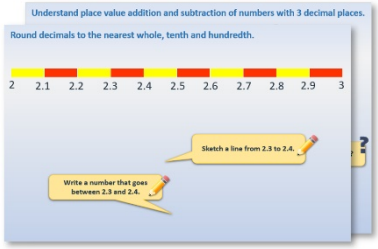
Year 5: Week 2, Day 3

Use equivalence to compare and order fractions

Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. Start by reading through the **Learning Reminders**.
   They come from our *PowerPoint* slides.



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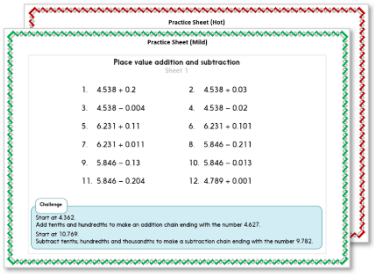
2. Tackle the questions on the **Practice Sheet**.
   There might be a choice of either Mild (easier) or Hot (harder)!
   Check the answers.



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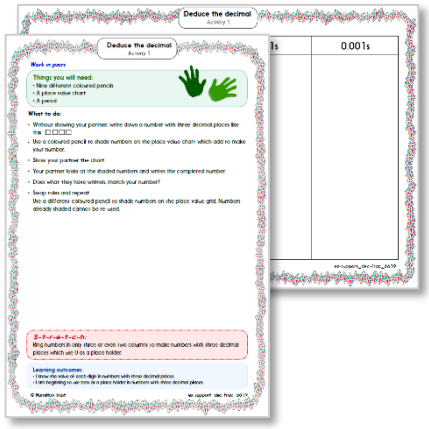
3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**



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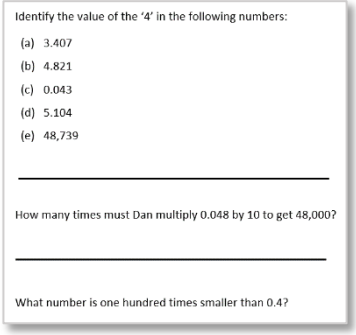
4. Have I mastered the topic? A few questions to **Check your understanding**.
   Fold the page to hide the answers!



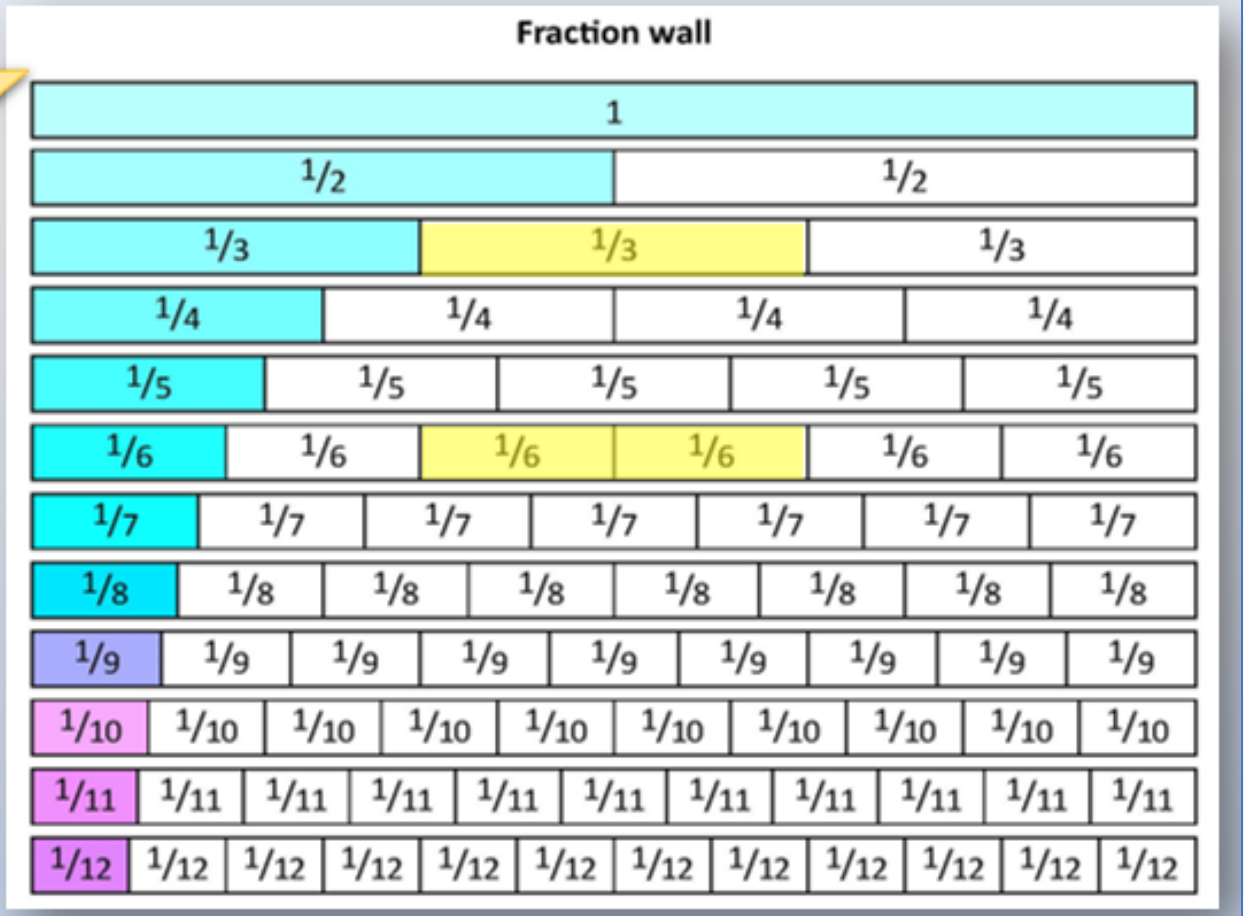
Learning Reminders

Comparing fractions, using equivalence.

Write 3 sentences to say what the *Fraction Wall* is and how we can use it.

Now write as many fractions equivalent to $\frac{1}{3}$, $\frac{1}{4}$ and $\frac{1}{5}$ as you can.
One is shaded to get you started...

Fraction wall



Answers

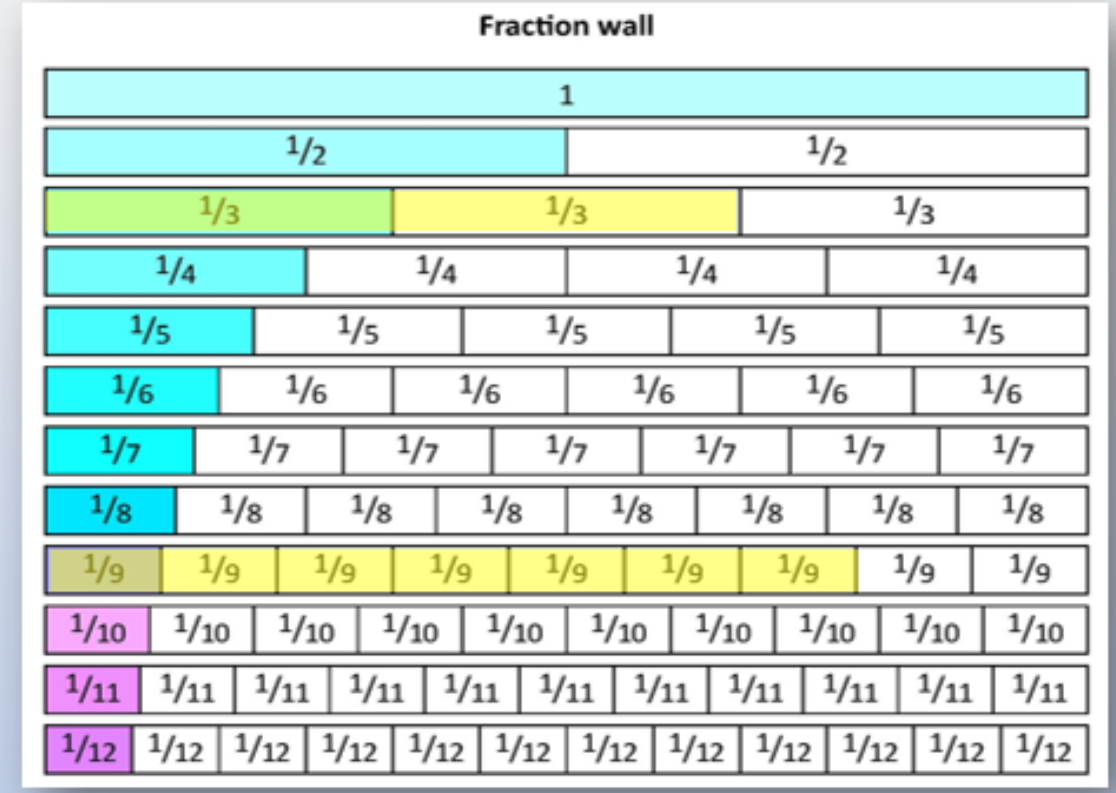
$\frac{1}{3} = \frac{2}{6} = \frac{3}{9} = \frac{4}{12}$ $\frac{1}{4} = \frac{2}{8} = \frac{3}{12}$ $\frac{1}{5} = \frac{2}{10}$

Learning Reminders

Comparing fractions, using equivalence.

Which is bigger? $\frac{2}{3}$ $\frac{7}{9}$

Use the wall to see that $\frac{2}{3}$ are the same as $\frac{6}{9}$ ...



$\frac{6}{9} < \frac{7}{9}$

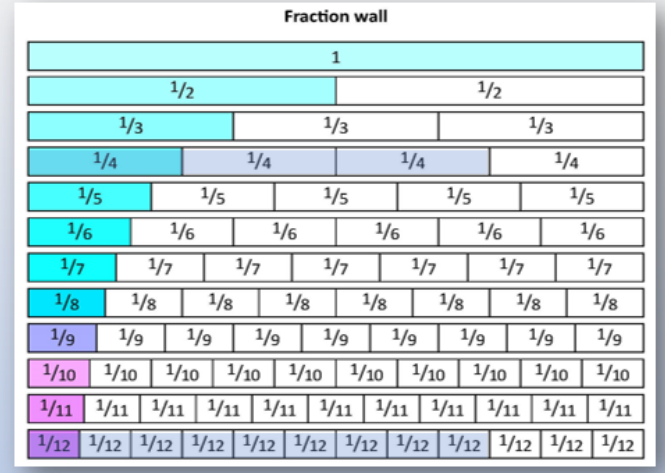
so, $\frac{2}{3} < \frac{7}{9}$

Learning Reminders

Comparing fractions, using equivalence.

Which is bigger? $\frac{7}{12}$ $\frac{3}{4}$

Use the wall to see that $\frac{3}{4}$ are the same as $\frac{9}{12}$ ...



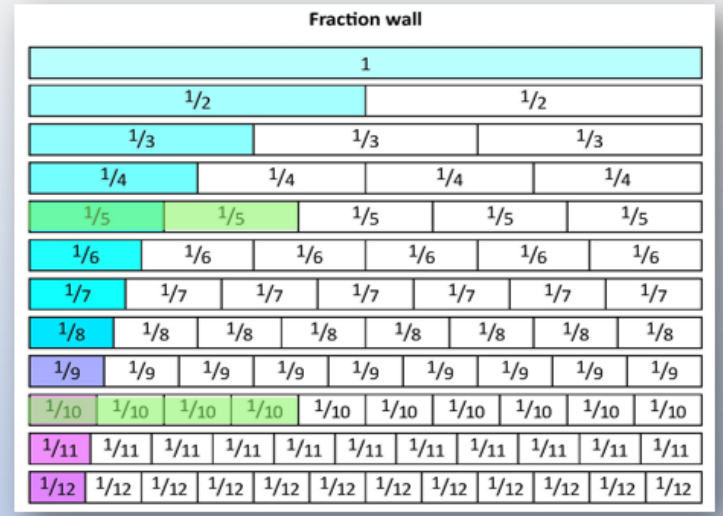
$\frac{7}{12} < \frac{9}{12}$

so, $\frac{7}{12} < \frac{3}{4}$

Comparing fractions, using equivalence.

Which is bigger? $\frac{2}{5}$ $\frac{3}{10}$

Use the wall to see that $\frac{2}{5}$ are the same as $\frac{4}{10}$ ...



$\frac{4}{10} > \frac{3}{10}$

so, $\frac{2}{5} > \frac{3}{10}$

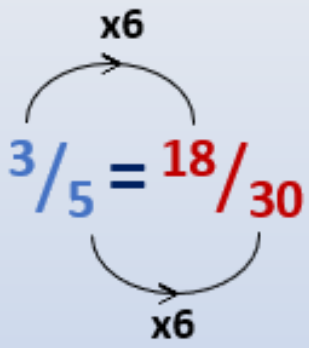
Learning Reminders

Comparing fractions, using equivalence.

$\frac{3}{5}$ $\frac{7}{10}$ $\frac{8}{15}$

What could we do to compare these three fractions?

Write them all as thirtieths.
The fraction wall can't help this time as there are no thirtieths on it!



Remember: Do the same multiplication, or division, to the numerator *and* denominator to create an equivalent fraction...

$\frac{21}{30} > \frac{18}{30} > \frac{16}{30}$

$\frac{7}{10} > \frac{3}{5} > \frac{8}{15}$

Practice Sheet Mild

Equivalent fractions

Use the fraction wall to help you join each fraction on the left to the equivalent fraction in its simplest form.

$\frac{2}{8}$	$\frac{1}{2}$
$\frac{3}{6}$	
$\frac{3}{9}$	
$\frac{3}{12}$	$\frac{1}{3}$
$\frac{4}{12}$	
$\frac{5}{10}$	$\frac{2}{3}$
$\frac{4}{8}$	
$\frac{6}{8}$	
$\frac{2}{6}$	$\frac{1}{4}$
$\frac{4}{6}$	
$\frac{8}{12}$	$\frac{3}{4}$
$\frac{9}{12}$	

Challenge

Write some fractions which are equivalent to $\frac{1}{4}$ but not on the fraction wall.

Practice Sheet Mild

Ordering fractions

Write these fractions as $\frac{1}{6}$s. Then write them in order, starting with the smallest first.

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

Write these fractions as $\frac{1}{10}$s. Then write them in order, starting with the smallest first.

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

Write these fractions as $\frac{1}{12}$s. Then write them in order, starting with the smallest first.

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

Practice Sheet Hot
Equivalent fractions

Ring all the fractions that are equivalent to $\frac{1}{4}$

$\frac{2}{8}$ $\frac{2}{7}$ $\frac{3}{12}$ $\frac{4}{20}$ $\frac{5}{20}$ $\frac{10}{30}$ $\frac{10}{40}$ $\frac{4}{16}$ $\frac{4}{100}$

Ring all the fractions that are equivalent to $\frac{1}{3}$

$\frac{3}{12}$ $\frac{3}{6}$ $\frac{2}{6}$ $\frac{4}{12}$ $\frac{4}{9}$ $\frac{10}{30}$ $\frac{3}{9}$ $\frac{5}{15}$ $\frac{6}{15}$

Ring all the fractions that are equivalent to $\frac{1}{5}$

$\frac{5}{15}$ $\frac{2}{10}$ $\frac{3}{15}$ $\frac{4}{20}$ $\frac{5}{20}$ $\frac{5}{100}$ $\frac{20}{100}$ $\frac{10}{50}$ $\frac{4}{25}$

Complete this list of fractions equivalent to $\frac{3}{4}$

$\frac{3}{4}$ $\frac{\square}{8}$ $\frac{\square}{12}$ $\frac{\square}{16}$ $\frac{\square}{20}$ $\frac{30}{\square}$ $\frac{\square}{60}$ $\frac{\square}{100}$ $\frac{21}{\square}$ $\frac{\square}{\square}$

Challenge 1

Ava says that she can write $\frac{1}{2}$, $\frac{3}{4}$, $\frac{2}{5}$ and $\frac{2}{3}$ as an equivalent number of fiftieths. Do you agree with her?

Challenge 2

Write at least 5 fractions which are equivalent to $\frac{2}{5}$.

Practice Sheet Hot

Comparing and ordering fractions

Compare these pairs of fractions. Write them as the same 'sort' of fractions (with the same denominator), then write > or < in between.

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

2. $\frac{2}{3}$ $\frac{2}{9}$

3. $\frac{3}{10}$ $\frac{1}{5}$

4. $\frac{3}{4}$ $\frac{7}{8}$

5. $\frac{5}{6}$ $\frac{11}{12}$

6. $\frac{7}{10}$ $\frac{3}{5}$

7. $\frac{1}{3}$ $\frac{5}{12}$

8. $\frac{2}{5}$ $\frac{7}{15}$

9. $\frac{7}{10}$ $\frac{13}{20}$

10. $\frac{1}{3}$ $\frac{4}{15}$

11. $\frac{1}{2}$ $\frac{2}{5}$

12. $\frac{2}{3}$ $\frac{4}{5}$

Write these groups of fractions as the same 'sort' of fractions. Then write each group in order from least to greatest.

13. $\frac{1}{2}$ $\frac{3}{4}$ $\frac{5}{8}$

14. $\frac{1}{2}$ $\frac{3}{5}$ $\frac{7}{10}$

15. $\frac{1}{3}$ $\frac{4}{15}$ $\frac{2}{5}$

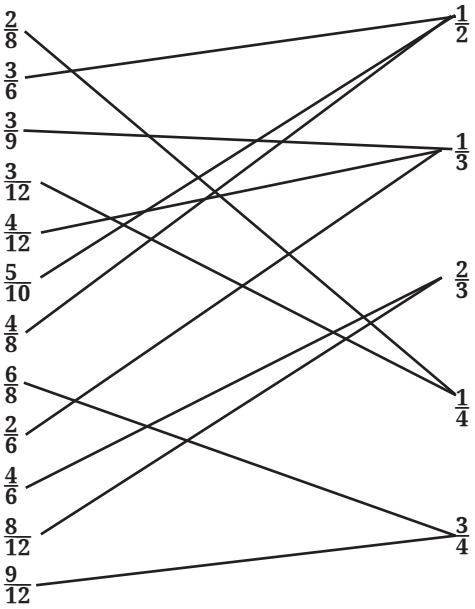
16. $\frac{17}{20}$ $\frac{4}{5}$ $\frac{7}{10}$

Challenge

Create a group of four fractions with different denominators that can be re-written as the same 'sort'. Order them using > or < symbols.

Practice Sheets Answers

Equivalent fractions (mild)



Ordering fractions (mild)

$\frac{2}{3} = \frac{4}{6}$
$\frac{1}{2} = \frac{3}{6}$ Order smallest first: $\frac{1}{3}$ $\frac{1}{2}$ $\frac{2}{3}$
$\frac{1}{3} = \frac{2}{6}$

$\frac{1}{2} = \frac{5}{10}$
$\frac{2}{5} = \frac{4}{10}$ Order smallest first: $\frac{2}{5}$ $\frac{1}{2}$ $\frac{3}{5}$
$\frac{3}{5} = \frac{6}{10}$

$\frac{2}{3} = \frac{8}{12}$
$\frac{3}{4} = \frac{9}{12}$
$\frac{1}{4} = \frac{3}{12}$
$\frac{1}{3} = \frac{4}{12}$ Order smallest first: $\frac{1}{6}$ $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{2}$ $\frac{2}{3}$ $\frac{9}{12}$
$\frac{1}{6} = \frac{2}{12}$
$\frac{5}{6} = \frac{10}{12}$
$\frac{1}{2} = \frac{6}{12}$

Equivalent fractions (hot)

The fractions equivalent to $\frac{1}{4}$ are: $\frac{2}{8}$ $\frac{3}{12}$ $\frac{5}{20}$ $\frac{10}{40}$ $\frac{4}{16}$

The fractions equivalent to $\frac{1}{3}$ are: $\frac{2}{6}$ $\frac{4}{12}$ $\frac{10}{30}$ $\frac{3}{9}$ $\frac{5}{15}$

The fractions equivalent to $\frac{1}{5}$ are: $\frac{2}{10}$ $\frac{3}{15}$ $\frac{4}{20}$ $\frac{20}{100}$ $\frac{10}{50}$

$\frac{3}{4}$ $\frac{6}{8}$ $\frac{9}{12}$ $\frac{12}{16}$ $\frac{15}{20}$ $\frac{30}{40}$ $\frac{45}{60}$ $\frac{75}{100}$ $\frac{21}{28}$ The final fraction in this list can be any that is equivalent to $\frac{3}{4}$.

Challenge 1

Ava is partly correct: $\frac{1}{2} = \frac{25}{50}$ and $\frac{2}{5} = \frac{20}{50}$. but $\frac{2}{3}$ and $\frac{3}{4}$ cannot be writen as fiftieths, because the denominators are not factors of 50.

Challenge 2

Fractions equivalent to $\frac{2}{5}$ could include: $\frac{4}{10}$ $\frac{6}{15}$ $\frac{8}{20}$ $\frac{10}{25}$ $\frac{12}{30}$ and so on

Comparing and ordering fractions (hot)

1. $\frac{2}{3} = \frac{4}{6}$, so $\frac{2}{3} > \frac{3}{6}$

2. $\frac{2}{3} = \frac{6}{9}$, so $\frac{2}{3} > \frac{2}{9}$

3. $\frac{1}{5} = \frac{2}{10}$, so $\frac{3}{10} > \frac{1}{5}$

4. $\frac{3}{4} = \frac{6}{8}$, so $\frac{3}{4} < \frac{7}{8}$

5. $\frac{5}{6} = \frac{10}{12}$, so $\frac{5}{6} < \frac{11}{12}$

6. $\frac{3}{5} = \frac{6}{10}$, so $\frac{7}{10} > \frac{3}{5}$

7. $\frac{1}{3} = \frac{4}{12}$, so $\frac{1}{3} < \frac{5}{12}$

8. $\frac{2}{5} = \frac{6}{15}$, so $\frac{2}{5} < \frac{7}{15}$

9. $\frac{7}{10} = \frac{14}{20}$, so $\frac{7}{10} > \frac{13}{20}$

10. $\frac{1}{3} = \frac{3}{15}$, so $\frac{1}{3} > \frac{4}{15}$

11. $\frac{1}{2} = \frac{5}{10}$ and $\frac{2}{5} = \frac{4}{10}$, so $\frac{1}{2} > \frac{2}{5}$

12. $\frac{2}{3} = \frac{10}{15}$ and $\frac{4}{5} = \frac{12}{15}$, so $\frac{2}{3} < \frac{4}{5}$

13. $\frac{1}{2} = \frac{4}{8}$ $\frac{3}{4} = \frac{6}{8}$, so $\frac{1}{2} < \frac{5}{8} < \frac{3}{4}$

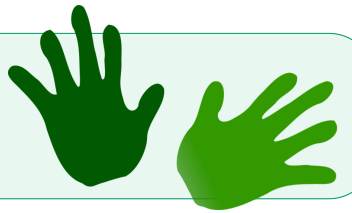
14. $\frac{1}{2} = \frac{5}{10}$ $\frac{3}{5} = \frac{6}{10}$, so $\frac{1}{2} < \frac{3}{5} < \frac{7}{10}$

15. $\frac{1}{3} = \frac{5}{15}$ $\frac{2}{5} = \frac{6}{15}$, so $\frac{4}{15} < \frac{1}{3} < \frac{2}{5}$

16. $\frac{7}{10} = \frac{14}{20}$ $\frac{4}{5} = \frac{16}{20}$, so $\frac{7}{10} < \frac{4}{5} < \frac{17}{20}$

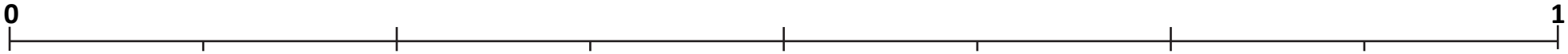
A Bit Stuck?
Fraction families

Things you will need:
- A pencil



What to do:

1. Label the quarters above this line. Label the eighths below it.

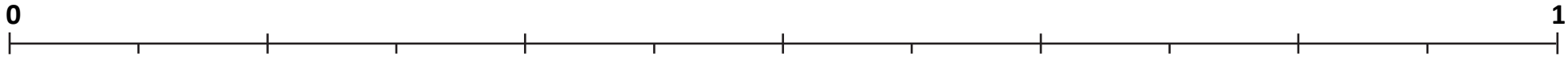


Now write as many pairs of equivalent fractions as you can.

2. Label the fifths above this line. Label the tenths below it.

Now write as many pairs of equivalent fractions as you can.

3. Label the sixths above this line. Label the twelfths below it.



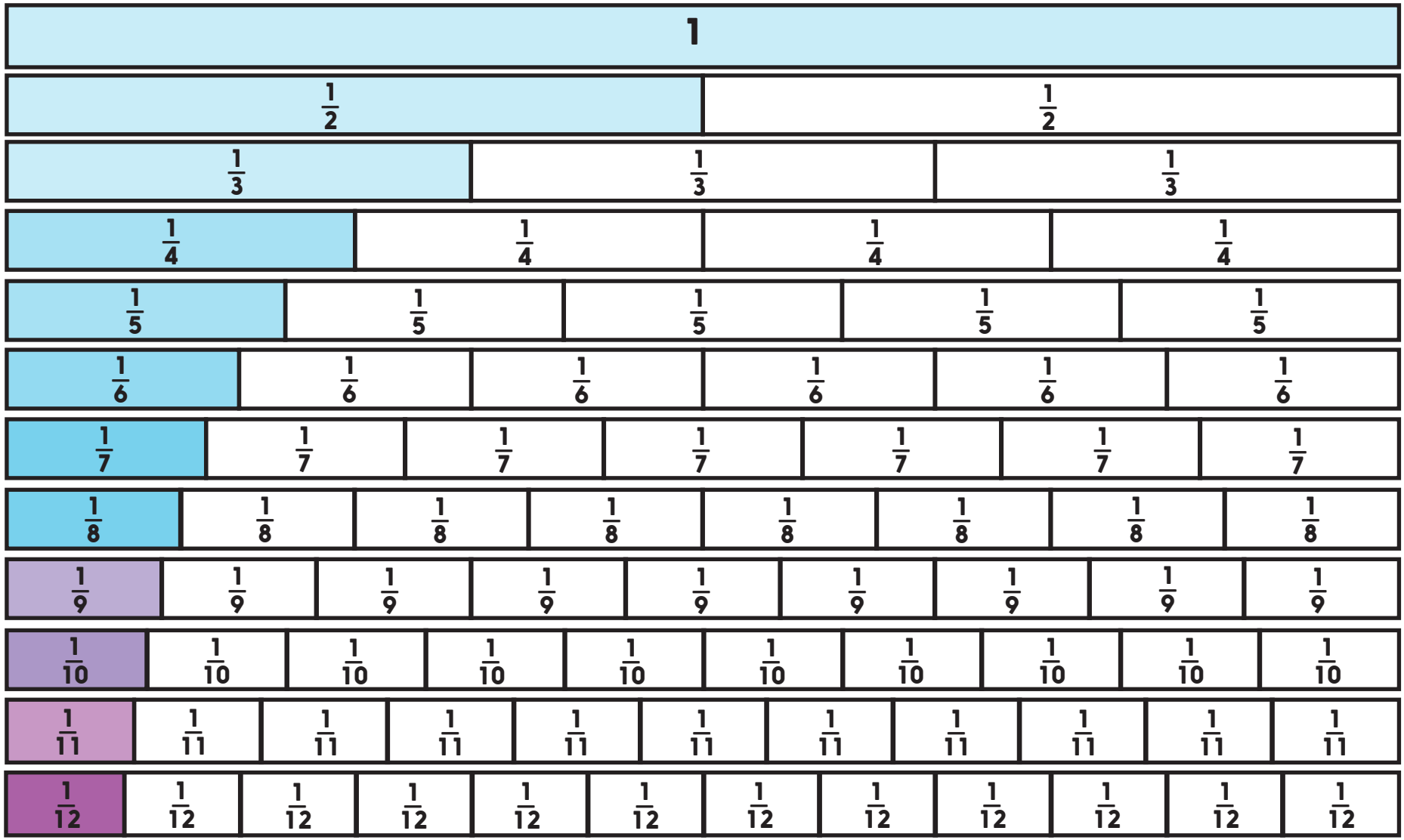
Now write as many pairs of equivalent fractions as you can.

S-t-r-e-t-c-h:
Write as many fractions as you can which are equivalent to ½, ¼ and ⅓.

Learning outcomes:
- I can identify pairs of equivalent fractions on a fraction line.
- I am beginning to identify fractions which are equivalent to ½, ¼ and ⅓, without the help of fraction line.

Resource Sheet

Fraction Wall



Check your understanding

Questions

- Write three fractions equivalent to $^{3}/_{5}$.
- Make an observation about the pattern in the denominators.
- Then write three fractions equivalent to $^{2}/_{3}$ and do the same.
  What can you predict about the pattern in the denominators of fractions equivalent to $^{5}/_{6}$?

Write the missing numbers to make each number sentence true.

$^{?}/_{6} > {}^{7}/_{12}$

$^{?}/_{6} = {}^{5}/_{?}$

$^{4}/_{?} < {}^{5}/_{?}$

Fold here to hide answers:

Check your understanding

Answers

- Write three fractions equivalent to $^{3}/_{5}$. e.g. $^{6}/_{10}$ $^{9}/_{15}$ $^{12}/_{20}$
- Make an observation about the pattern in the denominators. They are all multiples of 5.
- Then write three fractions equivalent to $^{2}/_{3}$ and do the same. E.g. $^{4}/_{6}$ $^{6}/_{9}$ $^{8}/_{12}$ Denominators are multiples of 3.
- What can you predict about the pattern in the denominators of fractions equivalent to $^{5}/_{6}$?
  They will be multiples of 6, e.g. $^{10}/_{12}$ $^{15}/_{18}$ $^{20}/_{24}$

Write the missing numbers to make each number sentence true.

$^{?}/_{6} > {}^{7}/12$ 1, 2 or 3 sixths

$^{?}/_{6} = {}^{5}/_{?}$ $^{1}/_{6} = {}^{5}/_{30}$

$^{4}/_{?} < {}^{5}/_{?}$ Many possibilities, some that can be checked on a fraction wall, e.g. $^{4}/_{7} < {}^{5}/_{6}$

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