

Y2 A2 Mathematics therapy

Commissioned by The PiXL Club Ltd.
November 2019

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Y2 A2 M4b Can find $\frac{3}{4}$ of a shape or
set of objects



= 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.

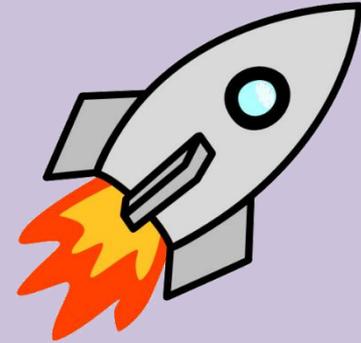


Teacher Information

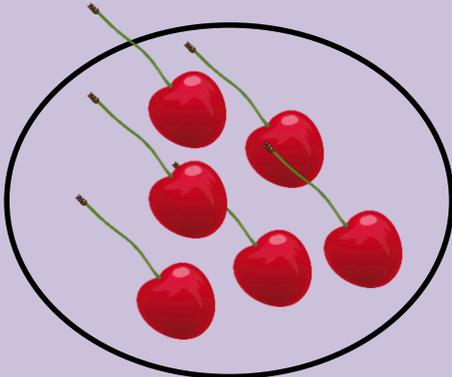
Whilst pictures are provided throughout the therapy to practise the skill, the following resources would be useful: counters, multilink cubes, counting sticks, coins or any classroom objects that can be used for quartering.

What is a Whole?

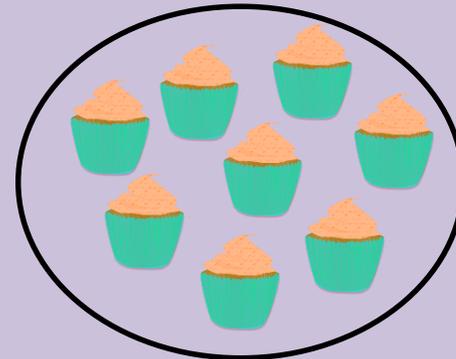
A whole is a thing that is complete in itself.



This is a whole football, house and rocket. A whole can also be a set of objects.



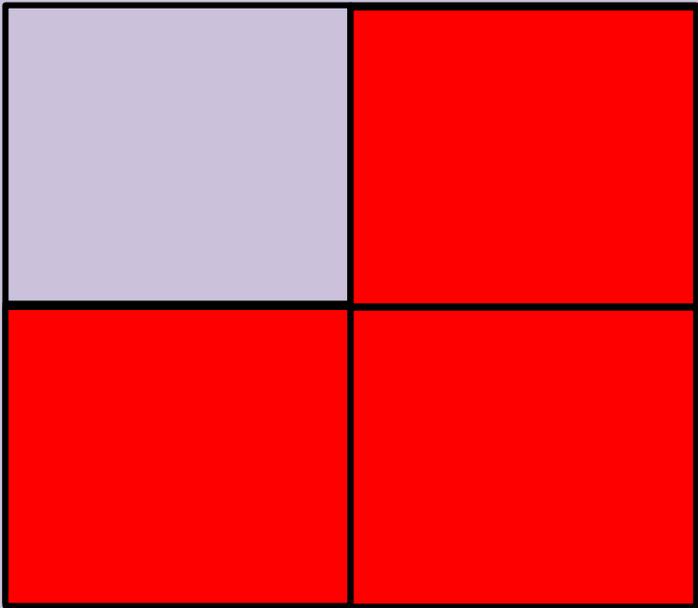
These 6
cherries
are the
whole.



These 8
cupcakes
are the
whole.

What is Three Quarters?

We know that a quarter is one of four **equal** parts of a whole. Three quarters will be three of these parts added or put together.



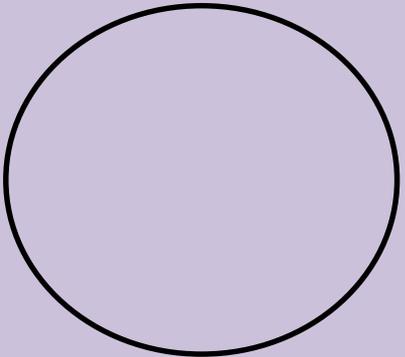
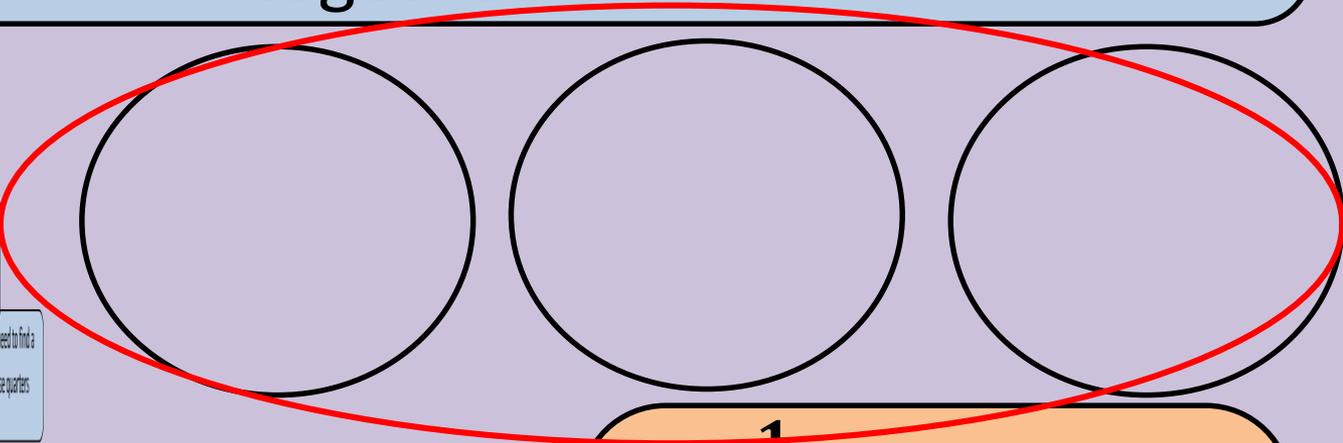
This square has been divided into quarters (four equal parts).

To show three quarters I shade three of the four quarters.

Finding $\frac{3}{4}$ of a Set of Objects

To find $\frac{3}{4}$ of a set of objects we first need to find a quarter and then add three of those quarters together.

To find $\frac{1}{4}$ of a set of objects we first need to find a quarter and then add three of those quarters together.	To find $\frac{1}{4}$ of a set of objects we first need to find a quarter and then add three of those quarters together.	To find $\frac{1}{4}$ of a set of objects we first need to find a quarter and then add three of those quarters together.
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$\frac{1}{4}$ of 12 = 3

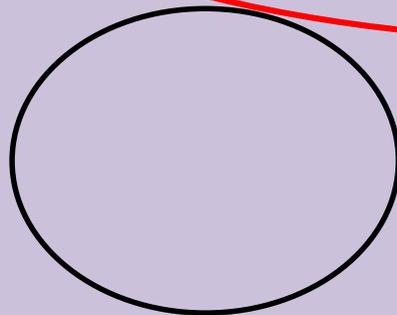
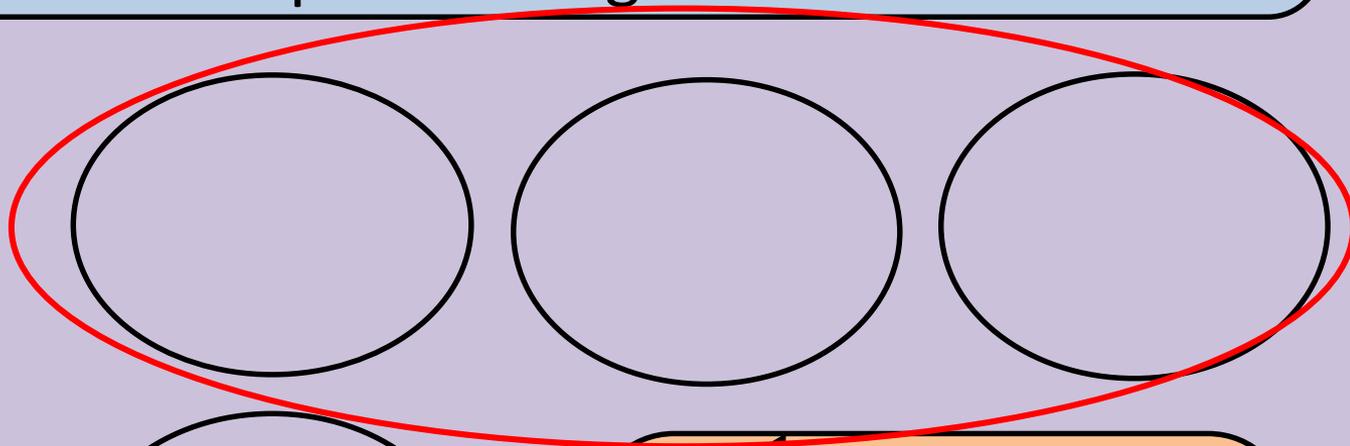
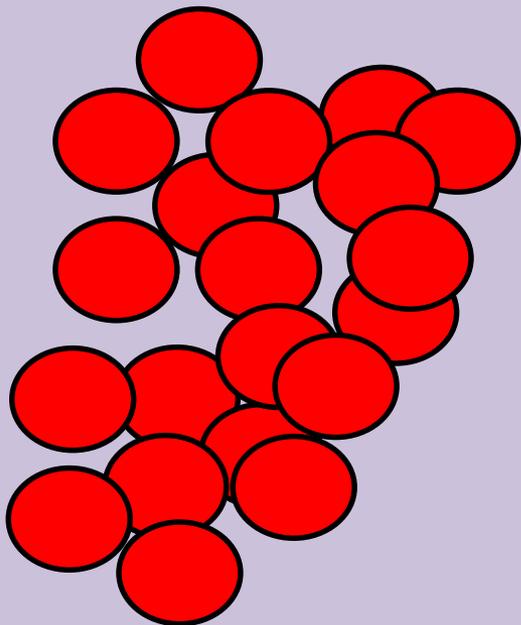
so

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

$3 + 3 + 3 = 9$

Finding $\frac{3}{4}$ of a Set of Objects

Here are 20 counters. Let's find $\frac{3}{4}$ of the counters. Don't forget to start by finding one quarter and then add three of those quarters together.



$$\frac{1}{4} \text{ of } 20 = 5$$

so

$$\frac{3}{4} \text{ of } 20 \text{ is}$$

$$5 + 5 + 5 = 15$$

Practise

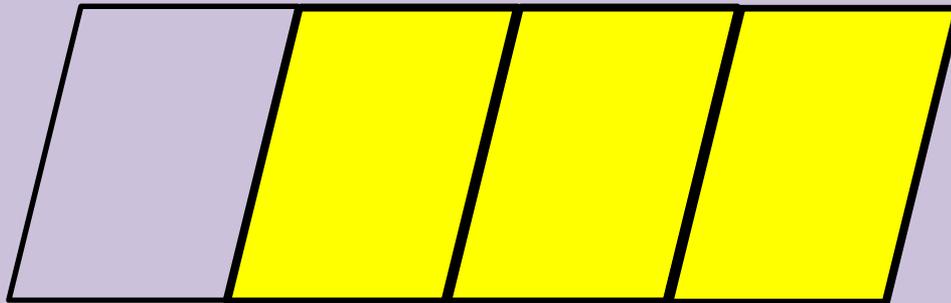
★ Provide children with several groups of objects (divisible by 4) from around the classroom and ask them to find three quarters of each set.



Make sure each of the four parts are equal.
Check your addition of the three quarters.

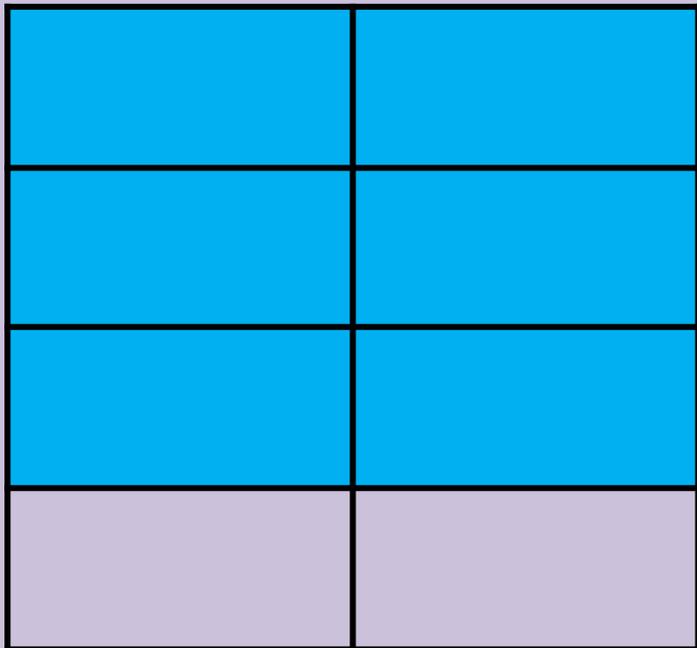
Finding $\frac{3}{4}$ of a Shape

If a shape is divided into four equal parts it is easy to show $\frac{3}{4}$ as we just need to colour three of the four parts.



Finding $\frac{3}{4}$ of a Shape

This square has more than four equal parts. To check if $\frac{3}{4}$ has been shaded count the total number of parts the shape has been divided into. Find a quarter of that number. Finally, add three of these quarters together.



The shape has 8 parts.

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

so

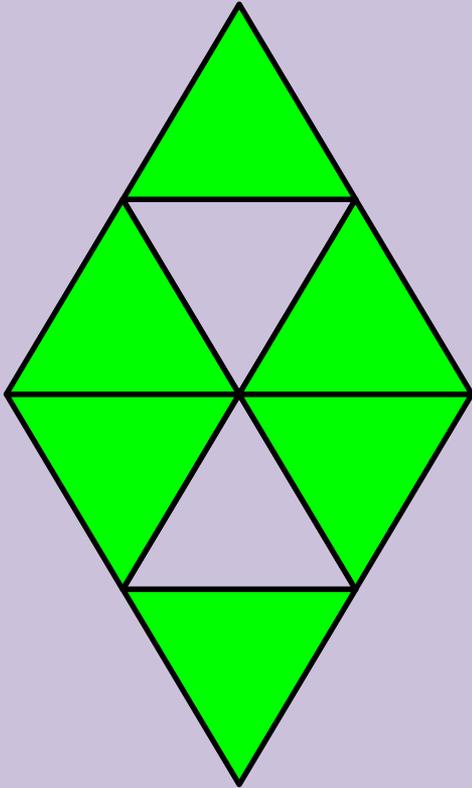
$$\frac{3}{4} \text{ of } 8 \text{ is}$$

$$2 + 2 + 2 = 6$$

$\frac{3}{4}$ of the shape is shaded as 6 parts are blue.

Practise

Is a quarter of this shape shaded?



Tip: Find how many parts will be a quarter and then add 3 of that answer.

This shape has 8 parts.

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

so

$$\frac{3}{4} \text{ of } 8 \text{ is}$$

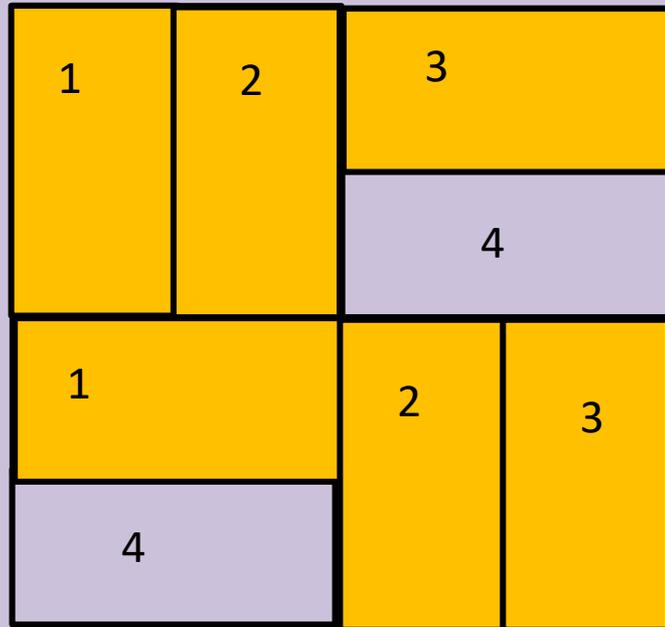
$$2 + 2 + 2 = 6$$

$\frac{3}{4}$ of the shape is shaded as 6 parts are green.

Finding $\frac{3}{4}$ of a Shape

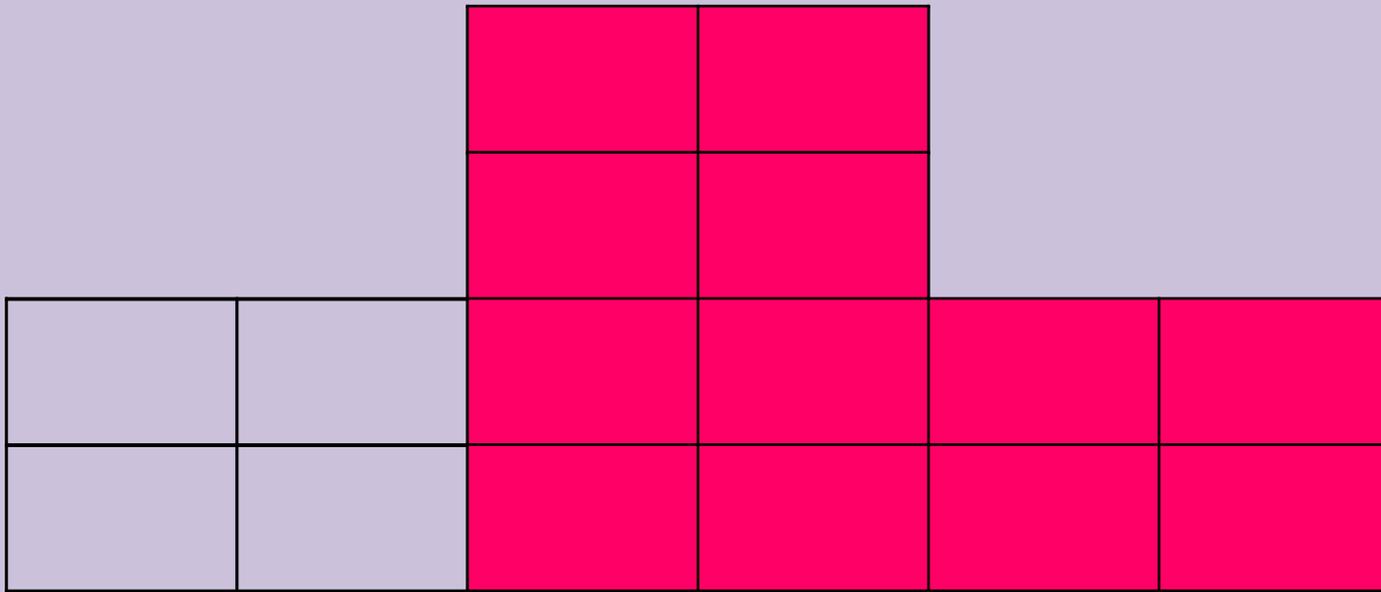
To shade $\frac{3}{4}$ of a shape, number each part 1,2,3,4.

When you get to 4 start at 1 again. Then shade all the parts that have a number 1, 2 and 3 as you need to shade $\frac{3}{4}$. You will now have shaded $\frac{3}{4}$ of this shape.



Practise

Find $\frac{3}{4}$ of this shape.



This shape has 16 parts. $\frac{1}{4}$ of 16 = 4

so

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



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 find $\frac{3}{4}$ of a shape or set of objects

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February 2018

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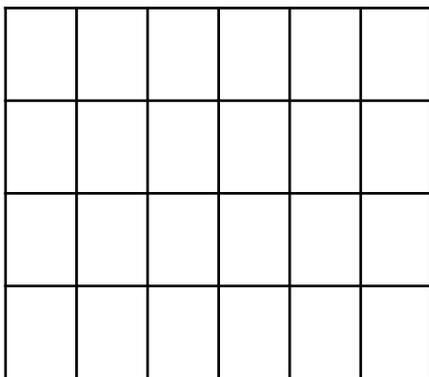
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Show how you can find $\frac{3}{4}$ of a set of objects.



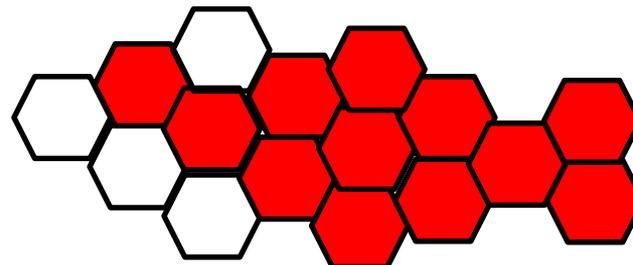
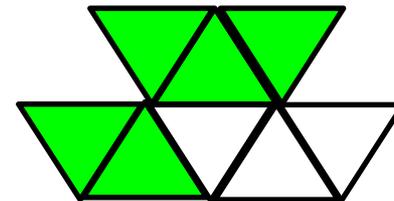
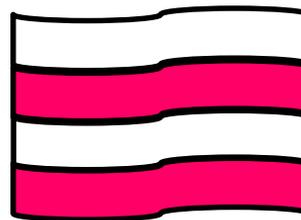
Give child a group of objects divisible by 4.

Shade $\frac{3}{4}$ of this shape.



How did you know how many squares to colour?

Tick the shape that has $\frac{3}{4}$ shaded. 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:

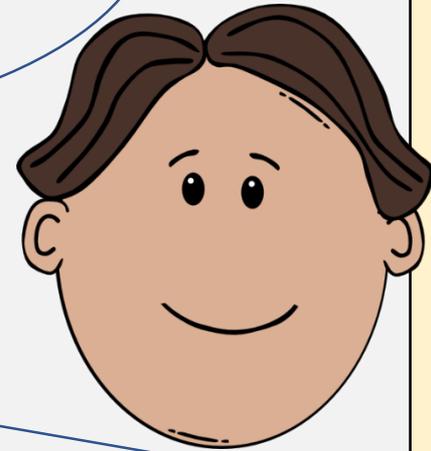
[The PiXL Progression Ladders](#)
[The PiXL Knowledge Mats – Think It](#)

ThinkIT



Kim

I think $\frac{1}{2}$ is greater than $\frac{3}{4}$ because the whole is only split into two equal parts.



Hamza

I think $\frac{3}{4}$ is greater because you have more parts of the whole.

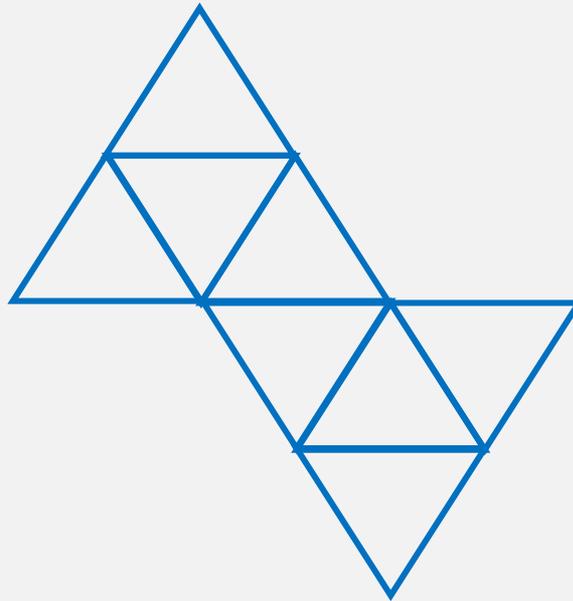
Who do you think is right? Show how you can prove your answer.

ThinkIT

Jane lives 32m from school. She runs $\frac{3}{4}$ of the way. Leon lives 20m from school. He runs $\frac{1}{2}$ of the way.
Who runs the farthest?



How many parts need to be shaded to represent $\frac{3}{4}$ of this shape?



Show two different ways of how you can work this out.

Show Me Tasks

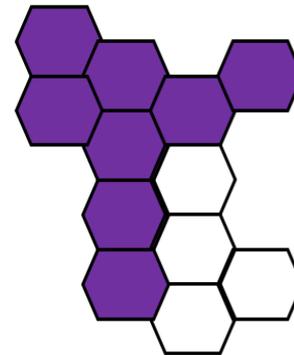
Y2 A2 M4b Can find $\frac{3}{4}$ of a shape or set of objects

On a school trip to the beach, Olive picked up 15 shells. James explained that she had picked up the equivalent of $\frac{3}{4}$ of the number of shells he had picked up. How many shells has James picked up?

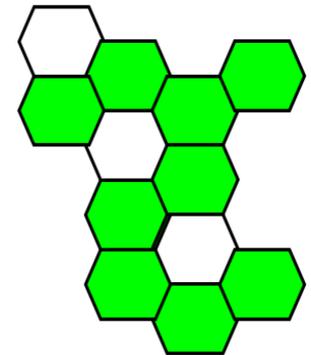


A bar model may help you solve this.

The class were asked to shade $\frac{3}{4}$ of this shape. Debbie and Andrew had different answers. Who is correct? Explain your reasoning.



Debbie



Andrew