Spring Scheme of Learning

Year 3/4

#MathsEveryoneCan

2019-20
How to use the mixed-age SOL

In this document, you will find suggestions of how you may structure a progression in learning for a mixed-age class.

Firstly, we have created a yearly overview.

<table>
<thead>
<tr>
<th>Autumn</th>
<th>Spring</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Number: Place Value</td>
<td>Number: Multiplication and Division</td>
</tr>
<tr>
<td>Week 2</td>
<td>Number: Addition and Subtraction</td>
<td>Measurement: Length, Perimeter and Area</td>
</tr>
<tr>
<td>Week 3</td>
<td>Number: Multiplication and Division</td>
<td>Number: Fractions</td>
</tr>
<tr>
<td>Week 4</td>
<td>Year 3: Measurement: Mass and Capacity</td>
<td>Year 4: Number: Decimals</td>
</tr>
<tr>
<td>Week 5</td>
<td>Number 1: Year 1 and Year 2 Fractions</td>
<td>Year 2: Geometry: Properties of Shape (including Y4 Position and Direction)</td>
</tr>
<tr>
<td>Week 6</td>
<td>Year 1: Number 1: Year 1 and Year 2 Fractions</td>
<td>Year 1: Year 2 Statistics</td>
</tr>
<tr>
<td>Week 7</td>
<td>Year 1: Year 2 Fractions</td>
<td>Year 1: Year 2 Measurement: Time</td>
</tr>
<tr>
<td>Week 8</td>
<td>Year 1: Year 2 Fractions</td>
<td>Year 1: Year 2 Statistics</td>
</tr>
<tr>
<td>Week 9</td>
<td>Year 1: Year 2 Fractions</td>
<td>Year 1: Year 2 Geometry: Properties of Shape (including Y4 Position and Direction)</td>
</tr>
<tr>
<td>Week 10</td>
<td>Year 1: Year 2 Fractions</td>
<td>Year 1: Year 2 Statistics</td>
</tr>
<tr>
<td>Week 11</td>
<td>Year 1: Year 2 Fractions</td>
<td>Year 1: Year 2 Measurement: Time</td>
</tr>
<tr>
<td>Week 12</td>
<td>Year 1: Year 2 Fractions</td>
<td>Year 1: Year 2 Statistics</td>
</tr>
</tbody>
</table>

For each block of learning, we have grouped the small steps into themes that have similar content. Within these themes, we list the corresponding small steps from one or both year groups. Teachers can then use the single-age schemes to access the guidance on each small step listed within each theme.

The themes are organised into common content (above the line) and year specific content (below the line). Moving from left to right, the arrows on the line suggest the order to teach the themes.
Notes and Guidance

How to use the mixed-age SOL

Here is an example of one of the themes from the Year 1/2 mixed-age guidance.

<table>
<thead>
<tr>
<th>Subtraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 (Aut B2, Spr B1)</td>
</tr>
<tr>
<td>* How many left? (1)</td>
</tr>
<tr>
<td>* How many left? (2)</td>
</tr>
<tr>
<td>* Counting back</td>
</tr>
<tr>
<td>* Subtraction - not crossing 10</td>
</tr>
<tr>
<td>* Subtraction - crossing 10 (1)</td>
</tr>
<tr>
<td>* Subtraction - crossing 10 (2)</td>
</tr>
<tr>
<td>Year 2 (Aut B2, B3)</td>
</tr>
<tr>
<td>* Subtract 1-digit from 2-digits</td>
</tr>
<tr>
<td>* Subtract with 2-digits (1)</td>
</tr>
<tr>
<td>* Subtract with 2-digits (2)</td>
</tr>
<tr>
<td>* Find change - money</td>
</tr>
</tbody>
</table>

In order to create a more coherent journey for mixed-age classes, we have re-ordered some of the single-age steps and combined some blocks of learning e.g. Money is covered within Addition and Subtraction.

The bullet points are the names of the small steps from the single-age SOL. We have referenced where the steps are from at the top of each theme e.g. Aut B2 means Autumn term, Block 2. Teachers will need to access both of the single-age SOLs from our website together with this mixed-age guidance in order to plan their learning.

Points to consider

- Use the mixed-age schemes to see where similar skills from both year groups can be taught together. Learning can then be differentiated through the questions on the single-age small steps so both year groups are focusing on their year group content.
- When there is year group specific content, consider teaching in split inputs to classes. This will depend on support in class and may need to be done through focus groups.
- On each of the block overview pages, we have described the key learning in each block and have given suggestions as to how the themes could be approached for each year group.
- We are fully aware that every class is different and the logistics of mixed-age classes can be tricky. We hope that our mixed-age SOL can help teachers to start to draw learning together.
<table>
<thead>
<tr>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
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</thead>
<tbody>
<tr>
<td>Autumn</td>
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<tr>
<td>Number: Place Value</td>
<td>Number: Addition and Subtraction</td>
<td>Number: Multiplication and Division</td>
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<td>Spring</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number: Multiplication and Division</td>
<td>Measurement: Length, Perimeter and Area</td>
<td>Number: Fractions</td>
<td>Y3: Measurement: Mass and Capacity</td>
<td></td>
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<td>Y4: Number: Decimals</td>
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<td>Summer</td>
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<td></td>
<td></td>
<td>September</td>
<td></td>
</tr>
<tr>
<td>Number: Decimals (including Money)</td>
<td>Measurement: Time</td>
<td>Statistics</td>
<td>Geometry: Properties of Shape (including Y4 Position and Direction)</td>
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<td></td>
<td>Consolidation</td>
<td></td>
</tr>
</tbody>
</table>

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In this section, content from single-age blocks are matched together to show teachers where there are clear links across the year groups. Teachers may decide to teach the lower year’s content to the whole class before moving the higher year on to their age-related expectations. The lower year group is not expected to cover the higher year group’s content as they should focus on their own age-related expectations.

In this section, content that is discrete to one year group is outlined. Teachers may need to consider a split input with lessons or working with children in focus groups to ensure they have full coverage of their year’s curriculum. Guidance is given on each page to support the planning of each block.

The themes should be taught in order from left to right.
Year 3/4 | Spring Term | Week 5 to 8 – Fractions

**Fractions**

**Common Content**

**Recognising Fractions**
- Year 3 (Spr B5)
  - Unit and non-unit fractions
  - Making the whole
  - Fractions on a number line
- Year 4 (Spr B3)
  - What is a fraction?
  - Fractions greater than 1
  - Count in fractions

**Equivalent Fractions**
- Year 3 (Sum B1)
  - Equivalent fractions (1)
  - Equivalent fractions (2)
  - Equivalent fractions (3)
- Year 4 (Spr B3)
  - Equivalent fractions (1)
  - Equivalent fractions (2)

**Fractions of an Amount**
- Year 3 (Spr B5)
  - Fractions of an amount (1)
  - Fractions of an amount (2)
  - Fractions of an amount (3)
- Year 4 (Spr B3)
  - Calculate fractions of a quantity
  - Problem solving - calculate quantities

**Add & Subtract**
- Year 3 (Sum B1)
  - Add fractions
  - Subtract fractions
- Year 4 (Spr B3)
  - Add 2 or more fractions
  - Subtract 2 fractions
  - Subtract from whole amounts

**Compare & Order**
- Year 3 (Sum B1)
  - Compare fractions
  - Order fractions

In this block, there is a great deal of common content, which gives teachers many opportunities to teach the class as a whole.

Year 4 move to working with fractions greater than 1 and use bar models to support their understanding including when they add fractions where the total is greater than 1.
Block 3 - Fractions

Theme 1 - Recognising Fractions
Unit and Non-unit Fractions

Notes and Guidance

Children recap their understanding of unit and non-unit fractions from Year 2. They explain the similarities and differences between unit and non-unit fractions.

Children are introduced to fractions with denominators other than 2, 3 and 4, which they used in Year 2. Ensure children understand what the numerator and denominator represent.

Mathematical Talk

What is a unit fraction?
What is a non-unit fraction?

Show me \( \frac{1}{2} \), \( \frac{1}{3} \), \( \frac{1}{4} \), \( \frac{1}{5} \). What’s the same? What’s different?

What fraction is shaded? What fraction is not shaded?

What is the same about the fractions? What is different?

Varied Fluency

Complete the sentences to describe the images.

___ out of ___ equal parts are shaded.

of the shape is shaded.

Shade \( \frac{1}{5} \) of the circle. Shade \( \frac{3}{5} \) of the circle.

Circle \( \frac{1}{5} \) of the beanbags. Circle \( \frac{3}{5} \) of the beanbags.

What’s the same and what’s different about \( \frac{1}{5} \) and \( \frac{3}{5} \)?

Complete the sentences.

A unit fraction always has a numerator of ____
A non-unit fraction has a numerator that is _____ than ____
An example of a unit fraction is ____
An example of a non-unit fraction is ____

Can you draw a unit fraction and a non-unit fraction with the same denominator?
Unit and Non-unit Fractions

Reasoning and Problem Solving

True or False?

False, one quarter is shaded. Ensure when counting the parts of the whole that children also count the shaded part.

\[ \frac{1}{3} \] of the shape is shaded.

Sort the fractions into the table.

<table>
<thead>
<tr>
<th>Unit fractions</th>
<th>Fractions equal to one whole</th>
<th>Fractions less than one whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-unit fractions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Are there any boxes in the table empty? Why?

<table>
<thead>
<tr>
<th>[ \frac{3}{4} ]</th>
<th>[ \frac{3}{5} ]</th>
<th>[ \frac{1}{3} ]</th>
<th>[ \frac{1}{4} ]</th>
<th>[ \frac{2}{2} ]</th>
<th>[ \frac{4}{4} ]</th>
<th>[ \frac{2}{5} ]</th>
<th>[ \frac{1}{2} ]</th>
</tr>
</thead>
</table>

Top left: Empty
Top right: \[ \frac{1}{3}, \frac{1}{4} \] and \[ \frac{1}{2} \]
Bottom left: \[ \frac{2}{2} \] and \[ \frac{4}{4} \]
Bottom right: \[ \frac{3}{4}, \frac{3}{5} \] and \[ \frac{2}{5} \]

There are no unit fractions that are equal to one whole other than \[ \frac{1}{1} \] but this isn’t in our list.
Making the Whole

Notes and Guidance

Children look at whole shapes and quantities and see that when a fraction is equivalent to a whole, the numerator and denominator are the same.

Building on using part-whole model with whole numbers, children use the models to partition the whole into fractional parts.

Mathematical Talk

Is a fraction always less than one?

When the fraction is equivalent to one, what do you notice about the numerator and denominator?

In the counter activity, what’s the same about the part-whole models? What’s different?

Varied Fluency

Complete the missing information.

1 whole is the same as

Complete the sentences to describe the apples.

of the apples are red.

of the apples are green.

and make one whole

Use 8 double sided counters.

Drop the counters on to the table, what fraction of the counters are red? What fraction of the counters are yellow? What fraction represents the whole group of counters?

Complete part-whole models to show your findings.
Teddy says,

I have one pizza cut into 6 equal pieces. I have eaten \( \frac{6}{6} \) of the pizza.

Does Teddy have any pizza left? Explain your answer.

**Complete the sentence.**

When a fraction is equal to a whole, the numerator and the denominator are ________________

Use pictures to prove your answer.

No because \( \frac{6}{6} \) is equal to one whole, so Ted has eaten all of his pizza.

Can you complete Rosie's bar models?

Rosie is drawing bar models to represent a whole. She has drawn a fraction of each of her bars.
Fractions on a Number Line

Notes and Guidance

Children use a number line to represent fractions beyond one whole. They count forwards and backwards in fractions.

Children need to know how to divide a number line into specific fractions i.e. when dividing into quarters, we need to ensure our number line is divided into four equal parts.

Mathematical Talk

How many equal parts has the number line been divided into?

What does each interval represent?

How are the bar model and the number line the same? How are they different?

How do we know where to place \( \frac{1}{5} \) on the number line?

How do we label fractions larger than one.

Varied Fluency

Show \( \frac{1}{5} \) on the number line. Use the bar model to help you.

The number line has been divided into equal parts. Label each part correctly.

Divide the number line into eighths. Can you continue the number line up to 2?
Eva has drawn a number line.

Tommy says it is incorrect. Do you agree with Tommy? Explain why.

Can you draw the next three fractions?

Tommy is correct because Eva has missed 1 whole out.

Alex and Jack are counting up and down in thirds.

Alex starts at $5 \frac{1}{3}$ and counts backwards.

Jack starts at $3 \frac{1}{3}$ and counts forwards.

What fraction will they get to at the same time?

They will reach $4 \frac{1}{3}$.
Year 4 | Spring Term | Week 5 to 8 – Number: Fractions

What is a Fraction?

Notes and Guidance

Children explore fractions in different representations, for example, fractions of shapes, quantities and fractions on a number line.

They explore and recap the meaning of numerator and denominator, non-unit and unit fractions.

Mathematical Talk

How can we sort the fraction cards?
What fraction does each one represent?
Could some cards represent more than one fraction?
Is \( \frac{15}{3} \) an example of a non-unit fraction? Why?
Using Cuisenaire, how many white rods are equal to an orange rod? How does this help us work out what fraction the white rod represents?

Varied Fluency

Here are 9 cards.
Sort the cards into different groups.
Can you explain how you made your decision?
Can you sort the cards in a different way?
Can you explain how your partner has sorted the cards?

Complete the Frayer model to describe a unit fraction.

Can you use the model to describe the following terms?

<table>
<thead>
<tr>
<th>Definition</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-unit</td>
<td>numerator</td>
</tr>
<tr>
<td>fraction</td>
<td>denominator</td>
</tr>
</tbody>
</table>

Use Cuisenaire rods.
If the orange rod is one whole, what fraction is represented by:
- The white rod
- The red rod
- The yellow rod
- The brown rod

Choose a different rod to represent one whole; what do the other rods represent now?
Always, Sometimes, Never?

Alex says,

If I split a shape into 4 parts, I have split it into quarters.

Sometimes

If the shape is not split equally, it will not be in quarters.

Which representations of \( \frac{4}{5} \) are incorrect?

The image of the dogs could represent \( \frac{2}{5} \) or \( \frac{3}{5} \).

The bar model is not divided into equal parts so this does not represent \( \frac{4}{5} \).
Fractions Greater than 1

Notes and Guidance

Children use manipulatives and diagrams to show that a fraction can be split into wholes and parts.

Children focus on how many equal parts make a whole dependent on the number of equal parts altogether. This learning will lead on to Year 5 where children learn about improper fractions and mixed numbers.

Mathematical Talk

How many ____ make a whole?

If I have ____ eighths, how many more do I need to make a whole?

What do you notice about the numerator and denominator when a fraction is equivalent to a whole?

Varied Fluency

- Complete the part-whole models and sentences.

There are ____ quarters altogether.

____ quarters = ____ whole and ____ quarter.

Write sentences to describe these part-whole models.

- Complete. You may use part-whole models to help you.

\[
\frac{10}{3} = \frac{9}{3} + \square = \square \frac{3}{3}
\]

\[
\frac{6}{3} + \frac{2}{3} = \square \frac{2}{3}
\]

\[
\frac{16}{8} + \frac{3}{8} = \square \frac{8}{8}
\]
3 friends share some pizzas. Each pizza is cut into 8 equal slices. Altogether, they eat 25 slices. How many whole pizzas do they eat?

They eat 3 whole pizzas and 1 more slice.

Rosie says, \(\frac{16}{4}\) is greater than \(\frac{8}{2}\) because 16 is greater than 8.

Do you agree?

I disagree with Rosie because both fractions are equivalent to 4.

Children may choose to build both fractions using cubes, or draw bar models.

\[\frac{13}{5} = 10 \text{ wholes and 3 fifths}\]
Children explore fractions greater than one on a number line and start to make connections between improper and mixed numbers.

They use cubes and bar models to represent fractions greater than a whole. This will support children when adding and subtracting fractions greater than a whole.

How many ____ make a whole?

Can you write the missing fractions in more than one way?

Are the fractions ascending or descending?

---

**Notes and Guidance**

Children explore fractions greater than one on a number line and start to make connections between improper and mixed numbers.

They use cubes and bar models to represent fractions greater than a whole. This will support children when adding and subtracting fractions greater than a whole.

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**Mathematical Talk**

How many ____ make a whole?

Can you write the missing fractions in more than one way?

Are the fractions ascending or descending?

---

**Varied Fluency**

- Complete the number line.
- Draw bar models to represent each fraction.
- Fill in the blanks using cubes or bar models to help you.
- Write the next two fractions in each sequence.

**Examples**

- a) \( \frac{12}{7}, \frac{11}{7}, \frac{10}{7}, \bigg( \bigg), \bigg( \bigg) \)
- b) \( 3 \frac{1}{3}, 3, 2 \frac{2}{3}, \bigg( \bigg), \bigg( \bigg) \)
- c) \( \frac{4}{11}, \frac{6}{11}, \frac{8}{11}, \bigg( \bigg), \bigg( \bigg) \)
- d) \( 12 \frac{3}{5}, 13 \frac{1}{5}, 13 \frac{4}{5}, \bigg( \bigg), \bigg( \bigg) \)
Here is a number sequence.

\[
\frac{5}{12}, \frac{7}{12}, \frac{10}{12}, \frac{14}{12}, \frac{19}{12}, \ldots
\]

Which fraction would come next?
Can you write the fraction in more than one way?

The fractions are increasing by one more twelfth each time. The next fraction would be \(\frac{25}{12}\).

Circle and correct the mistakes in the sequences.

\[
\frac{5}{12}, \frac{8}{12}, \frac{11}{12}, \frac{15}{12}, \frac{17}{12}, \frac{9}{10}, \frac{7}{10}, \frac{6}{10}, \frac{3}{10}, \frac{1}{10}
\]

Play the fraction game for four players.
Place the four fraction cards on the floor. Each player stands in front of a fraction. We are going to count up in tenths starting at 0.
When you say a fraction, place your foot on your fraction.

How can we make 4 tenths?
What is the highest fraction we can count to?
How about if we used two feet?

2 children can make four tenths by stepping on one tenth and three tenths at the same time.
Alternatively, one child can make four tenths by stepping on \(\frac{2}{10}\) with 2 feet.
With one foot, they can count up to 11 tenths or one and one tenth.
With two feet they can count up to 22 tenths.
Children begin by using Cuisenaire or number rods to investigate and record equivalent fractions. Children then move on to exploring equivalent fractions through bar models.

Children explore equivalent fractions in pairs and can start to spot patterns.

If the ___ rod is worth 1, 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?

The pink Cuisenaire rod is worth 1 whole. Which rod would be worth $\frac{1}{4}$? Which rods would be worth $\frac{2}{4}$? Which rod would be worth $\frac{1}{2}$?

Use Cuisenaire to find rods to investigate other equivalent fractions.

Use two strips of equal sized paper. Fold one strip into quarters and the other into eighths. Place the quarters on top of the eighths and lift up one quarter, how many eighths can you see? How many eighths are equivalent to one quarter? Which other equivalent fractions can you find?

Using squared paper, investigate equivalent fractions using equal parts. e.g. $\frac{4}{8} = \frac{2}{4}$

Start by drawing a bar 8 squares along. Label each square $\frac{1}{8}$ Underneath compare the same length bar split into four equal parts. What fraction is each part now?
Explain how the diagram shows both \( \frac{2}{3} \) and \( \frac{4}{6} \).

The diagram is divided into six equal parts and four out of the six are yellow. You can also see three columns and two columns are yellow.

Which is the odd one out? Explain why.

This is the odd one out because the other fractions are all equivalent to \( \frac{1}{2} \).

Teddy makes this fraction:

Mo says he can make an equivalent fraction with a denominator of 9.

Dora disagrees. She says it can't have a denominator of 9 because the denominator would need to be double 3.

Who is correct? Who is incorrect? Explain why.

Mo is correct. He could make three ninths which is equivalent to one third.

Dora is incorrect. She has a misconception that you can only double to find equivalent fractions.
Children use Cuisenaire rods and paper strips alongside number lines to deepen their understanding of equivalent fractions.

Encourage children to focus on how the number line can be divided into different amounts of equal parts and how this helps to find equivalent fractions e.g. a number line divided into twelfths can also represent halves, thirds, quarters and sixths.

The number line represents 1 whole, where can we see the fraction? 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?

Use the models on the number line to identify the missing fractions. Which fractions are equivalent?

Complete the missing equivalent fractions.

Place these equivalent fractions on the number line.

Are there any other equivalent fractions you can identify on the number line?
Alex and Tommy are using number lines to explore equivalent fractions.

Alex is correct. Tommy’s top number line isn’t split into equal parts which means he cannot find the correct equivalent fraction.

Who do you agree with? Explain why.

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

- My denominator is 6 and my numerator is half of my denominator.
- I am equivalent to $\frac{4}{12}$
- I am equivalent to one whole
- I am equivalent to $\frac{2}{3}$

Can you write what fraction each shape is worth? Can you record an equivalent fraction for each one?

- Circle
- Triangle
- Square
- Pentagon

Accept other correct equivalences
Equivalent Fractions (3)

Notes and Guidance

Children use proportional reasoning to link pictorial images with abstract methods to find equivalent fractions. They look at the links between equivalent fractions to find missing numerators and denominators. Children look for patterns between the numerators and denominators to support their understanding of why fractions are equivalent e.g. fractions equivalent to a half have a numerator that is half the denominator.

Mathematical Talk

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?

Varied Fluency

Complete the table. Can you spot any patterns?

<table>
<thead>
<tr>
<th>Pictorial representation</th>
<th>Fraction</th>
<th>Words</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Fraction Wall" /></td>
<td>$\frac{6}{8} = \frac{3}{4}$</td>
<td>Six eighths is equivalent to three quarters</td>
</tr>
<tr>
<td><img src="image" alt="Fraction Wall" /></td>
<td>$\frac{1}{3} = \frac{□}{9}$</td>
<td>□ is equivalent to □</td>
</tr>
<tr>
<td><img src="image" alt="Fraction Wall" /></td>
<td>$\frac{□}{4} = \frac{□}{12}$</td>
<td>Three twelfths is equivalent to □ quarters</td>
</tr>
<tr>
<td><img src="image" alt="Fraction Wall" /></td>
<td>$\frac{4}{12} = \frac{□}{□}$</td>
<td>□ is equivalent to □</td>
</tr>
</tbody>
</table>

Use the fraction wall to complete the equivalent fractions.

![Fraction Wall](image)
Always, sometimes, never.

If a fraction is equivalent to one half, the denominator is double the numerator.

Prove it.

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

Always, children could also think of the numerator as being half of the denominator.

Dora has shaded a fraction.

She says, I am thinking of an equivalent fraction to the shaded fraction where the numerator is 9.

Is this possible? Explain why.

This is impossible. Dora may have mistaken the numerator for the denominator and be thinking of \( \frac{6}{9} \) which is equivalent to \( \frac{2}{3} \).
Equivalent Fractions (1)

Notes and Guidance

Children use strip diagrams to investigate and record equivalent fractions.

They start by comparing two fractions before moving on to finding more than one equivalent fraction on a fraction wall.

Mathematical Talk

Look at the equivalent fractions you have found. What relationship can you see between the numerators and denominators? Are there any patterns?

Can a fraction have more than one equivalent fraction?

Can you use Cuisenaire rods or pattern blocks to investigate equivalent fractions?

Varied Fluency

Use two strips of equal sized paper. Fold one strip into quarters and the other into eighths. Place the quarters on top of the eighths and lift up one quarter; how many eighths can you see? How many eighths are equivalent to one quarter? Which other equivalent fractions can you find?

Using squared paper, investigate equivalent fractions using equal parts e.g. \( \frac{2}{4} = \frac{7}{8} \)

Start by drawing a bar 8 squares long. Underneath, compare the same length bar split into four equal parts.

How many fractions that are equivalent to one half can you see on the fraction wall?

Draw extra rows to show other equivalent fractions.

Can you use Cuisenaire rods or pattern blocks to investigate equivalent fractions?
### How many equivalent fractions can you see in this picture?

Children can give a variety of possibilities. Examples:

\[
\frac{1}{2} = \frac{6}{12} = \frac{3}{6}
\]

\[
\frac{1}{4} = \frac{3}{12}
\]

### Eva says,

I know that \(\frac{3}{4}\) is equivalent to \(\frac{3}{8}\) because the numerators are the same.

### Ron has two strips of the same sized paper.

He folds the strips into different sized fractions.

He shades in three equal parts on one strip and six equal parts on the other strip.

The shaded areas are equal.

What fractions could he have folded his strips into?

Ron could have folded his strips into sixths and twelfths, quarters and eighths or any other fractions where one of the denominators is double the other.

Eva is not correct.

\(\frac{3}{4}\) is equivalent to \(\frac{6}{8}\)

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

Is Eva correct? Explain why.
Children continue to understand equivalence through diagrams. They move onto using proportional reasoning to find equivalent fractions.

Attention should be drawn to the method of multiplying the numerators and denominators by the same number to ensure that fractions are equivalent.

Using the diagram, complete the equivalent fractions.

\[
\frac{1}{4} = \frac{\square}{12} \quad \frac{1}{12} = \frac{6}{\square} \quad \frac{2}{\square} = \frac{12}{12} \quad \frac{5}{12} = \frac{\square}{24}
\]

Using the diagram, complete the equivalent fractions.

\[
\frac{1}{3} = \frac{\square}{6} = \frac{\square}{12} = \frac{\square}{24}
\]

Complete:

\[
\frac{1}{4} = \frac{2}{\square} = \frac{\square}{12} = \frac{4}{\square} = \frac{\square}{100} = \frac{\square}{500}
\]
Tommy is finding equivalent fractions.

\[ \frac{3}{4} = \frac{5}{6} = \frac{7}{8} = \frac{9}{10} \]

He says,

I did the same thing to the numerator and the denominator so my fractions are equivalent.

Do you agree with Tommy? Explain your answer.

Tommy is wrong. He has added two to the numerator and denominator each time. When you find equivalent fractions you either need to multiply or divide the numerator and denominator by the same number.

Use the digit cards to complete the equivalent fractions.

\[
\begin{array}{ccc}
1 & 2 & 3 \\
4 & 6 & 8 \\
\end{array}
\]

Possible answers:

\[
\begin{array}{ccc}
\frac{1}{2} = \frac{3}{6}, & \frac{1}{2} = \frac{4}{8} \\
\frac{1}{3} = \frac{2}{6}, & \frac{1}{4} = \frac{2}{8} \\
\frac{3}{4} = \frac{6}{8}, & \frac{2}{3} = \frac{4}{6} \\
\end{array}
\]

How many different ways can you find?
Block 3 - Fractions

Theme 3 - Compare & Order
Children compare unit fractions or fractions with the same denominator.
For unit fractions, children's natural tendency might be to say that $\frac{1}{2}$ is smaller than $\frac{1}{4}$, as 2 is smaller than 4. Discuss how dividing something into more equal parts makes each part smaller.

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 $\frac{1}{3}$?

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

Use paper strips to compare the fractions using $>$, $<$ or $=$

When the denominators are the same, the _____ the numerator, the ______ the fraction.
Do you agree with Dora? Explain how you know.

I know that $\frac{1}{3}$ is larger than $\frac{1}{2}$ because 3 is larger than 2.

$\frac{1}{3}$ is smaller because it is split into 3 equal parts, rather than 2 equal parts. Children could draw a bar model to show this.

Complete the missing denominator. How many different options can you find?

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

Examples could include $\frac{1}{3}, \frac{1}{4}$, etc.

Here are three fractions.

$\frac{3}{8}, \frac{3}{5}, \frac{1}{8}$

Which fraction is the largest? How do you know?

$\frac{3}{5}$ is the largest when the numerators are the same, the smaller the denominator the larger the fraction. Children could also explain that $\frac{3}{5}$ is the only fraction larger than a half.

Which fraction is the smallest? How do you know?

$\frac{1}{8}$ is the smallest when the denominators are the same, the smaller the numerator, the smaller the fraction.
Order Fractions

Notes and Guidance

Children order unit fractions and fractions with the same denominator. They use bar models and number lines to order the fractions and write them in ascending and descending order.

Continue to encourage children to use stem sentences to explain why they can compare fractions when the numerators or the denominators are the same.

Mathematical Talk

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?

Varied Fluency

Divide strips of paper into halves, thirds, quarters, fifths and sixths and colour in one part of each strip.

Now order the strips from the smallest to the largest fraction.

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

Place the fractions on the number line.

Order the fractions in descending order.
Is Jack correct? Prove it.

Jack is incorrect. When the denominators are the same, the larger the numerator the larger the fraction. Children could prove this using bar models or strips of paper etc.

Shade the blank diagrams so the fractions are ordered correctly.

Fractions in ascending order

Fractions in descending order

Either 7 or 8 parts shaded.

Either 2 and 1 parts shaded or 1 and 0 parts shaded.
Block 3 - Fractions

Theme 4 - Fractions of an Amount
Fraction of an Amount (1)

Notes and Guidance

Children find a unit fraction of an amount by dividing an amount into equal groups.

They build on their understanding of division by using place value counters to find fractions of larger quantities including where they need to exchange tens for ones.

Mathematical Talk

Which operation do we use to find a fraction of an amount?

How many equal groups do we need?

Which part of the fraction tells us this?

How does the bar model help us?

Varied Fluency

Find \( \frac{1}{5} \) of Eva’s marbles.

I have divided the marbles into equal groups.

There are marbles in each group.

\( \frac{1}{5} \) of Eva’s marbles is marbles.

Dexter has used a bar model and counters to find \( \frac{1}{4} \) of 12

Use Dexter’s method to calculate:

\( \frac{1}{6} \) of 12 \hspace{1cm} \( \frac{1}{3} \) of 12 \hspace{1cm} \( \frac{1}{3} \) of 18 \hspace{1cm} \( \frac{1}{9} \) of 18

Amir uses a bar model and place value counters to find one quarter of 84

Use Amir’s method to find:

\( \frac{1}{3} \) of 36 \hspace{1cm} \( \frac{1}{3} \) of 45 \hspace{1cm} \( \frac{1}{5} \) of 65
Whitney has 12 chocolates.

On Friday, she ate \( \frac{1}{4} \) of her chocolates and gave one to her mum.

On Saturday, she ate \( \frac{1}{2} \) of her remaining chocolates, and gave one to her brother.

On Sunday, she ate \( \frac{1}{3} \) of her remaining chocolates.

How many chocolates does Whitney have left?

Whitney has two chocolates left.

### Fill in the Blanks

\[
\frac{1}{3} \text{ of } 60 = \frac{1}{4} \text{ of } \underline{80}
\]

\[
\frac{1}{5} \text{ of } 50 = \frac{1}{5} \text{ of } 25
\]
**Fraction of an Amount (2)**

**Notes and Guidance**

Children need to understand that the denominator of the fraction tells us how many equal parts the whole will be divided into. E.g. $\frac{1}{3}$ means dividing the whole into 3 equal parts.

They need to understand that the numerator tells them how many parts of the whole there are. E.g. $\frac{2}{3}$ means dividing the whole into 3 equal parts, then counting the amount in 2 of these parts.

**Mathematical Talk**

What does the denominator tell us?

What does the numerator tell us?

What is the same and what is different about two thirds and two fifths?

How many parts is the whole divided into and why?

**Varied Fluency**

- Find $\frac{2}{5}$ of Eva’s marbles.

  I have divided the marbles into □ equal groups.

  There are □ marbles in each group.

  $\frac{2}{5}$ of Eva’s marbles is □ marbles.

- Dexter has used a bar model and counters to find $\frac{3}{4}$ of 12

  Use Dexter’s method to calculate:

  $\frac{5}{6}$ of 12  $\frac{2}{3}$ of 12  $\frac{2}{3}$ of 18  $\frac{7}{9}$ of 18

- Amir uses a bar model and place value counters to find three quarters of 84

  Use Amir’s method to find:

  $\frac{2}{3}$ of 36  $\frac{2}{3}$ of 45  $\frac{3}{5}$ of 65
Fraction of an Amount (2)

Reasoning and Problem Solving

This is \(\frac{3}{4}\) of a set of beanbags.

How many were in the whole set?

16

Ron has £28

On Friday, he spent \(\frac{1}{4}\) of his money.

On Saturday, he spent \(\frac{2}{3}\) of his remaining money and gave £2 to his sister.

On Sunday, he spent \(\frac{1}{5}\) of his remaining money.

How much money does Ron have left?

What fraction of his original amount is this?

Ron has £4 left.

This is \(\frac{1}{7}\) of his original amount.
Ron has £3 and 50p.
He wants to give half of his money to his brother.
How much would his brother receive?

A bag of sweets weighs 240 g.
There are 4 children going to the cinema,
each receives \(\frac{1}{4}\) of the bag.
What weight of sweets will each child receive?

Find \(\frac{2}{3}\) of 1 hour.
Use the clock face to help you.

1 hour = \[\square\] minutes

\(\frac{1}{3}\) of \[\square\] minutes = \[\square\]

\(\frac{2}{3}\) of \[\square\] minutes = \[\square\]
Mo makes 3 rugby shirts.

Each rugby shirt uses 150 cm of material.

He has a 600 cm roll of material.

How much material is left after making the 3 shirts?

What fraction of the original roll is left over?

150 cm

This is \( \frac{1}{4} \) of his original roll of material.

Alex and Eva share a bottle of juice.

Alex drinks \( \frac{3}{5} \) of the juice.

Eva drinks 200 ml of the juice.

One fifth of the juice is left in the bottle.

How much did Alex drink?

What fraction of the bottle did Eva drink?

What fraction of the drink is left?

Alex drank 600 ml of the juice.

Eva drank one fifth of the juice.

The fraction of juice left is \( \frac{1}{5} \) of the bottle.
Children use their knowledge of finding unit fractions of a quantity, to find non-unit fractions of a quantity.

They use concrete and pictorial representations to support their understanding. Children link bar modelling to the abstract method in order to understand why the method works.

Mo has 12 apples.
Use counters to represent his apples and find:
\[ \frac{1}{2} \text{ of } 12 \quad \frac{1}{4} \text{ of } 12 \quad \frac{1}{3} \text{ of } 12 \quad \frac{1}{6} \text{ of } 12 \]

Now calculate:
\[ \frac{2}{2} \text{ of } 12 \quad \frac{3}{4} \text{ of } 12 \quad \frac{2}{3} \text{ of } 12 \quad \frac{5}{6} \text{ of } 12 \]

What do you notice? What’s the same and what’s different?

Use a bar model to help you represent and find:
\[ \frac{1}{7} \text{ of } 56 = 56 \div 7 \]
\[ \frac{2}{7} \text{ of } 56 \quad \frac{3}{7} \text{ of } 56 \quad \frac{4}{7} \text{ of } 56 \quad \frac{4}{7} \text{ of } 28 \quad \frac{7}{7} \text{ of } 28 \]

Whitney eats \( \frac{3}{8} \) of 240 g bar of chocolate.
How many grams does she have left? Can you represent this on a bar model?
**True or False?**

False. To find $\frac{3}{8}$ of a number, divide by 8 to find one eighth and then multiply by 3 to find three eighths of a number.

Ron gives $\frac{2}{9}$ of a bag of 54 marbles to Alex.

Teddy gives $\frac{3}{4}$ of a bag of marbles to Alex.

Ron gives Alex more marbles than Teddy.

How many marbles could Teddy have to begin with?

\[ \frac{2}{9} \text{ of } 54 > \frac{3}{4} \text{ of } \square \]

Teddy could have 16, 12, 8 or 4 marbles to begin with.
Children solve more complex problems for fractions of a quantity. They continue to use practical equipment and pictorial representations to help them see the relationships between the fraction and the whole.

Encourage children to use the bar model to solve word problems and represent the formal method.

**Mathematical Talk**

If I know one quarter of a number, how can I find three quarters of a number?

If I know one of the equal parts, how can I find the whole?

How can a bar model support my working?

<table>
<thead>
<tr>
<th>Whole</th>
<th>Unit Fraction</th>
<th>Non-unit Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>The whole is 24</td>
<td>( \frac{1}{6} ) of 24 =</td>
<td>( \frac{5}{6} ) of 24 =</td>
</tr>
<tr>
<td>The whole is</td>
<td>( \frac{1}{3} ) of = 30</td>
<td>( \frac{2}{3} ) of =</td>
</tr>
<tr>
<td>The whole is</td>
<td>( \frac{1}{5} ) of = 30</td>
<td>( \frac{3}{5} ) of =</td>
</tr>
</tbody>
</table>

Jack has a bottle of lemonade.
He has one-fifth left in the bottle.
There are 150 ml left.
How much lemonade was in the bottle when it was full?
The school kitchen needs to buy carrots for lunch. A large bag has 200 carrots and a medium bag has \(\frac{3}{5}\) of a large bag. Mrs Rose says,

I need 150 carrots so I will have to buy a large bag.

Is Mrs Rose correct? Explain your reasoning.

Mrs Rose is correct. \(\frac{3}{5}\) of 200 = 120 Mrs Rose will need a large bag.

These three squares are \(\frac{1}{4}\) of a whole shape.

How many different shapes can you draw that could be the complete shape?

If \(\frac{1}{8}\) of A = 12, find the value of A, B and C.

\[ \frac{5}{8} \text{ of } A = \frac{3}{4} \text{ of } B = \frac{1}{6} \text{ of } C \]

A = 96
B = 80
C = 360

Lots of different possibilities. The shape should have 12 squares in total.
Children use practical equipment and pictorial representations to add two or more fractions with the same denominator where the total is less than 1.

They understand that we only add the numerators and the denominators stay the same.

Using your paper circles, show me what $\frac{4}{4} + \frac{4}{4}$ 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?

Take a paper circle. Fold your circle to split it into 4 equal parts. Colour one part red and two parts blue. Use your model to complete the sentences.

_____ quarter is red.

_____ quarters are blue.

_____ quarters are coloured in.

Show this as a number sentence. $\frac{4}{4} + \frac{4}{4} = \frac{4}{4}$

We can use this model to calculate $\frac{3}{8} + \frac{1}{8} = \frac{4}{8}$.

Draw your own models to calculate

$\frac{1}{5} + \frac{2}{5} = \frac{3}{5}$

$\frac{2}{7} + \frac{3}{7} + \frac{1}{7} = \frac{6}{7}$

$\frac{7}{10} + \frac{1}{10} = \frac{8}{10}$

Eva eats $\frac{5}{12}$ of a pizza and Annie eats $\frac{1}{12}$ of a pizza.

What fraction of the pizza do they eat altogether?
Add Fractions

Reasoning and Problem Solving

Rosie and Whitney are solving:

\[ \frac{4}{7} + \frac{2}{7} \]

Rosie says, The answer is \( \frac{6}{7} \)

Whitney says, The answer is \( \frac{6}{14} \)

Who do you agree with? Explain why.

Rosie is correct. Whitney has made the mistake of also adding the denominators. Children could prove why Whitney is wrong using a bar model or strip diagram.

Mo and Teddy share these chocolates.

They both eat an odd number of chocolates. Complete this number sentence to show what fraction of the chocolates they each could have eaten.

\[ \boxed{\_ \_ \_} + \boxed{\_ \_ \_} = \frac{12}{12} \]

Possible answers:

\[ \frac{1}{12} + \frac{11}{12} \]

\[ \frac{3}{12} + \frac{9}{12} \]

\[ \frac{5}{12} + \frac{7}{12} \]

(In either order)
Subtract Fractions

Notes and Guidance

Children use practical equipment and pictorial representations to subtract fractions with the same denominator within one whole.

They understand that we only subtract the numerators and the denominators stay the same.

Mathematical Talk

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?

Varied Fluency

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

Can you write a number story using ‘first’, ‘then’ and ‘now’ to describe your calculation?

Use the models to help you subtract the fractions.

Complete the part whole models. Use equipment if needed. Can you write fact families for each model?

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

Reasoning and Problem Solving

Find the missing fractions:

\[
\frac{7}{7} - \frac{3}{7} = \frac{2}{7} + \frac{\Box}{7}
\]

\[
\frac{7}{9} - \frac{5}{9} = \frac{4}{9} - \frac{2}{9}
\]

How many fraction addition and subtractions can you make from this model?

There are lots of calculations children could record. Children may even record calculations where there are more than 2 fractions e.g. \(\frac{3}{9} + \frac{1}{9} + \frac{3}{9} = \frac{7}{9}\)

Jack and Annie are solving \(\frac{4}{5} - \frac{2}{5}\)

Jack’s method:

Annie’s method:

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

51
Add 2 or More Fractions

Notes and Guidance

Children use practical equipment and pictorial representations to add two or more fractions. Children record their answers as an improper fraction when the total is more than 1.

A common misconception is to add the denominators as well as the numerators. Use bar models to support children’s understanding of why this is incorrect.

Children can also explore adding fractions more efficiently by using known facts or number bonds to help them.

Mathematical Talk

How many equal parts is the whole split into? How many equal parts am I adding?

Which bar model do you prefer when adding fractions? Why?

Can you combine any pairs of fractions to make one whole when you are adding three fractions?

Varied Fluency

- Take two identical strips of paper.
  - Fold your paper into quarters.
  - Can you use the strips to solve $\frac{1}{4} + \frac{1}{4}$?
  - What other fractions can you make and add?

- Use the models to add the fractions:
  - $\frac{2}{7} + \frac{2}{7} = \ ?$
  - $\frac{3}{5} + \frac{4}{5} = \ ?$

- Choose your preferred model to add:
  - $\frac{2}{5} + \frac{1}{5}$
  - $\frac{3}{7} + \frac{6}{7}$
  - $\frac{7}{9} + \frac{4}{9}$

- Use the number line to add the fractions:
  - $\frac{4}{9} + \frac{4}{9} + \frac{8}{9} = \ ?$
  - $\frac{4}{9} + \frac{5}{9} + \frac{8}{9} = \ ?$
  - $\frac{1}{9} + \frac{11}{9} + 1 = \ ?$
  - $\frac{9}{9} + \frac{5}{9} + \frac{7}{9} = \ ?$
Alex is adding fractions.

\[ \frac{3}{9} + \frac{2}{9} = \frac{5}{18} \]

Is she correct? Explain why.

How many different ways can you find to solve the calculation?

\[ \frac{\square}{\square} + \frac{\square}{\square} = \frac{11}{9} \]

Alex is incorrect. Alex has added the denominators as well as the numerators.

Any combination of ninths where the numerators total 11.

Mo and Teddy are solving:

\[ \frac{6}{13} + \frac{5}{13} + \frac{7}{13} \]

The answer is 1 and \( \frac{5}{13} \)

They are both correct. Mo has added \( \frac{6}{13} + \frac{7}{13} \) to make 1 whole and then added \( \frac{5}{13} \).

Who do you agree with? Explain why.

The answer is \( \frac{18}{13} \)
Children use practical equipment and pictorial representations to subtract fractions with the same denominator.

Encourage children to explore subtraction as take away and as difference. Difference can be represented on a bar model by using a comparison model and making both fractions in the subtraction.

Use identical strips of paper and fold them into eighths. Use the strips to solve the calculations.

\[
\frac{8}{8} - \frac{3}{8} = \quad \frac{7}{8} - \frac{3}{8} = \quad \frac{16}{8} - \frac{9}{8} = \quad \frac{13}{8} - \frac{6}{8} = \frac{7}{8}
\]

Use the bar models to subtract the fractions.

\[
\frac{6}{7} - \frac{2}{7} = \quad \frac{11}{6} - \frac{5}{6} = \frac{6}{6} = 1
\]

\[
\frac{13}{5} - \frac{6}{5} = \frac{6}{5}
\]

Annie uses the number line to solve \(\frac{17}{11} - \frac{9}{11}\).

Use a number line to solve:

\[
\frac{16}{13} - \frac{9}{13} \quad \frac{16}{9} - \frac{9}{9} \quad \frac{16}{7} - \frac{9}{7} \quad \frac{16}{16} - \frac{9}{16}
\]

Mathematical Talk

Have you used take away or difference to subtract the eighths using the strips of paper? How are they the same? How are they different?

How can I find a missing number in a subtraction? Can you count on to find the difference?

Can I partition my fraction to help me subtract?
## Subtract 2 Fractions

### Reasoning and Problem Solving

Match the number stories to the correct calculations.

<table>
<thead>
<tr>
<th>Number Story</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teddy eats $\frac{7}{8}$ of a pizza. Dora eats $\frac{2}{8}$.</td>
<td>$\frac{7}{8} + \frac{2}{8} = -$</td>
</tr>
<tr>
<td>How much do they eat altogether?</td>
<td></td>
</tr>
<tr>
<td>Teddy eats $\frac{7}{8}$ of a pizza. Dora eats $\frac{4}{8}$ less.</td>
<td>$\frac{7}{8} + \frac{4}{8} = -$</td>
</tr>
<tr>
<td>How much do they eat altogether?</td>
<td></td>
</tr>
<tr>
<td>Teddy eats $\frac{7}{8}$ of a pizza. Dora eats $\frac{3}{8}$ less.</td>
<td>$\frac{7}{8} - \frac{3}{8} = -$</td>
</tr>
<tr>
<td>How much does Dora eat?</td>
<td></td>
</tr>
</tbody>
</table>

1st question matches with second calculation. 2nd question with first calculation. 3rd question with third calculation.

Annie and Amir are working out the answer to this problem.

$$\frac{7}{9} - \frac{3}{9}$$

Annie uses this model.

Amir uses this model.

They are both correct. The first model shows finding the difference and the second model shows take away.

Ensure the number stories match the model of subtraction. For Annie’s this will be finding the difference. For Amir this will be take away.

How many different ways can you find to solve the calculation?

- $\frac{\square}{7} - \frac{\square}{7} = \frac{\square}{7} + \frac{\square}{7}$
- $\frac{\square}{7} - \frac{\square}{7} = \frac{\square}{7} - \frac{\square}{7}$

Children may give a range of answers as long as the calculation for the numerators is correct.

Which model is correct? Explain why.

Can you write a number story for each model?
Children continue to use practical equipment and pictorial representations to subtract fractions.

Children subtract fractions from a whole amount. Children need to understand how many equal parts are equivalent to a whole e.g. \( \frac{9}{9} = 1 \), \( \frac{18}{9} = 2 \) etc.

What do you notice about the numerator and denominator when a fraction is equal to one whole?

Using Jack’s method, what’s the same about your bar models? What’s different?

How many more thirds/quarters/ninths do you need to make one whole?
Dora is subtracting a fraction from a whole.

\[ 5 - \frac{3}{7} = \frac{2}{7} \]

Can you spot her mistake?

What should the answer be?

How many ways can you make the statement correct?

\[ 2 - \frac{\square}{8} = \frac{5}{8} + \frac{\square}{8} \]

Dora has not recognised that 5 is equivalent to \(\frac{35}{7}\).

\[ 5 - \frac{3}{7} = \frac{33}{7} = 4\frac{5}{7} \]

Whitney has a piece of ribbon that is 3 metres long.

She cuts it into 12 equal pieces and gives Teddy 3 pieces.

How many metres of ribbon does Whitney have left?

Cutting 3 metres of ribbon into 12 pieces means each metre of ribbon will be in 4 equal pieces.

Whitney will have \(\frac{12}{4}\) to begin with.

\[ \frac{12}{4} - \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4} \]

Whitney has \(2\frac{1}{4}\) metres of ribbon left.