

Y2 A2 Mathematics therapy

Commissioned by The PiXL Club Ltd.
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Y2 A2 M4d Can write and solve
simple fractions such as

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



= Teacher Notes



Teacher Information

The A2 version of this therapy is intended to support teachers in ensuring that a pupil is secure within the Expected Standard for Year 2, as well as providing additional challenge (Think It) to move pupils towards Above Expected standard.

The component parts are:

- Expected standard therapy
- Expected standard Show Me tasks
- Think It questions
- Above Expected Show Me tasks (within this therapy)
- Above Expected therapy test (separate resource)



How to use this resource

The A2 resources are flexible in their use. However, some suggestions are:

- a) If needed, the Expected Standard therapy could be delivered, followed by the Show Me tasks. If a pupil demonstrates security, they could move on to the Think It section in the next session.
- b) Deliver only the Expected Standard Show Me tasks to check on security then move straight on to the Think It section (should pupils be able to perform the taught skill independently and consistently).
- c) Should there already be sufficient evidence of security within the Expected Standard, it may be appropriate to move straight to the Think It section.



Teacher Information

Whilst pictures are provided throughout the therapy to practise the skill the following resources would be useful: base ten equipment, counters, multilink cubes, counting sticks or any classroom objects that can be used for finding a fraction.

The Whole as a Quantity

A whole is a thing that is complete in itself. A whole isn't just an object but can be a quantity. Below all the cherries in this bowl make a whole. Also, the two cherries can also be a whole.

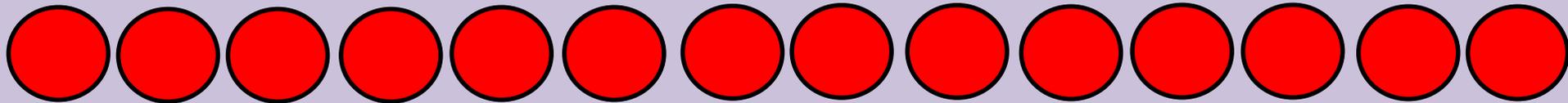


Solving Fractions

To solve any fraction we need to share the whole into equal parts. The amount of equal parts is determined by the denominator.

Find $\frac{1}{2}$ of 14.

As $\frac{1}{2}$ has a denominator of 2 we know we are sharing the whole (14) into 2 equal parts.



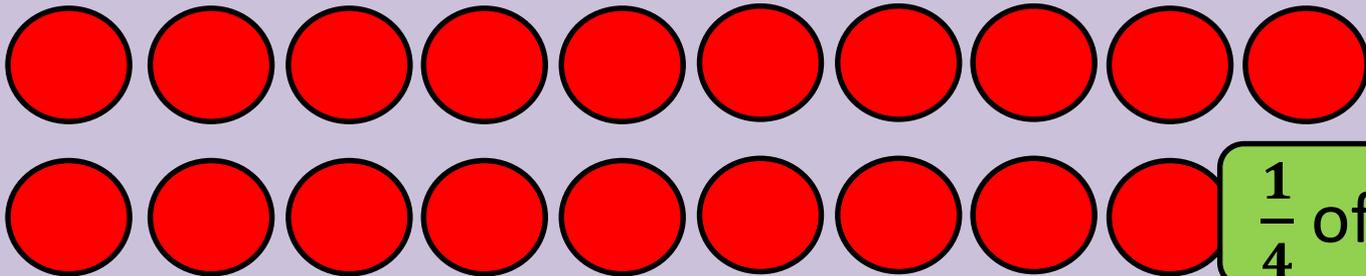
$$\frac{1}{2} \text{ of } 14 = 7$$

Solving Fractions

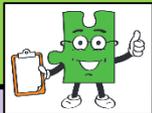
Find $\frac{1}{4}$ of 20.

How many equal parts do we have to share the whole into? How do you know?

The denominator is 4 so we need to share 20 between 4.

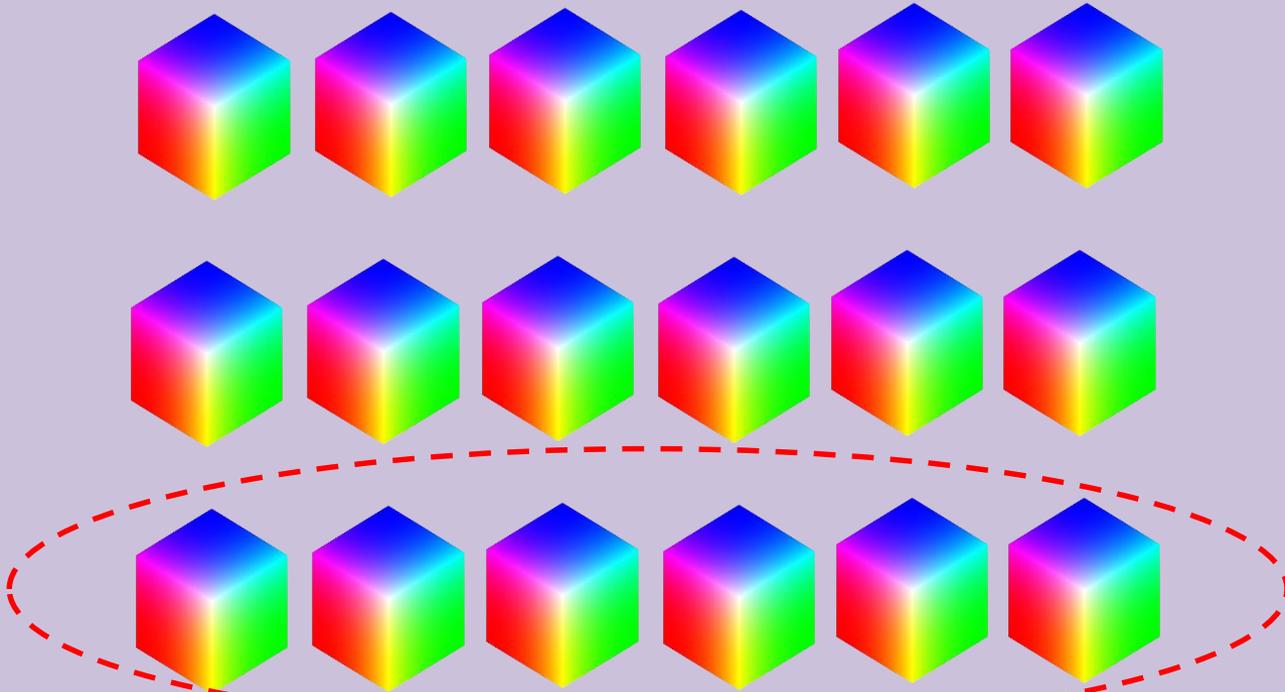


Organising your resources in rows helps you see that each part is equal without having to keep counting them.



Practise

Find $\frac{1}{3}$ of 18.

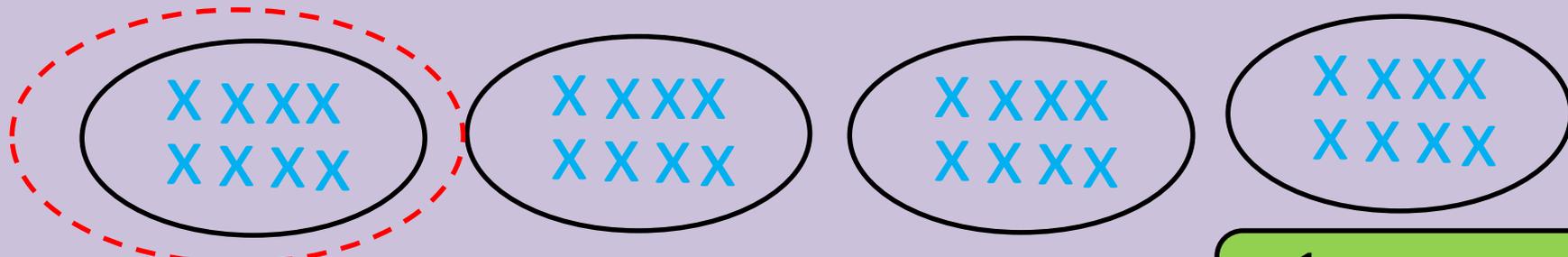


$$\frac{1}{3} \text{ of } 18 = 6$$

Solving Fractions

You can also use jottings, instead of objects, to work out a fraction. Find $\frac{1}{4}$ of 32.

Draw four circles as the denominator is 4. Then put a cross in each circle, one at a time, until you get to 32. Count how many crosses are in the circles. If there is an equal amount in each circle you have found a quarter.



X X X X
X X X X

X X X X
X X X X

X X X X
X X X X

X X X X
X X X X

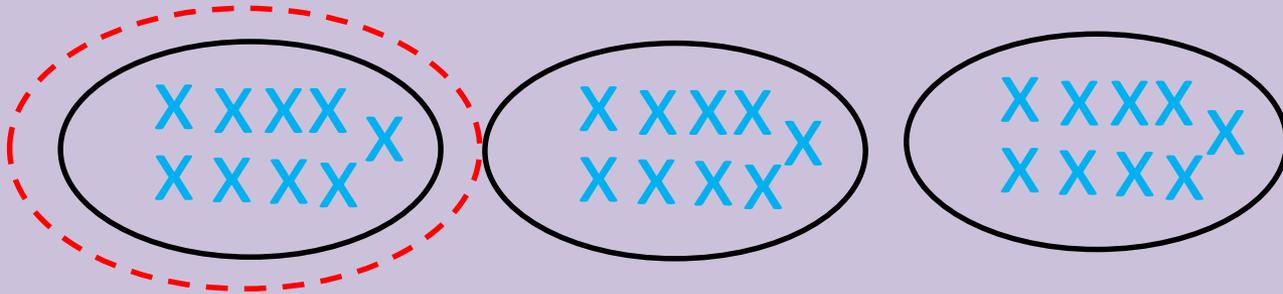
$$\frac{1}{4} \text{ of } 32 = 8$$



Keep your jottings in an order as it helps your accuracy.

Practise

Find $\frac{1}{3}$ of 27 using jottings.

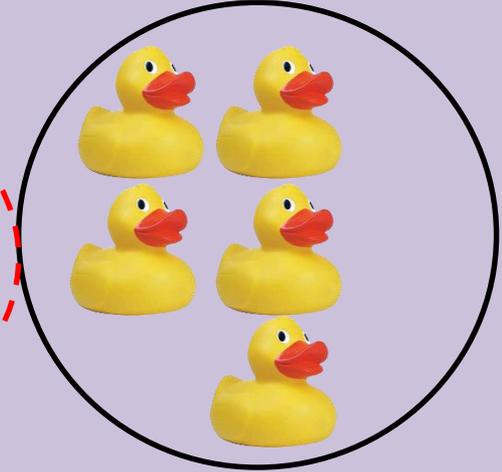
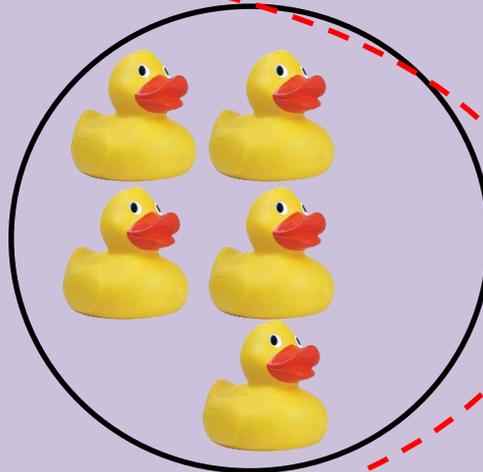
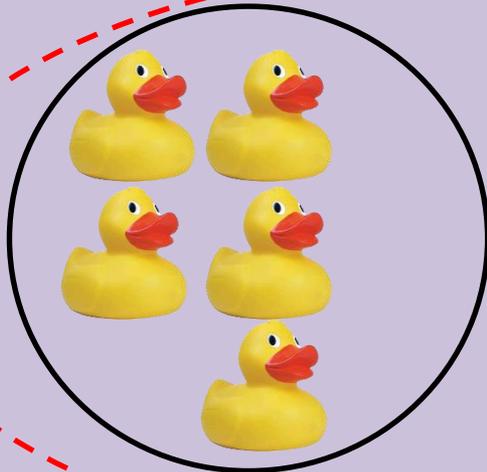


$$\frac{1}{3} \text{ of } 27 = 9$$

Solving Fractions

If the numerator is more than 1 you still need to find one part of the fraction. Then just add the number of parts together that is determined by the numerator.

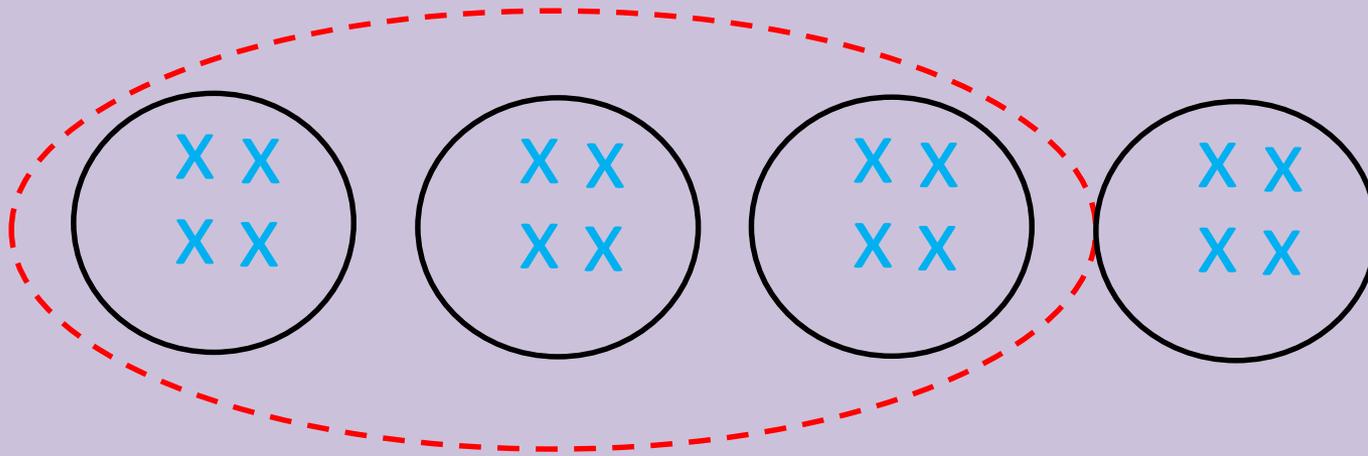
Find $\frac{2}{3}$ of 15.



As the numerator is 2 we need to add two parts together. $\frac{2}{3}$ of 15 is $5 + 5 = 10$

Practise

Find $\frac{3}{4}$ of 16.



$$\frac{3}{4} \text{ of } 16 \text{ is } 4 + 4 + 4 = 12$$

Practise



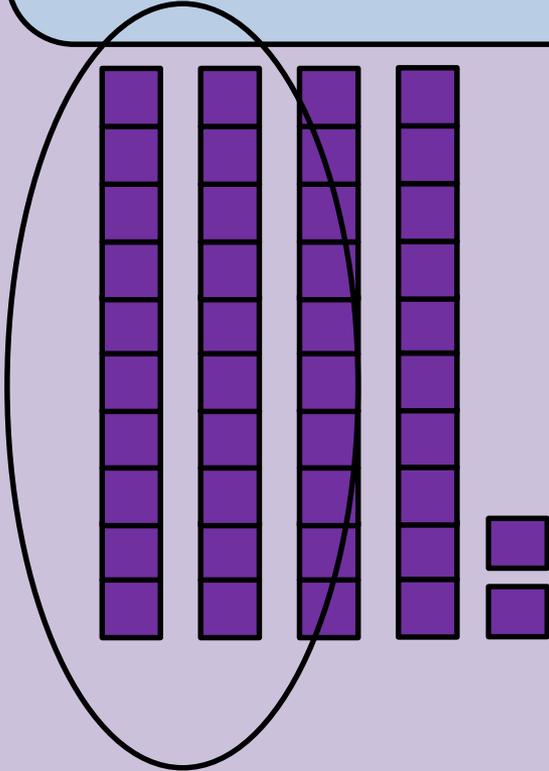
Give children different amounts and fractions to practise this skill. Allow children to use objects to support them if they choose to.



Children must be confident finding fractions of smaller amounts using objects or jottings before moving on to using base ten equipment.

Solving Fractions

For larger quantities, jottings and objects will take too much time. Try using some base ten equipment and share the tens and units into equal parts. Find $\frac{1}{2}$ of 42.

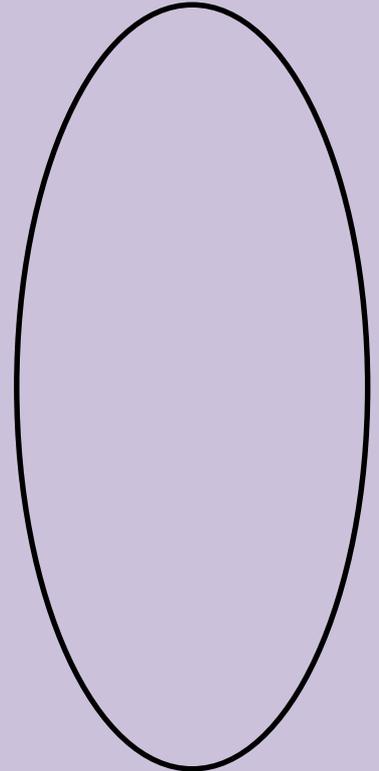
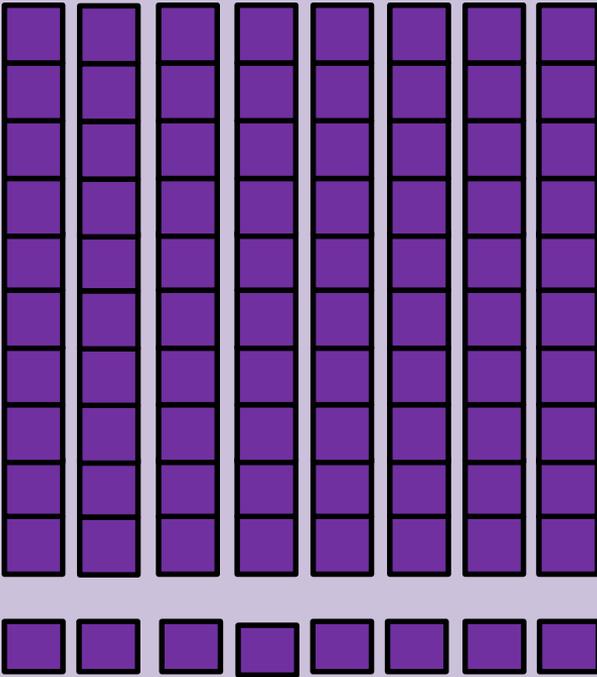


What resource will be helpful for bigger numbers?

Half of 42 = 21

Practise

Find $\frac{1}{4}$ of 88.



$$\frac{1}{4} \text{ of } 88 = 22$$



Show Me Tasks

Once the therapy has been delivered you can use Show Me Tasks to demonstrate that the skill is now secure. They are not intended to be completed all at once and ideally should be done in intervals of a few days after the therapy has been delivered. The challenge in the tasks is progressive.

Show Me Tasks

Can write and solve simple fractions such as

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

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February 2018

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Solve the following fractions.
Select any resource you need to help support you.

$$\frac{1}{2} \text{ of } 24$$

$$\frac{1}{4} \text{ of } 32$$

$$\frac{1}{3} \text{ of } 21$$

Solve the following two fractions.

$$\frac{3}{4} \text{ of } 12$$

$$\frac{2}{3} \text{ of } 12$$

Once solved, write the two fractions as an inequality e.g. $\frac{1}{2} > \frac{1}{4}$.

Basil Bear is very greedy. He has been offered $\frac{1}{3}$ of 24 jars of honey or $\frac{1}{2}$ of 24 jars of honey. To get the most honey which option should he choose?



Explain your reasoning.

Teacher Guidance

The intention of the Think It section of this resource is to provide greater challenge for pupils who have demonstrated security within the Expected Standard. It is suggested that the Think It questions are best delivered as part of a guided group. In this way, pupils' verbalisation of their reasoning and mathematical processes can provide valuable assessment information, as well as providing a context for probing questions and additional challenge.

Teacher Guidance

Having worked on the Think It questions, the expectation is the pupil completes the two Show Me tasks independently. The additional A2 therapy test (separate to this resource) is intended to provide a bridge to the Year 3 therapy test format and move pupils towards greater independence.

Additional PiXL resources designed to demonstrate a deeper understanding within subjects are:

[The PiXL Progression Ladders](#)
[The PiXL Knowledge Mats – Think It](#)



Kim

I think finding a fraction is a bit like division.

Do you agree or disagree with Kim? Support your answer with reasons why you agree or disagree. You can use diagrams or calculations to help support your answer.

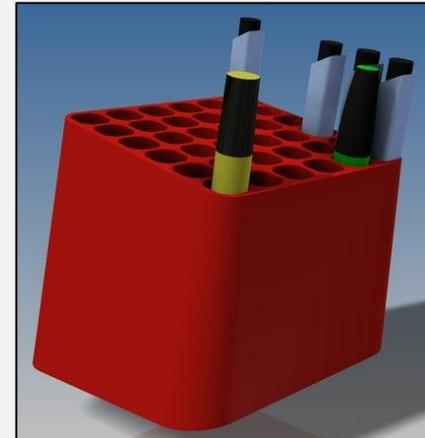
In the science cupboard, there was a box of bug viewers that was $\frac{3}{4}$ full (Box A) and another box (Box B) that was $\frac{2}{3}$ full. When full, each box holds 24 bug viewers.



Mr Leaming wanted Gavin to get the box with the most bug viewers in it. Which box should he choose? Show your workings.

In a pencil pot, there are 4 green pens. There are twice the amount of purple pens than yellow pens. There are the same amount of green and purple pens. A third of all the pens in the pot are red.

- a) How many green pens are there?
- b) How many purple pens are there?
- c) How many yellow pens are there?
- d) How many red pens are there?



Tip: A bar model may help solve the last part of this question.

Show Me Tasks

Y2 A2 M4d Can write and solve simple fractions such as $\frac{1}{2}$ of $6 = 3$

Would you rather have $\frac{1}{3}$ or $\frac{1}{4}$
of £36? Explain your
reasoning



Can you make up a similar
challenge for your partner?

Fill in a missing fraction to make
each inequality true. Prove your
answers by finding the relevant
fractions of an amount.

$$\frac{1}{2} < \frac{\square}{\square}$$

$$\frac{1}{2} > \frac{\square}{\square}$$

$$\frac{1}{2} = \frac{\square}{\square}$$