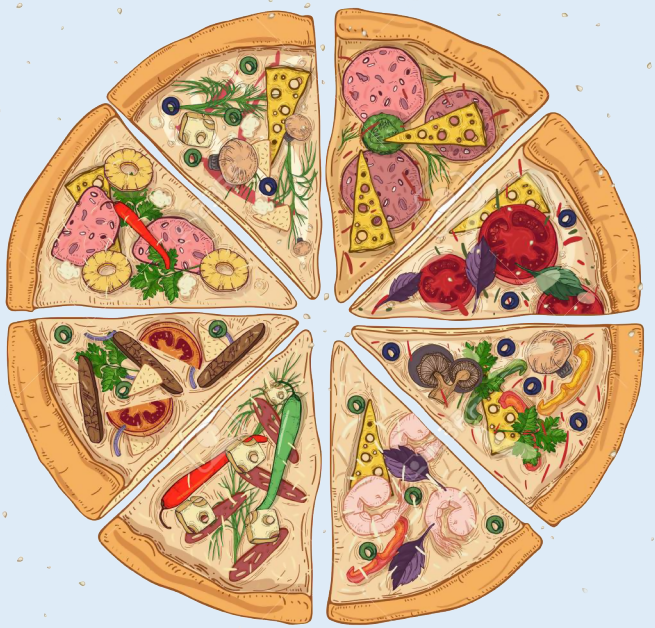


Four sixths are blue.
One sixth is yellow.
Five sixths are coloured in.

$$\frac{4}{6} + \frac{1}{6} = \frac{5}{6}$$

Activity 4 Add Fractions

Work out the problem.



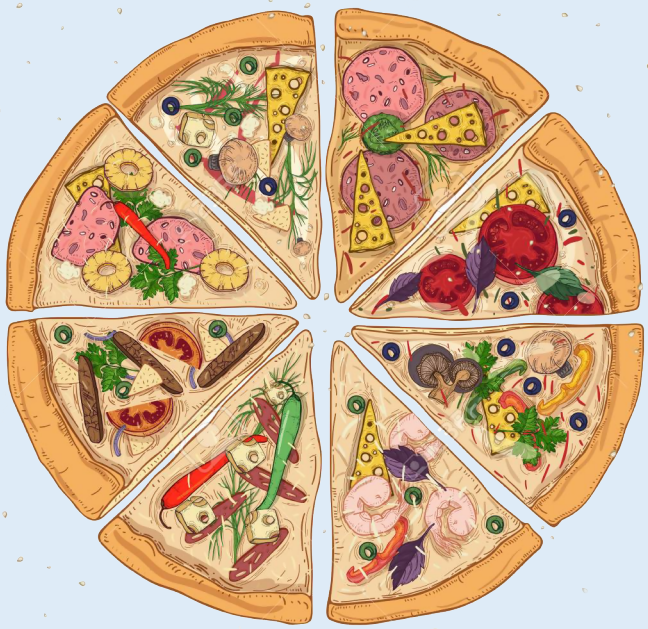
Rosie eats $\frac{3}{8}$ of the pizza and

Esin eats $\frac{1}{8}$ of the pizza

What fraction of the pizza do they eat altogether?

Activity 4 Add Fractions

Work out the problem.



Rosie eats $\frac{3}{8}$ of the pizza and

Esin eats $\frac{1}{8}$ of the pizza

$$\frac{3}{8} + \frac{1}{8} = \frac{4}{8}$$

Reasoning 1 Add Fractions

Rosie and Tia are solving:

$$\frac{5}{4} + \frac{2}{4}$$

Rosie

The answer is $\frac{7}{8}$

The answer is $\frac{7}{4}$

Tia

Who do you agree with?

Explain why.

Reasoning 1 Add Fractions

Rosie and Tia are solving:

$$\frac{5}{4} + \frac{2}{4}$$

Rosie

The answer is $\frac{7}{8}$

The answer is $\frac{7}{4}$

Tia

Tia is correct.
Rosie has made the mistake of also adding the denominators.

Reasoning 2 Add Fractions

Malachi and Esin are sharing this jar of bubblegum balls.

$$\frac{\square}{\square} + \frac{\square}{\square} = \frac{12}{12}$$

Malachi

They both eat an odd number of balls. Complete the number statement above to show what fraction of the bubblegum balls they each could have eaten.

Esin

Reasoning 2 Add Fractions

Malachi and Esin are sharing this jar of bubblegum balls.

$$\frac{\square}{\square} + \frac{\square}{\square} = \frac{12}{12}$$

Malachi

There are three possible answers:

$$\frac{1}{12} + \frac{11}{12}$$

$$\frac{7}{12} + \frac{5}{12}$$

$$\frac{9}{12} + \frac{3}{12}$$

Esin

Discuss Add Fractions

Using your paper circles, show me what $\frac{\square}{4} + \frac{\square}{4}$ is equal to.

How many quarters in total do I have?

How many parts is the whole divided into?

How many parts am I adding?

What do you notice about the numerators?

What do you notice about the denominators?

Subtract Fractions

3

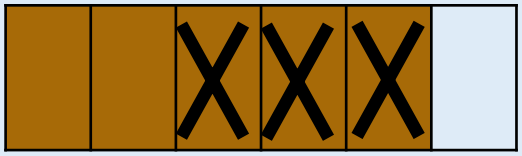
Fluency & Reasoning Teaching Slides

Activity 1 Subtract Fractions

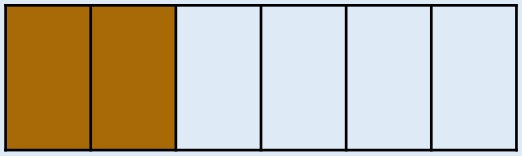
Malachi is eating a chocolate bar.
Fill in the missing information.

First

Then



Now



$$\frac{\square}{\square} \qquad \frac{\square}{\square} - \frac{\square}{\square} \qquad \frac{\square}{\square} - \frac{\square}{\square} = \frac{\square}{\square}$$

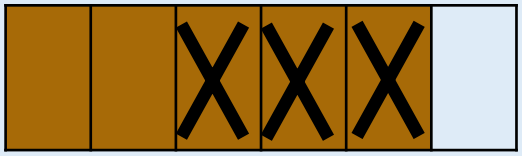
Activity 1 Subtract Fractions

Malachi is eating a chocolate bar.
Fill in the missing information.

First

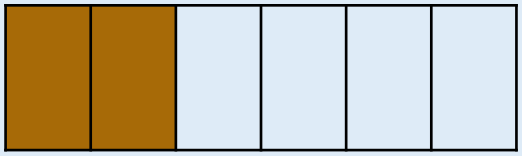
$\frac{5}{6}$

Then



$\frac{5}{6} - \frac{3}{6}$

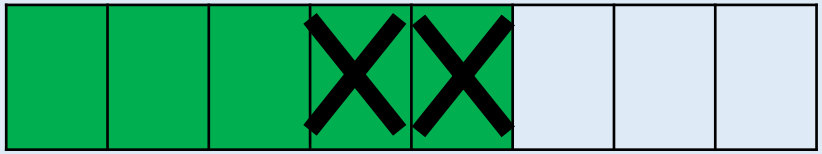
Now



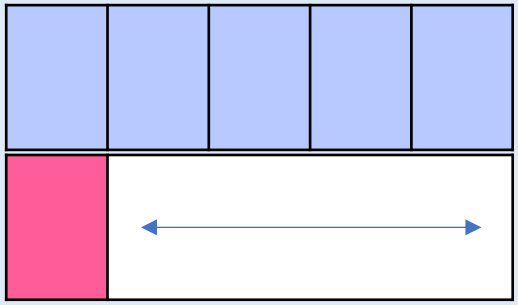
$\frac{5}{6} - \frac{3}{6} = \frac{2}{6}$

Activity 2 Subtract Fractions

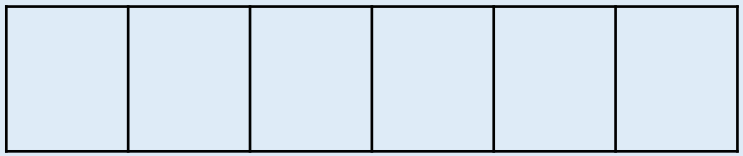
Use the models to help you subtract the fractions.



$$\frac{5}{8} - \frac{\quad}{8} = \frac{\quad}{8}$$



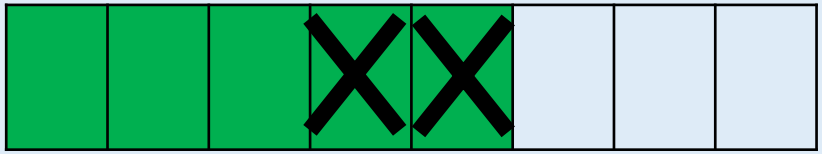
$$\frac{5}{10} - \frac{\quad}{10} = \frac{\quad}{10}$$



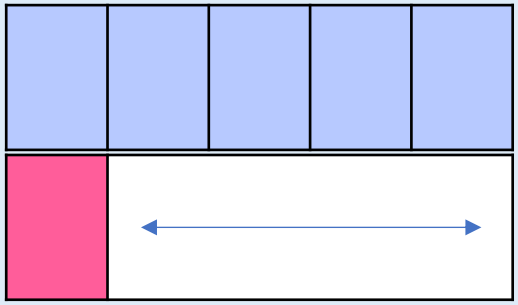
$$\frac{\quad}{6} - \frac{\quad}{6} = \frac{2}{6}$$

Activity 2 Subtract Fractions

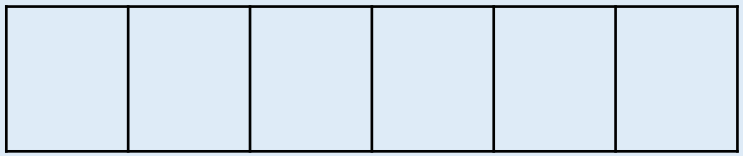
Use the models to help you subtract the fractions.



$$\frac{5}{8} - \frac{2}{8} = \frac{3}{8}$$



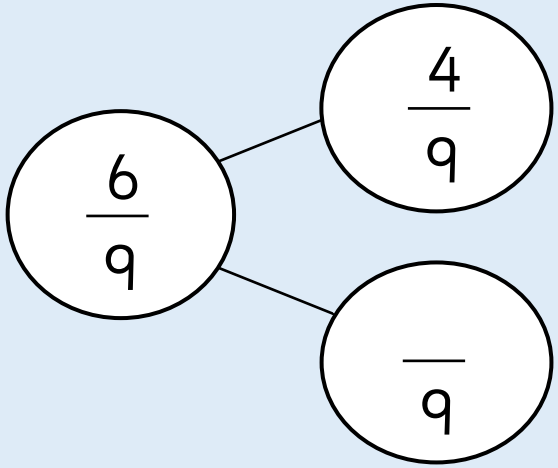
$$\frac{5}{10} - \frac{1}{10} = \frac{4}{10}$$

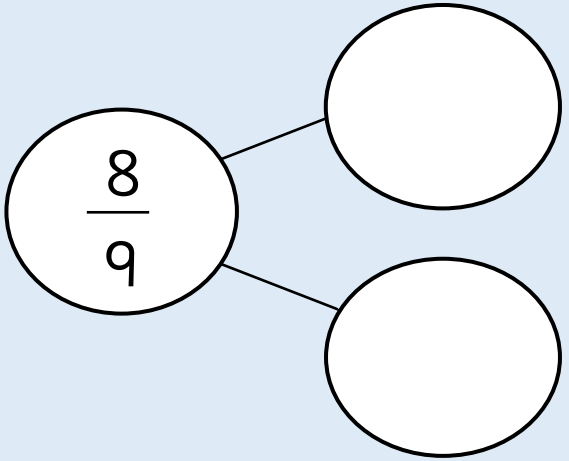


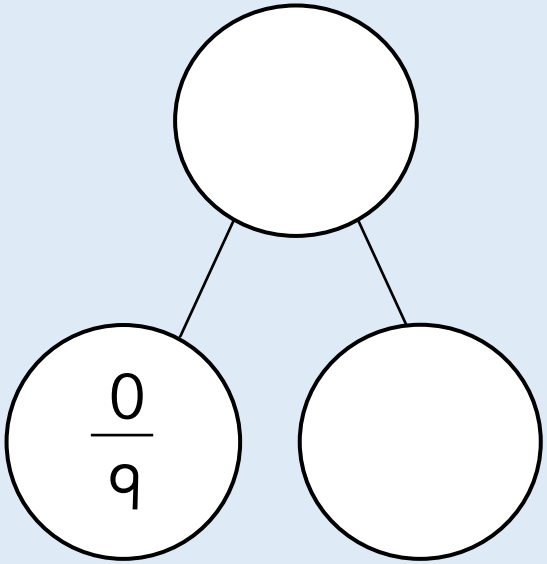
$$\frac{4}{6} - \frac{2}{6} = \frac{2}{6}$$

Activity 3 Subtract Fractions

Complete the part-whole models.

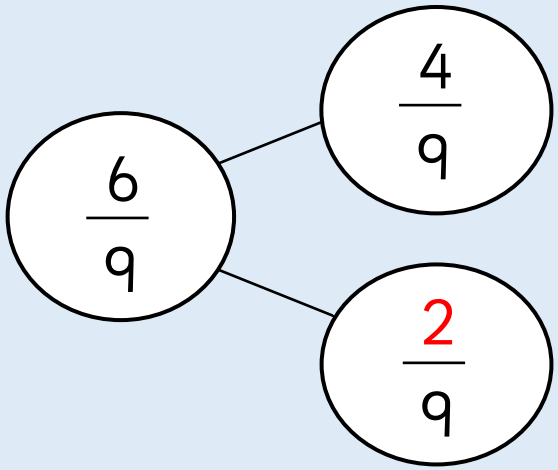


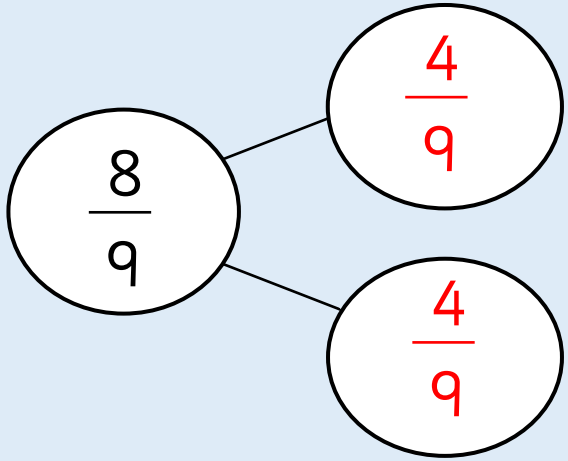


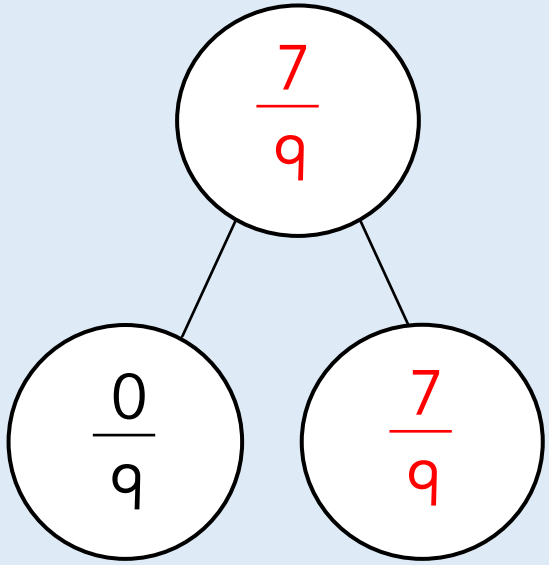


Activity 3 Subtract Fractions

Complete the part-whole models.







Reasoning 1 Subtract Fractions

Complete the missing fractions.

$$\frac{8}{6} - \frac{2}{6} = \frac{\square}{6} + \frac{3}{6}$$

$$\frac{6}{4} - \frac{\square}{4} = \frac{5}{4} - \frac{1}{4}$$

Reasoning 1 Subtract Fractions

Complete the missing fractions.

$$\frac{8}{6} - \frac{2}{6} = \frac{\boxed{3}}{6} + \frac{3}{6}$$

$$\frac{6}{4} - \frac{\boxed{2}}{4} = \frac{5}{4} - \frac{1}{4}$$

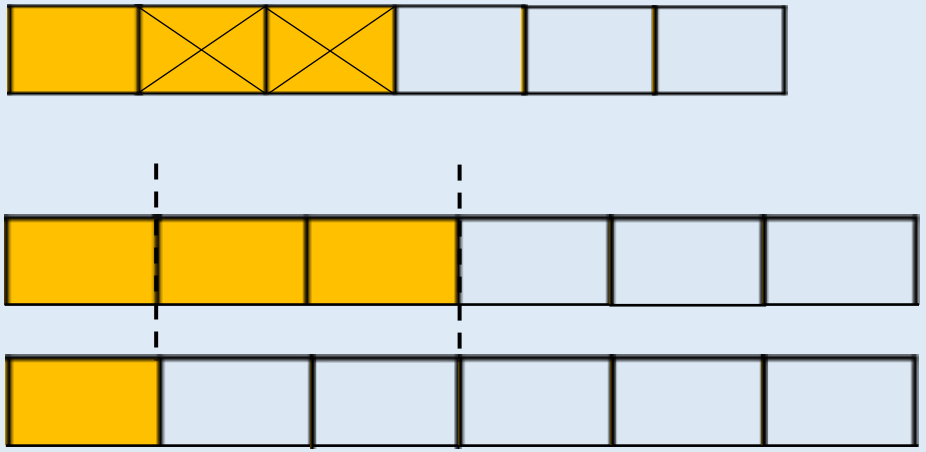
Reasoning 2 Subtract Fractions

Zach and Leanna are solving:

$$\frac{3}{6} - \frac{2}{6}$$

Zach

Leanna



They both say the answer is one sixth. Can you explain how they have found their answers?

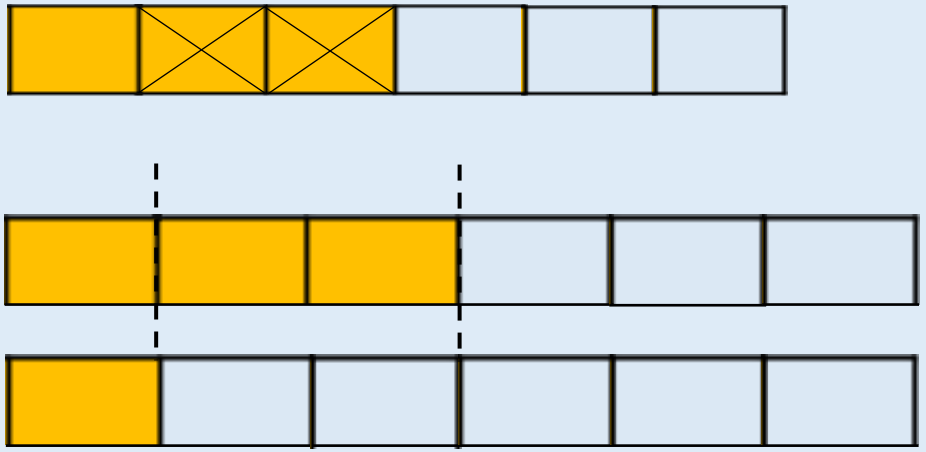
Reasoning 2 Subtract Fractions

Zach and Leanna are solving:

$$\frac{3}{6} - \frac{2}{6}$$

Zach

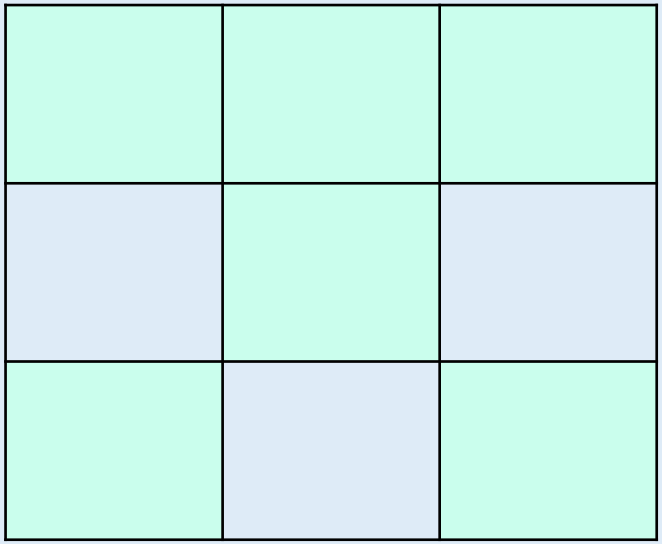
Leanna



Zach has taken two sixths away. Leanna has found the difference between three sixths and two sixths.

Reasoning 3 Subtract Fractions

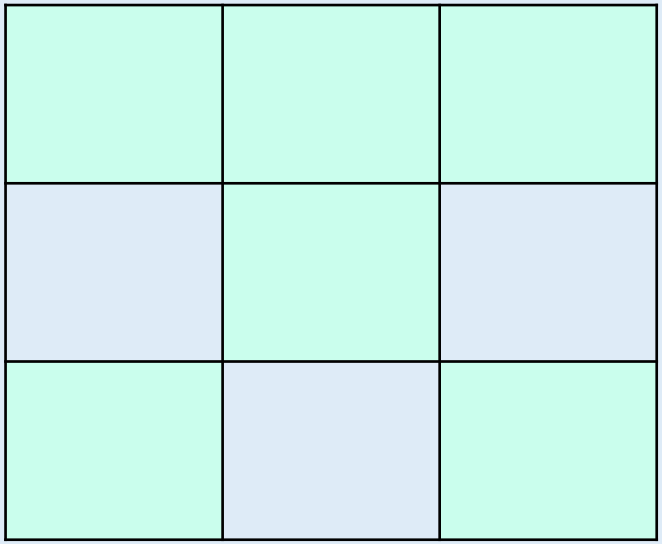
How many calculations showing addition and subtraction of fractions can you make from this model?



Reasoning 3 Subtract Fractions

How many calculations showing addition and subtraction of fractions can you make from this model?

There are a lot of calculations you could make, including calculations where there are more than two fractions.



e.g.

$$\frac{3}{9} + \frac{3}{9} = \frac{6}{9}$$

Discuss Subtract Fractions

What fraction is shown first? Then what happens? Now what is left? Can we represent this in a number story?

Which models show take away? Which models show finding the difference? What's the same? What's different? Can we represent these models in a number story?

Can you partition $\frac{9}{11}$ in a different way?