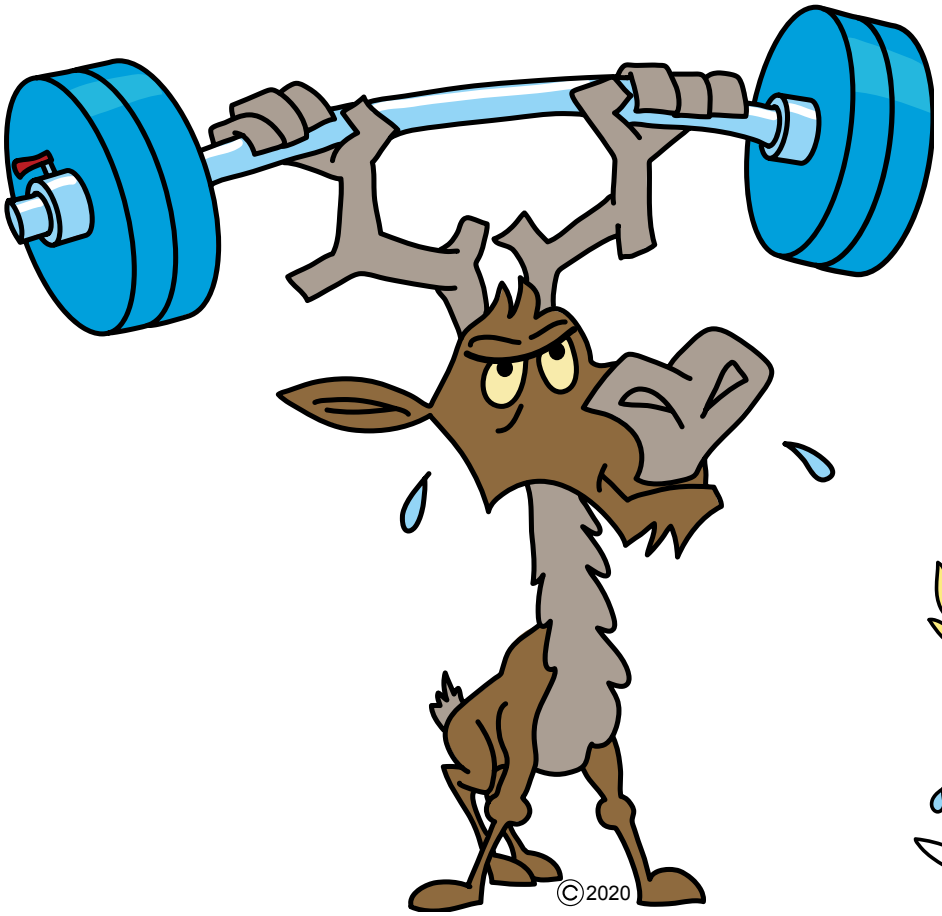
# Colin and Coco's Daily Maths Workout

## Workout 4.4

Answers

## Fractions: Representing and Equivalence




# Fractions: Workout

Workout A

Compare the fractions using < , > or =

| | | | |
|---|---|---|---|
| $\frac{1}{4} < \frac{3}{4}$ | $\frac{1}{4} < \frac{1}{2}$ | $\frac{3}{5} < \frac{3}{4}$ | $\frac{2}{7} < \frac{2}{5}$ |
| $\frac{3}{5} > \frac{1}{5}$ | $\frac{1}{3} > \frac{1}{5}$ | $\frac{3}{7} > \frac{3}{9}$ | $\frac{4}{6} = \frac{2}{3}$ |
| $\frac{4}{6} > \frac{2}{6}$ | $\frac{1}{9} < \frac{1}{6}$ | $\frac{6}{7} > \frac{6}{8}$ | $\frac{4}{8} = \frac{1}{2}$ |
| $\frac{7}{8} > \frac{6}{8}$ | $\frac{1}{7} > \frac{1}{8}$ | $\frac{5}{6} > \frac{5}{7}$ | $\frac{9}{10} > \frac{8}{9}$ |

# Fractions: Workout

Workout B

Put the fractions in order from smallest to largest.

| | | | |
|---|---|---|---|
| $\frac{3}{5}, \frac{1}{5}, \frac{4}{5}, \frac{2}{5}$ $\boxed{\frac{1}{5}\ \frac{2}{5}\ \frac{3}{5}\ \frac{4}{5}}$ | $\frac{1}{2}, \frac{1}{6}, \frac{1}{4}, \frac{1}{8}$ $\boxed{\frac{1}{8}\ \frac{1}{6}\ \frac{1}{4}\ \frac{1}{2}}$ | $\frac{3}{5}, \frac{1}{2}, \frac{1}{6}, \frac{3}{4}$ $\boxed{\frac{1}{6}\ \frac{1}{2}\ \frac{3}{5}\ \frac{3}{4}}$ |
| $\frac{3}{8}, \frac{2}{8}, \frac{4}{8}, \frac{7}{8}$ $\boxed{\frac{2}{8}\ \frac{3}{8}\ \frac{4}{8}\ \frac{7}{8}}$ | $\frac{1}{5}, \frac{1}{7}, \frac{1}{6}, \frac{1}{8}$ $\boxed{\frac{1}{8}\ \frac{1}{7}\ \frac{1}{6}\ \frac{1}{5}}$ | $\frac{2}{5}, \frac{1}{10}, \frac{1}{2}, \frac{6}{7}$ $\boxed{\frac{1}{10}\ \frac{2}{5}\ \frac{1}{2}\ \frac{6}{7}}$ |
| $\frac{1}{6}, \frac{6}{6}, \frac{4}{6}, \frac{2}{6}$ $\boxed{\frac{1}{6}\ \frac{2}{6}\ \frac{4}{6}\ \frac{6}{6}}$ | $\frac{2}{9}, \frac{2}{5}, \frac{2}{3}, \frac{2}{7}$ $\boxed{\frac{2}{9}\ \frac{2}{7}\ \frac{2}{5}\ \frac{2}{3}}$ | $\frac{3}{4}, \frac{2}{8}, \frac{3}{6}, \frac{1}{8}$ $\boxed{\frac{1}{8}\ \frac{2}{8}\ \frac{3}{6}\ \frac{3}{4}}$ |
| $\frac{6}{12}, \frac{4}{12}, \frac{3}{12}, \frac{8}{12}$ $\boxed{\frac{3}{12}\ \frac{4}{12}\ \frac{6}{12}\ \frac{8}{12}}$ | $\frac{5}{10}, \frac{5}{12}, \frac{5}{15}, \frac{5}{20}$ $\boxed{\frac{5}{20}\ \frac{5}{15}\ \frac{5}{12}\ \frac{5}{10}}$ | $\frac{4}{13}, \frac{6}{11}, \frac{5}{12}, \frac{7}{10}$ $\boxed{\frac{4}{13}\ \frac{5}{12}\ \frac{6}{11}\ \frac{7}{10}}$ |

# Fractions: Workout

Workout C

Find the missing numbers.

| | | | |
|---|---|---|---|
| $\frac{1}{3} = \frac{\boxed{2}}{6}$ | $\frac{2}{5} = \frac{\boxed{4}}{10}$ | $\frac{2}{3} = \frac{\boxed{6}}{9}$ | $\frac{\boxed{2}}{3} = \frac{12}{18}$ |
| $\frac{1}{4} = \frac{\boxed{2}}{8}$ | $\frac{3}{6} = \frac{\boxed{12}}{24}$ | $\frac{3}{4} = \frac{\boxed{6}}{8}$ | $\frac{\boxed{3}}{8} = \frac{30}{80}$ |
| $\frac{1}{6} = \frac{\boxed{3}}{18}$ | $\frac{15}{20} = \frac{\boxed{3}}{4}$ | $\frac{2}{3} = \frac{\boxed{20}}{30}$ | $\frac{21}{35} = \frac{\boxed{3}}{5}$ |
| $\frac{\boxed{2}}{16} = \frac{1}{8}$ | $\frac{1}{4} = \frac{12}{\boxed{48}}$ | $\frac{8}{12} = \frac{\boxed{2}}{3}$ | $\frac{4}{6} = \frac{\boxed{16}}{24} = \frac{\boxed{2}}{3}$ |

# Equivalent Fractions Game

Workout D

You need:
Fraction Cards (at the bottom of this page.)
Equivalent Fractions Board (next page.)
Pen/pencil/counters

To play:
Shuffle the cards and put them in a deck face down.
Take it in turns to turn over a card.
Calculate an equivalent fraction (You can not choose the fraction itself,) and colour/cover the numerator and denominator anywhere on the board. The numbers do not need to be next to each other.

I have turned over $\frac{3}{4}$ so I could make $\frac{6}{8}$ or $\frac{9}{12}$ or $\frac{12}{16}$ ...and so on.
I choose to colour a 9 and a 12 on the board.

If you can not go it is the next player's turn.
Place the card back into the deck.

To win:
The winner is the first player to colour 5 in a line, next to each other, horizontally, vertically or diagonally.

| | | | | | |
|---|---|---|---|---|---|
| $\frac{3}{4}$ | $\frac{3}{5}$ | $\frac{7}{10}$ | $\frac{4}{5}$ | $\frac{5}{8}$ | $\frac{3}{10}$ |

| | | | |
|---|---|---|---|
| $\frac{3}{8}$ | $\frac{7}{8}$ | $\frac{2}{3}$ | $\frac{2}{5}$ |

# Equivalent Fractions Board

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4 | 10 | 30 | 16 | 21 | 15 | 24 | 20 |
| 16 | 6 | 32 | 9 | 24 | 16 | 8 | 30 |
| 9 | 40 | 8 | 35 | 4 | 14 | 32 | 6 |
| 12 | 4 | 25 | 15 | 8 | 28 | 20 | 12 |
| 15 | 20 | 14 | 50 | 40 | 12 | 9 | 21 |
| 8 | 24 | 12 | 28 | 6 | 32 | 10 | 18 |
| 6 | 10 | 8 | 21 | 15 | 4 | 50 | 20 |
| 16 | 30 | 18 | 12 | 16 | 35 | 9 | 25 |

# Missing Number Workout

Workout E

Put digits in the empty boxes to make the statements correct.
Complete each one in several different ways.

Possible Solution

$$\frac{4}{7} > \frac{2}{7}$$

$$\frac{3}{6} = \frac{9}{18}$$

$$\frac{4}{10} < \frac{4}{5}$$

Are there any boxes that it is impossible to put a 0 in?
Why?

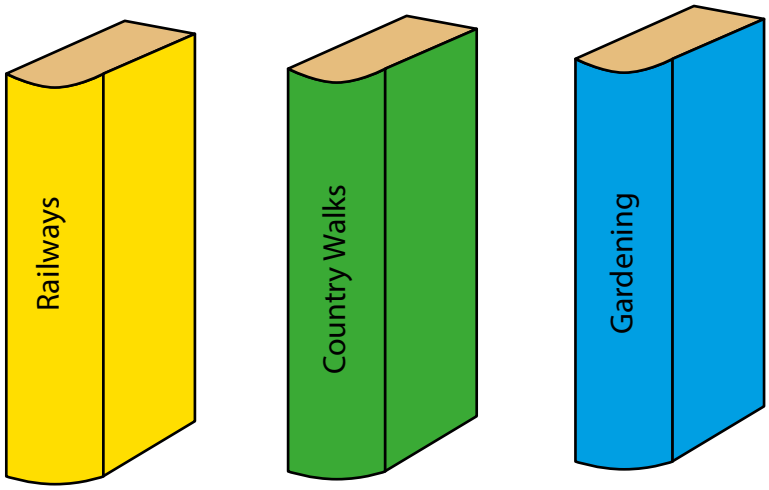
Are there any boxes that could have any of the digits in them?

Now complete it using the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 once each.

# Shelves Challenge

Workout F

Colin is sorting out his books.
He is filling one shelf with three different types of books.

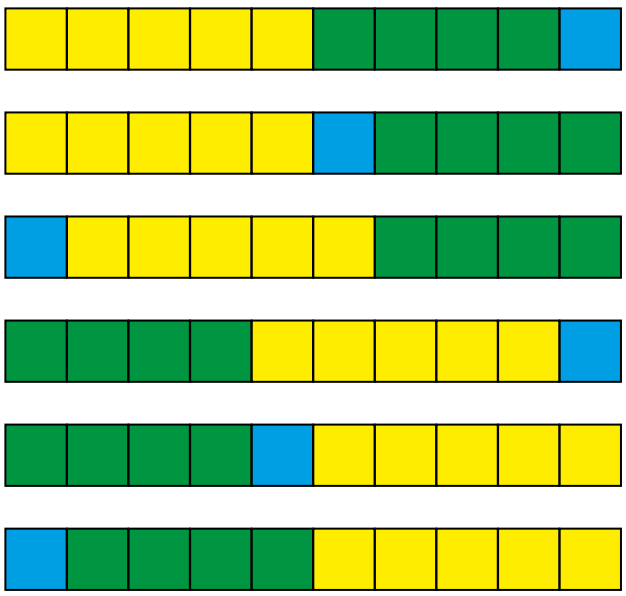



$\frac{1}{2}$ of the shelf is filled with the Railway books.

The Country Walks books fill $\frac{2}{5}$ of the shelf.

$\frac{1}{10}$ of the shelf is filled with the Gardening books.

Obviously, Colin does not want to split up books of the same type.
Investigate different ways he could organise his shelf.



How would this change if he split his Country Walks books into two equal parts?

# Word Problem Workout

Workout G

Coco climbs $\frac{3}{5}$ of the way up the mountain.
Colin climbs $\frac{3}{8}$ of the way up the mountain.

Who has climbed further up the mountain? Coco

Colin eats $\frac{7}{10}$ of his cake. Coco eats $\frac{7}{8}$ of her cake.
Who has eaten more of their cake?

Coco

Colin fills $\frac{3}{4}$ of a book shelf with Animal books.
He fills $\frac{7}{8}$ of a book shelf with History books.
(The shelves are the same size!)
Are there more History or Animal books?

History

Coco shades $\frac{1}{5}$ of a shape in green.
Colin shades $\frac{1}{6}$ of the same shape in blue.
Which colour is there more of? green

Coco is making a fruit salad.
$\frac{3}{5}$ of the salad is apples. Oranges make up $\frac{3}{10}$ of the salad.
Bananas make up $\frac{1}{10}$ of the salad.
Put the fruit in order of quantity in the salad, from most to least.

apples, oranges, bananas

Create your own problems to compare or order fractions.

# 1 - 20 Workout

Workout H

Using the digits from today's date create all the numbers from 1 - 20. You can use any or all of the four operations. You must use all the digits every time.

| | |
|---|---|
| 1 | 11 |
| 2 | 12 |
| 3 | 13 |
| 4 | 14 |
| 5 | 15 |
| 6 | 16 |
| 7 | 17 |
| 8 | 18 |
| 9 | 19 |
| 10 | 20 |