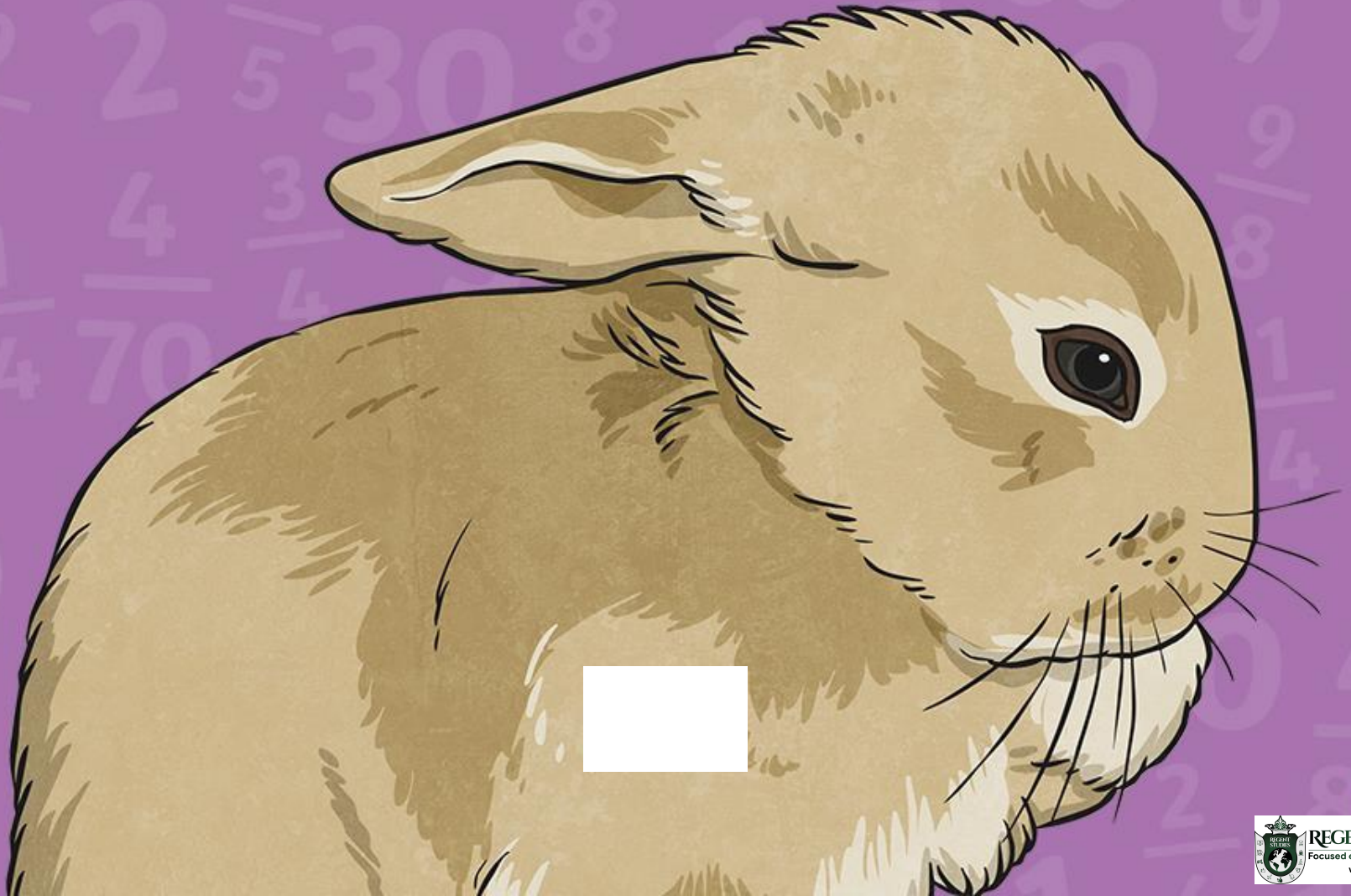




Maths

Fractions

Word Problems



Aim

- I can multiply proper fractions together, writing the answer in its simplest form.

Success Criteria

- I can multiply numerators together first and multiply denominators together second.
- I can reduce a fraction to its simplest form by dividing the numerator and denominator by the greatest common factor.

Simplifying Fractions Spinner



Use common factors to
simplify

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

Click

S

Back

$\frac{8}{4}$

$\frac{4}{12}$

$\frac{20}{25}$

Multiplying Proper Fractions



Look at this word problem:

Meera has a bag of sweets.

$\frac{3}{8}$ of the sweets are fizzy. Of these fizzy sweets, $\frac{2}{5}$ are red.

What fraction of the sweets are fizzy and red?



Let's visualise the fraction problem using a bar model to understand how to solve it.

Multiplying Proper Fractions



Meera has a bag of sweets.

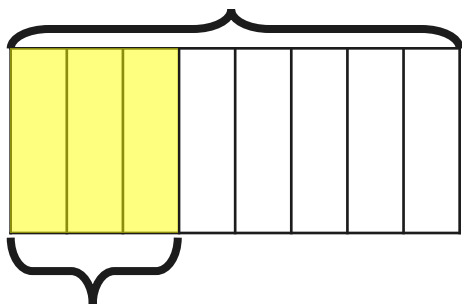
$\frac{3}{8}$ of the sweets are fizzy. Of these fizzy sweets, $\frac{2}{5}$ are red.

What fraction of the sweets are fizzy and red?



First, let's represent the whole bag of sweets. We are told that $\frac{3}{8}$ of all the sweets are fizzy, which means the whole bag equals $\frac{8}{8}$.

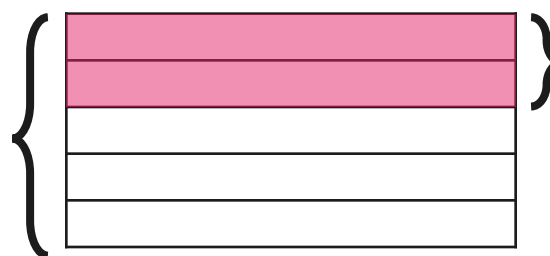
whole bag of sweets



fizzy sweets

Next, we are told that $\frac{2}{5}$ of the fizzy sweets are red. Let's represent the fizzy sweets as $\frac{5}{5}$ and shade $\frac{2}{5}$ red.

fizzy sweets



fizzy and red sweets

Multiplying Proper Fractions



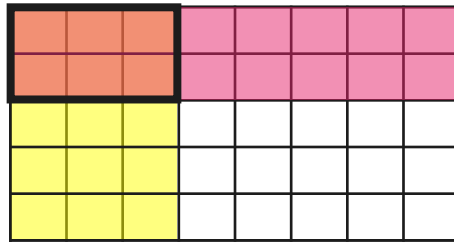
Meera has a bag of sweets.

$\frac{3}{8}$ of the sweets are fizzy. Of these fizzy sweets, $\frac{2}{5}$ are red.

What fraction of the sweets are fizzy and red?



Now, when we combine these two bar models, we will be able to see the fraction of the whole bag that is fizzy and red:



We can see that $\frac{6}{40}$ of the whole bag of sweets are fizzy and red.

We can simplify this fraction from $\frac{6}{40}$ to $\frac{3}{20}$.

To solve this problem, we have found out what $\frac{2}{5}$ of $\frac{3}{8}$ is, which is the same as $\frac{2}{5} \times \frac{3}{8}$.

Multiplying Proper Fractions



We now know that solving the word problem involves multiplying proper fractions.

If we want to, we can use the fraction rules to find the answer without drawing the bars.

1. Multiply the numerators together.

$$\frac{2}{5} \times \frac{3}{8} = \frac{6}{40} = \frac{3}{20}$$

2. Multiply the denominators together.

3. If necessary, simply the fraction by dividing by the greatest common factor.

Have a go at solving this word problem using either method:

A group of children play musical instruments.

$\frac{2}{6}$ of the children play woodwind instruments. Of these children, $\frac{3}{5}$ play the flute.

What fraction of all the children play the flute?

Multiplying Proper Fractions

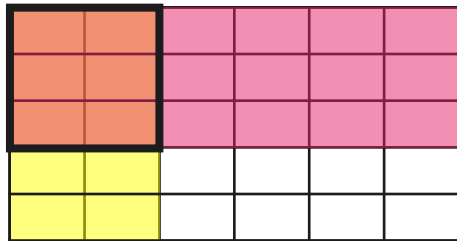


A group of children play musical instruments.

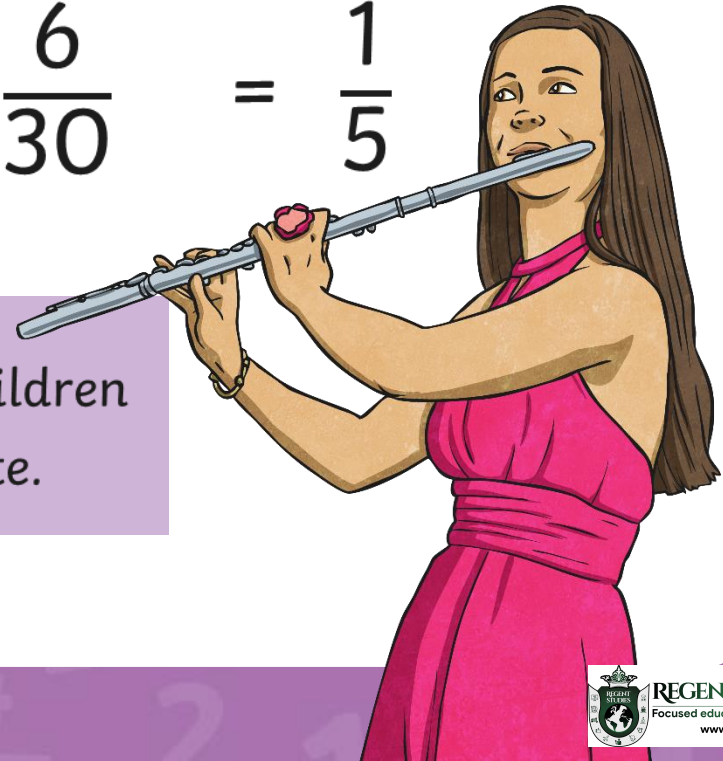
$\frac{2}{6}$ of the children play woodwind instruments. Of these children, $\frac{3}{5}$ play the flute.

What fraction of all the children play the flute?

$$\frac{3}{5} \times \frac{2}{6} = \frac{6}{30} = \frac{1}{5}$$



$\frac{1}{5}$ of all the children play the flute.



Multiplying Proper Fractions



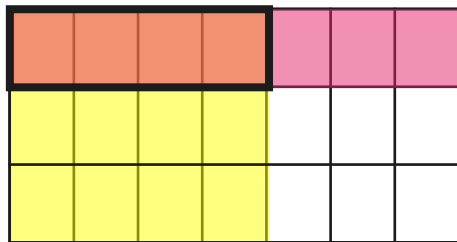
Have a go at solving this problem:

In a pet shop, $\frac{4}{7}$ of the animals are mammals.

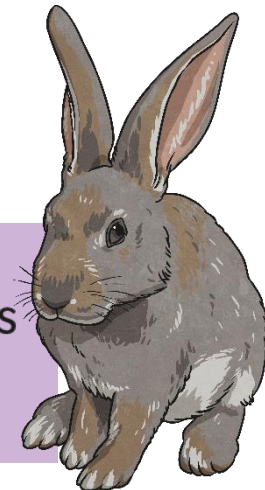
Of the mammals, $\frac{1}{3}$ are rabbits.

What fraction of the animals in the whole pet shop are rabbits?

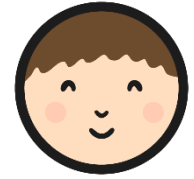
$$\frac{1}{3} \times \frac{4}{7} = \frac{4}{21}$$



$\frac{4}{21}$ of all the animals are rabbits.



Multiplying Fractions Word Problems



Multiplying Fractions Word Problems

I can multiply simple pairs of proper fractions, writing the answer in its simplest form.

For each word problem, multiply the fractions together to find the answer. Show your working out.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. A group of children play in an orchestra. $\frac{3}{4}$ of the children play a brass instrument. Of these children, $\frac{2}{5}$ play a trumpet. What fraction of the group of children play a trumpet?</p> <p>If there are 40 children altogether, how many play the trumpet?</p> | <p>2. Sammy has a bag of sweets. $\frac{2}{5}$ of the sweets are fizzy. Of these fizzy sweets, $\frac{3}{4}$ are orange. What fraction of the bag of sweets are fizzy and orange?</p> <p>If there are 60 sweets altogether, how many are fizzy and orange?</p> |
| <p>3. At the local zoo, $\frac{5}{8}$ of the creatures have fur. Of these furry animals, $\frac{1}{3}$ are lions. What fraction of all the creatures are lions?</p> <p>If there are 135 creatures altogether, how many lions are there?</p> | <p>4. Aziz grows vegetables in his garden. $\frac{4}{7}$ of the vegetables grow underground. Of these underground vegetables, $\frac{3}{8}$ are potatoes. What fraction of all the vegetables are potatoes?</p> <p>If there are 70 vegetables altogether, how many potatoes are there?</p> |
| <p>5. At the local Italian restaurant, $\frac{5}{8}$ of the meals are pasta dishes. Of these pasta dishes, $\frac{2}{3}$ use spaghetti. What fraction of all the dishes use spaghetti?</p> <p>If there are 63 dishes altogether, how many use spaghetti?</p> | <p>6. Sandra picked $\frac{7}{10}$ of a plant's strawberries. She made a pot of jam which used $\frac{3}{5}$ of the strawberries. What fraction of the plant's strawberries went into the pot of jam?</p> <p>If Sandra picked 108 strawberries, how many strawberries did she use to make one pot of jam?</p> |

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Reveal the Picture



How to Play:

You will need to use what you have learnt about multiplying proper fractions to answer the questions.

Think carefully about the question and share your answer. If you get it correct, click on the box once to check your answer and then again to reveal a part of the picture.

The more you get correct, the more of the picture you will see!



Reveal the Picture



$$\frac{1}{3} \times \frac{3}{8}$$

$$\frac{1}{4} \times \frac{2}{5}$$

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

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

$$\frac{1}{6} \times \frac{5}{7}$$

$$\frac{2}{6} \times \frac{3}{7}$$

$$\frac{1}{2} \times \frac{5}{6}$$

$$\frac{2}{5} \times \frac{3}{6}$$

$$\frac{2}{4} \times \frac{3}{5}$$

$$\frac{2}{3} \times \frac{2}{8}$$

$$\frac{3}{4} \times \frac{4}{5}$$

$$\frac{2}{3} \times \frac{5}{8}$$

$$\frac{3}{5} \times \frac{2}{4}$$

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