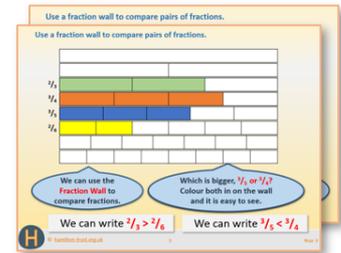


Year 6: Week 4, Day 1

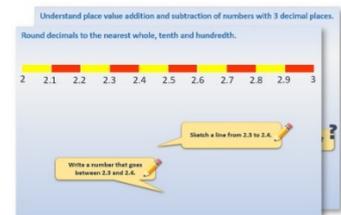
Use equivalence to compare fractions

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

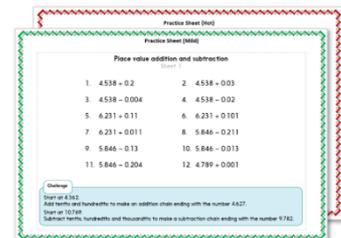
1. If possible, watch the **PowerPoint presentation** with a teacher or another grown-up.



OR start by carefully reading through the **Learning Reminders**.



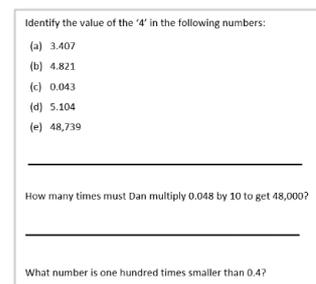
2. Tackle the questions on the **Practice Sheet**. There might be a choice of either **Mild** (easier) or **Hot** (harder)! Check the answers.



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

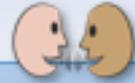


4. Have I mastered the topic? A few questions to **Check your understanding**. Fold the page to hide the answers!

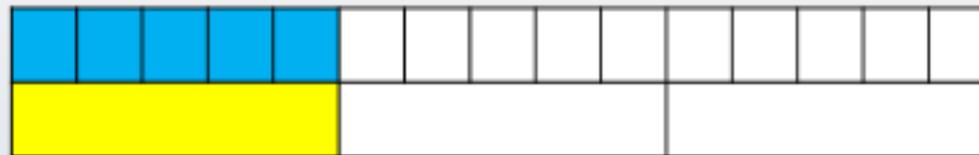


Learning Reminders

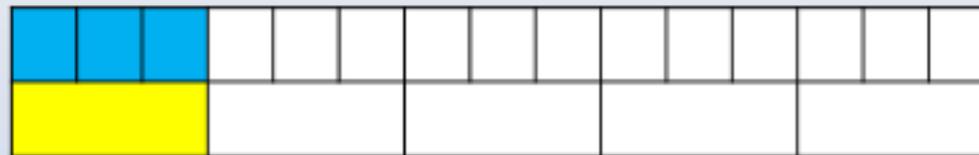
Compare fractions with different denominators using equivalence.



Which fractions with denominators less than 15 can be written as $\frac{1}{15}$ s?



$$\frac{1}{3} = \frac{5}{15}$$



$$\frac{1}{5} = \frac{3}{15}$$

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

We can write these as the same 'sort' of fractions, i.e. fractions with a common denominator, in this case $\frac{1}{15}$ s, to compare them.

Write both fractions as $\frac{1}{15}$ s, then write $>$ or $<$ to compare $\frac{2}{3}$ and $\frac{3}{5}$.

$$\frac{10}{15} \text{ and } \frac{9}{15}$$
$$\frac{2}{3} > \frac{3}{5}$$

Learning Reminders

Compare fractions with different denominators using equivalence.



List which fractions with denominators less than 20 can be written as $\frac{1}{20}$ s.

$$\frac{1}{2}\text{s}$$

$$\frac{1}{4}\text{s}$$

$$\frac{1}{5}\text{s}$$

$$\frac{1}{10}\text{s}$$



Now use equivalence with $\frac{1}{10}$ s to compare $\frac{1}{2}$ and $\frac{3}{5}$, and equivalence with $\frac{1}{20}$ s to compare $\frac{7}{10}$ and $\frac{3}{4}$.

$$\frac{5}{10} < \frac{6}{10}, \text{ so } \frac{1}{2} < \frac{3}{5}$$

$$\frac{14}{20} < \frac{15}{20}, \text{ so } \frac{7}{10} < \frac{3}{4}$$



How can we compare $\frac{7}{5}$ and $\frac{5}{4}$?

Write the fractions as mixed numbers first, and then the fractional parts of each as $\frac{1}{20}$ s.



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.

$$\frac{2}{8}$$

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

$$\frac{3}{6}$$

$$\frac{3}{9}$$

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

$$\frac{3}{12}$$

$$\frac{4}{12}$$

$$\frac{5}{10}$$

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

$$\frac{4}{8}$$

$$\frac{6}{8}$$

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

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

$$\frac{4}{6}$$

$$\frac{8}{12}$$

$$\frac{3}{4}$$

$$\frac{9}{12}$$

Challenge

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

Practice Sheet Mild

Comparing fractions

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

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

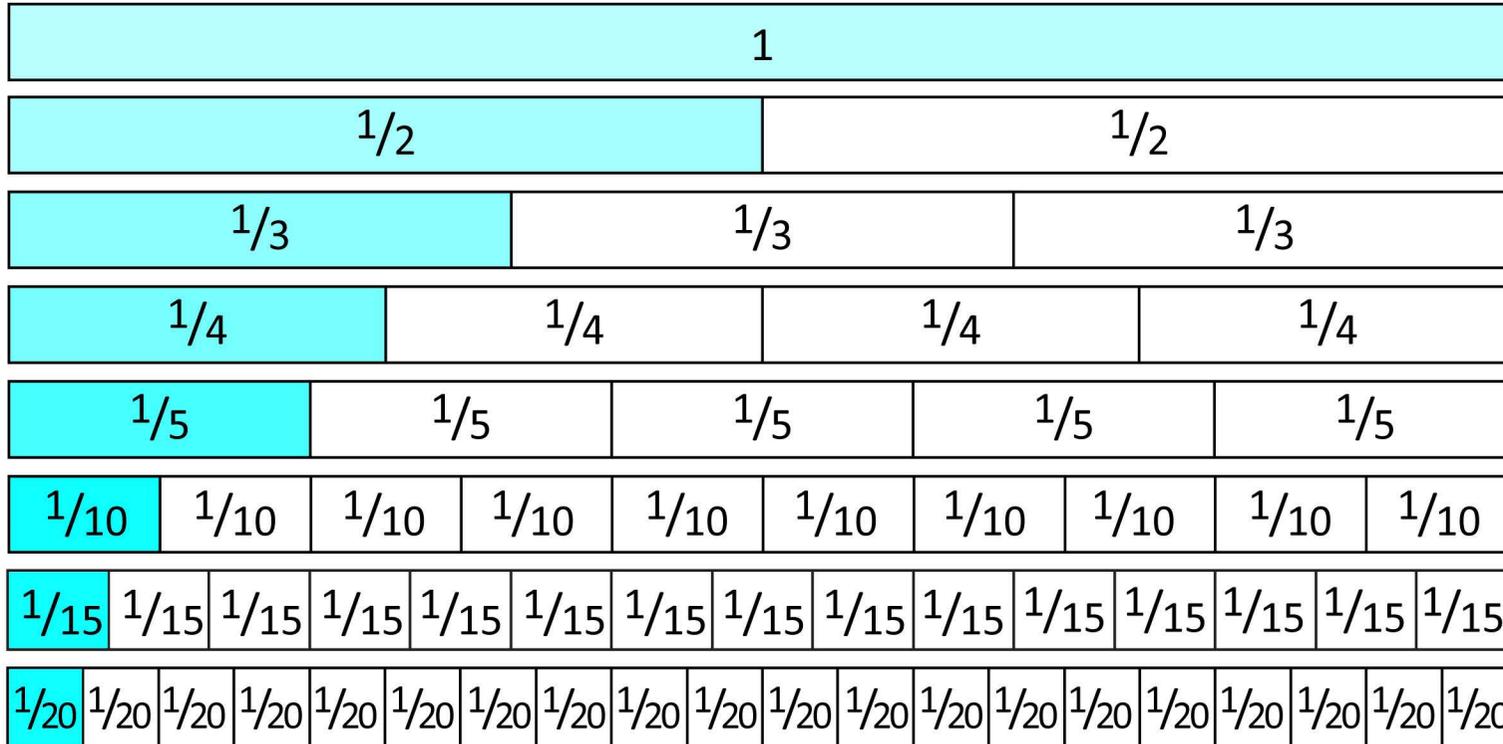
Write these fractions as $\frac{1}{10}$ s. Then write them in order, starting with the smallest first.

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

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

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

Resource Fraction wall



Practice Sheet Hot

Equivalent fractions

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

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

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

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

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

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

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

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

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 fractions

Write these pairs of fractions as the same type of fraction to help compare them.

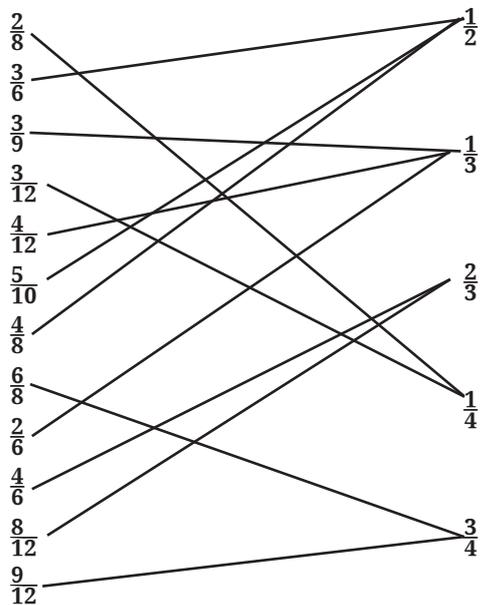
1. $\frac{1}{2}$ and $\frac{2}{5}$
2. $\frac{1}{3}$ and $\frac{2}{5}$
3. $\frac{2}{3}$ and $\frac{4}{5}$
4. $\frac{1}{4}$ and $\frac{2}{5}$
5. $\frac{3}{4}$ and $\frac{4}{5}$
6. $\frac{5}{6}$ and $\frac{7}{9}$
7. $\frac{5}{6}$ and $\frac{3}{4}$
8. $\frac{1}{3}$ and $\frac{2}{7}$

Write the groups of fractions as the same type of fraction, then write each group in order from least to greatest.

1. $\frac{1}{5}$ $\frac{1}{3}$ $\frac{4}{15}$
2. $\frac{1}{2}$ $\frac{2}{3}$ $\frac{5}{6}$
3. $\frac{1}{2}$ $\frac{3}{4}$ $\frac{2}{3}$
4. $\frac{1}{2}$ $\frac{4}{5}$ $\frac{3}{4}$
5. $\frac{1}{2}$ $\frac{5}{6}$ $\frac{7}{9}$

Practice Sheet Answers

Equivalent fractions (mild)



Challenge

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

e.g. $\frac{2}{8}$ $\frac{3}{12}$ $\frac{4}{16}$ $\frac{5}{20}$ $\frac{6}{24}$, etc.

Ordering fractions (mild)

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

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

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

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

$$\frac{1}{2} = \frac{5}{10}$$

$$\frac{2}{5} = \frac{4}{10}$$

$$\frac{3}{5} = \frac{6}{10}$$

Order smallest first: $\frac{2}{5}$ $\frac{1}{2}$ $\frac{3}{5}$

$$\frac{2}{3} = \frac{8}{12}$$

$$\frac{3}{4} = \frac{9}{12}$$

$$\frac{1}{4} = \frac{3}{12}$$

$$\frac{1}{3} = \frac{4}{12}$$

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

$$\frac{5}{6} = \frac{10}{12}$$

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

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

Practice Sheet Answers

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 written 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 fractions (hot)

- $\frac{1}{2} = \frac{5}{10} > \frac{2}{5} = \frac{4}{10}$
- $\frac{1}{3} = \frac{5}{15} < \frac{2}{5} = \frac{6}{15}$
- $\frac{2}{3} = \frac{10}{15} < \frac{4}{5} = \frac{12}{15}$
- $\frac{1}{4} = \frac{5}{20} < \frac{2}{5} = \frac{8}{20}$
- $\frac{3}{4} = \frac{15}{20} < \frac{4}{5} = \frac{16}{20}$
- $\frac{5}{6} = \frac{45}{54} = \frac{15}{18} > \frac{7}{9} = \frac{42}{54} = \frac{14}{18}$
- $\frac{5}{6} = \frac{20}{24} = \frac{10}{12} > \frac{3}{4} = \frac{18}{24} = \frac{9}{12}$
- $\frac{1}{3} = \frac{7}{21} < \frac{2}{7} = \frac{14}{21}$

- $\frac{1}{5} = \frac{3}{15}$ $\frac{4}{15}$ $\frac{1}{3} = \frac{5}{15}$
- $\frac{1}{2} = \frac{3}{6}$ $\frac{2}{3} = \frac{4}{6}$ $\frac{5}{6}$
- $\frac{1}{2} = \frac{6}{12}$ $\frac{2}{3} = \frac{8}{12}$ $\frac{3}{4} = \frac{9}{12}$
- $\frac{1}{2} = \frac{10}{20}$ $\frac{3}{4} = \frac{15}{20}$ $\frac{4}{5} = \frac{16}{20}$
- $\frac{1}{2} = \frac{9}{18}$ $\frac{7}{9} = \frac{14}{18}$ $\frac{5}{6} = \frac{15}{18}$

A Bit Stuck? Fraction families

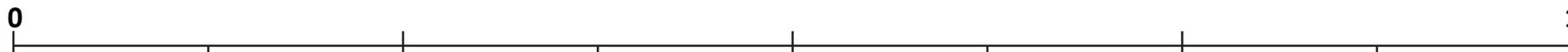
Things you will need:

- 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.

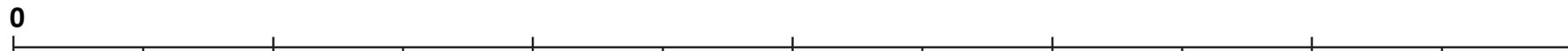


$$\frac{1}{4} = \frac{2}{8}$$

$$\frac{3}{4} =$$

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 $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$.

Learning outcomes:

- I can identify pairs of equivalent fractions on a fraction line.
- I am beginning to identify fractions which are equivalent to $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$, without the help of fraction line.

Check your understanding

Questions

Write the missing numbers.

$$\square/6 = 4/\square$$

$$6/\square = \square/20$$

$$\square/10 > 1/\square$$

$$\square/32 > \square/8$$

Write three fractions which are equivalent to $3/4$.

Write three fractions which are equivalent to $2/5$.

Now add $3/4$ and $2/5$.

Fold here to hide answers

Check your understanding

Answers

Write the missing numbers.

$$2/6 = 4/12$$

$$6/10 = 12/20$$

$$\square/10 > 1/\square \quad \text{e.g. } 6/10 > 1/2, 4/10 > 1/3$$

$$\square/32 > \square/8 \quad \text{e.g. } 20/32 > 1/8, 5/32 > 1/8.$$

For the 3rd and 4th of these many different answers are possible, are children able to explain their choice?

Write three fractions which are equivalent to $3/4$.

E.g. $6/8, 9/12, 12/16, 15/20, 30/40$.

Write three fractions which are equivalent to $2/5$.

E.g. $4/10, 6/15, 8/20, 10/25, 20/50$.

Now add $3/4$ and $2/5$. $13/20$.

The lowest common denominator is twentieths:

$$3/4 + 2/5 = 15/20 + 8/20 = 23/20 = 13/20.$$