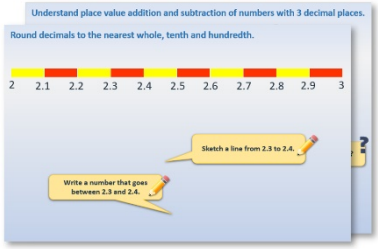
Year 5: Week 2, Day 4

Find unit fractions of amounts

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

1. Start by reading through the **Learning Reminders**.
   They come from our *PowerPoint* slides.



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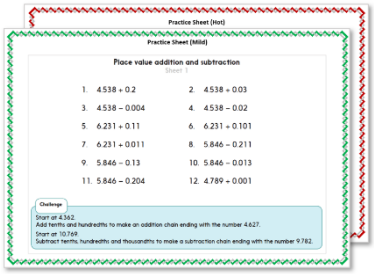
2. Tackle the questions on the **Practice Sheet**.
   There might be a choice of either Mild (easier) or Hot (harder)!
   Check the answers.



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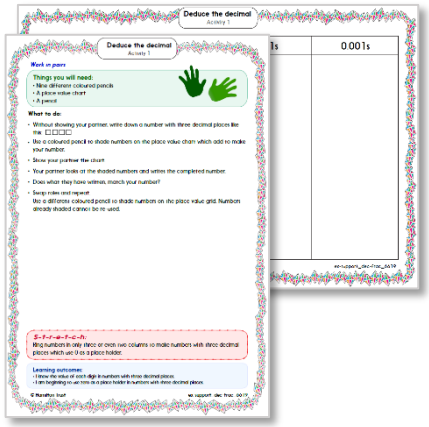
3. Finding it tricky? That's OK… have a go with a grown-up at **A Bit Stuck?**



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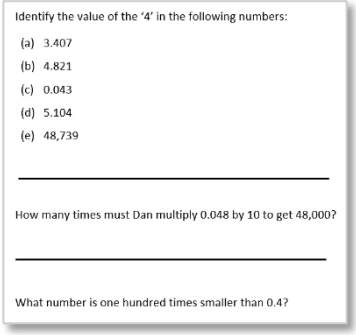
4. Have I mastered the topic? A few questions to **Check your understanding**.
   Fold the page to hide the answers!



Learning Reminders

Use division strategies to find unit fractions of amounts.

There are 148 children in a school.

The head teacher wants to split them into house teams.

She doesn't mind how many teams there are, but there must be the same number of children in each team.

Can the children be split into **three** equal house teams?
Let's try to find $^1/_3$ of 148 by dividing 148 by 3...

148		
? in team A	? in team B	? in team C

Remember how to use the vertical division layout of chunking? Follow this example...

$148 \div 3 =$

so, $\square \times 3 = 148$ ← *How many 3s are in 148?*

$40 \times 3 = 120$ ← *40 x 3 = 120. How much left?*

28 ← *How many 3s are in 28?*

$9 \times 3 = 27$

1 ← *9 and 1 left over*

$148 \div 3 = 49$ r 1

So, having a third of the children in each team won't work.
We have found that 148 does NOT divide by 3.
3 is not a factor of 148.

1 left over means that there *won't* be the same number of children in each team.

Learning Reminders

Use division strategies to find unit fractions of amounts.

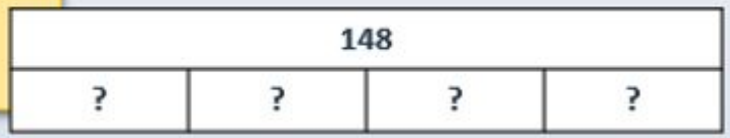
There are 148 children in a school.

The head teacher wants to split them into house teams.

She doesn't mind how many teams there are, but there must be the same number of children in each team.

We know that 148 can't be split into 5s. Why?

Find out if $\frac{1}{4}$, $\frac{1}{7}$ or $\frac{1}{8}$ of the school could be in one team.



148 ÷ 4 =

□ × 4 = 148 ← *How many 4s are in 148?*

30 × 4 = 120 ← *30 x 4 = 120. How much left?*

28 ← *How many 4s are in 28?*

7 × 4 = 28

0 ← *7 and 0 left over*

148 ÷ 4 = 37

0 left over means that there *ARE* the same number of children in each team.

Practice Sheet Mild

Find unit fractions of amounts

1. $\frac{1}{5}$ of 150
2. $\frac{1}{5}$ of 250
3. $\frac{1}{3}$ of 240
4. $\frac{1}{3}$ of 126
5. $\frac{1}{4}$ of 248
6. $\frac{1}{4}$ of 156
7. $\frac{1}{6}$ of 126
8. $\frac{1}{6}$ of 186
9. $\frac{1}{8}$ of 248
10. $\frac{1}{8}$ of 176
11. $\frac{1}{7}$ of 147
12. $\frac{1}{7}$ of 175
13. $\frac{1}{9}$ of 279
14. $\frac{1}{9}$ of 207
15. $\frac{1}{6}$ of 144
16. $\frac{1}{8}$ of 144

Challenge

What fraction of 125 is 25? What fraction of 182 is 26?

Practice Sheet Hot

Find unit fractions of amounts

132 145 147 123 159 144 164 175

Investigate which of these numbers can be divided equally into 3, 4, 5, 6, 7, 8 or 9 groups to give a whole number answer.

- Write the corresponding fraction statement, e.g. $^1/_6$ of 132 is 22.
- Record your investigation on a large sheet of paper.
- Which numbers can be divided into more different-sized groups than other numbers? Why might that be?

Practice Sheets Answers

Find unit fractions of amounts (mild)

1. $\frac{1}{5}$ of 150 = 30
2. $\frac{1}{5}$ of 250 = 50
3. $\frac{1}{3}$ of 240 = 80
4. $\frac{1}{3}$ of 126 = 42
5. $\frac{1}{4}$ of 248 = 62
6. $\frac{1}{4}$ of 156 = 39
7. $\frac{1}{6}$ of 126 = 21
8. $\frac{1}{6}$ of 186 = 31
9. $\frac{1}{8}$ of 248 = 31
10. $\frac{1}{8}$ of 176 = 22
11. $\frac{1}{7}$ of 147 = 21
12. $\frac{1}{7}$ of 175 = 25
13. $\frac{1}{9}$ of 279 = 31
14. $\frac{1}{9}$ of 207 = 23
15. $\frac{1}{6}$ of 144 = 24
16. $\frac{1}{8}$ of 144 = 18

Challenge

25 is $\frac{1}{5}$ of 125. 26 is $\frac{1}{7}$ of 182.

Find unit fractions of amounts (hot)

Of these numbers, 144 has the most possible unit fractions.
It is divisible by 3, 4, 6, 8 and 9, as well as by 1, 2, 12, 18, 24, 36, 48 and 72!

A Bit Stuck?
Fraction facts

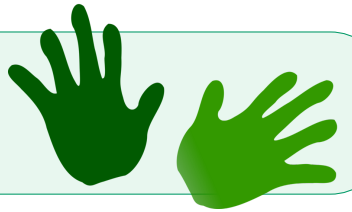
Use this activity to support learning for both today and tomorrow (Week 2 Day 5)

Work in pairs, but write your answers on your own sheet

What to do:

- Work out what number needs to go in each empty section of the bar model. Then write a list of fraction facts to go with each.

Things you will need:
- A pencil



12			

12		

¼ of 12 is

½ of 12 is

¾ of 12 is

4/4 of 12 is

⅓ of 12 is

⅔ of 12 is

3/3 of 12 is

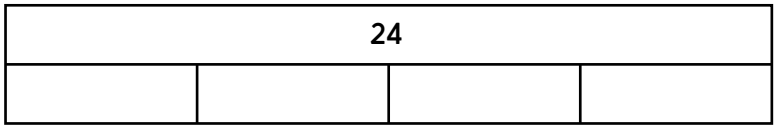
- Choose at least four other bar models. Work out what number needs to go in each empty section of the bar model. Then write a list of fraction facts to go with each.

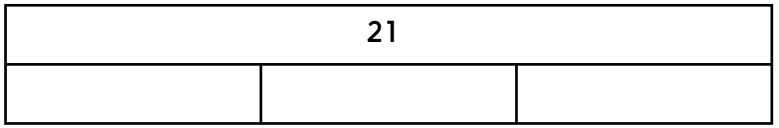
S-t-r-e-t-c-h:

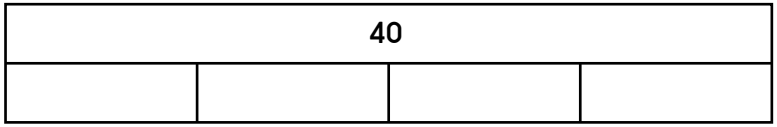
Draw your own bar models to show ⅓s of 15 and ¼s of 28.

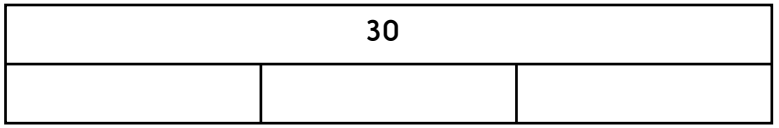
Learning outcomes:
- I can use bar models to find ⅓s, ¼s and ⅕s of numbers.
- I am beginning to draw my own bar models to find fractions of amounts.

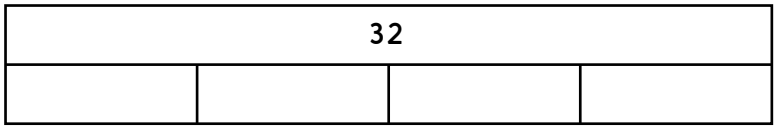
A Bit Stuck?
Fraction facts

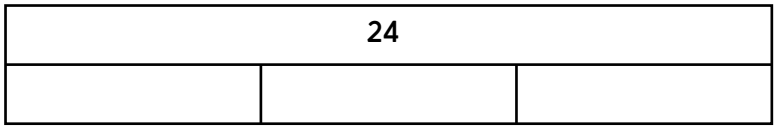


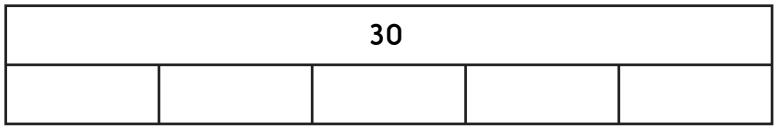


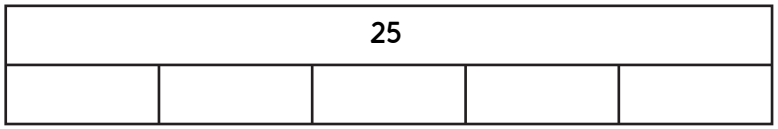




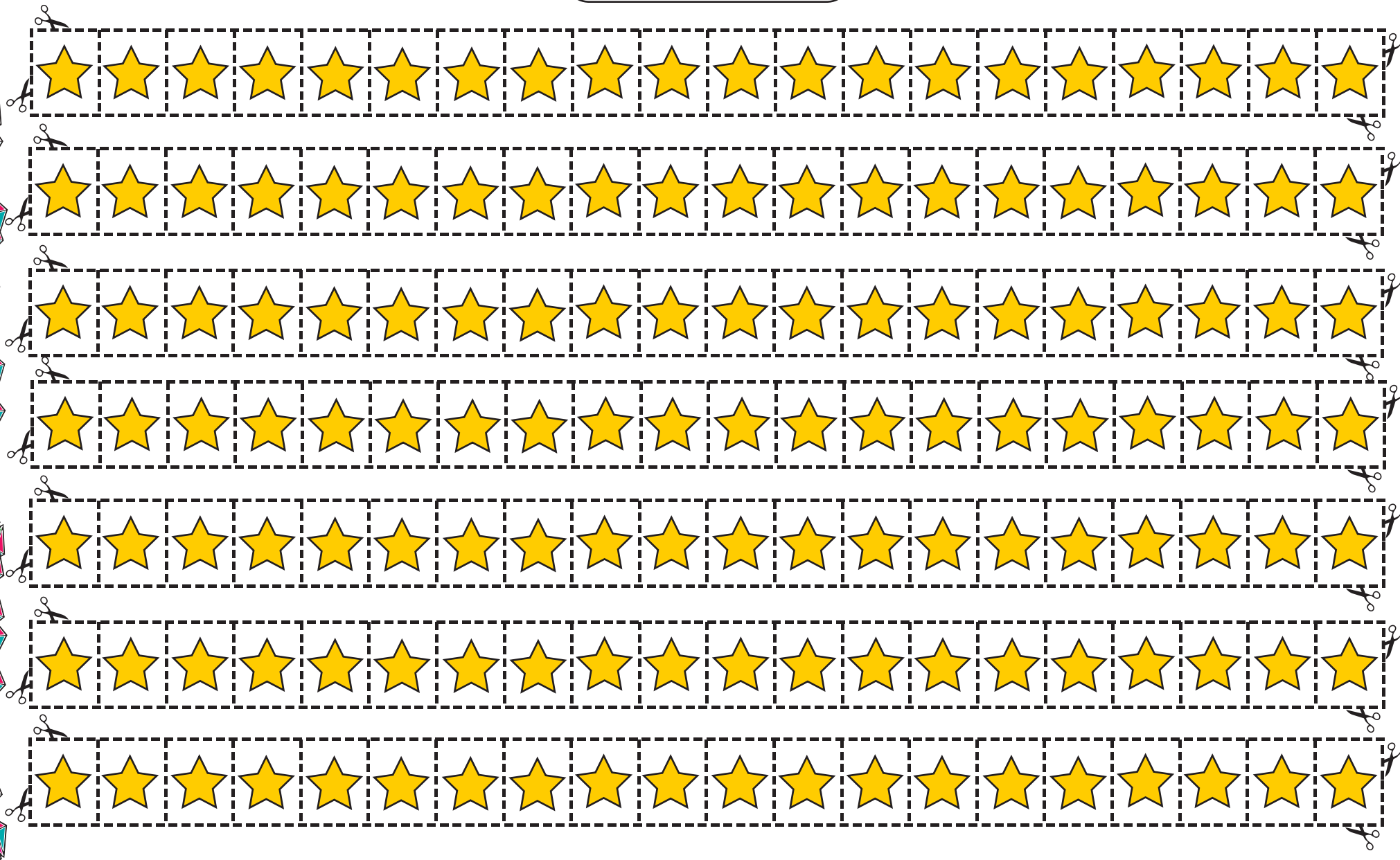




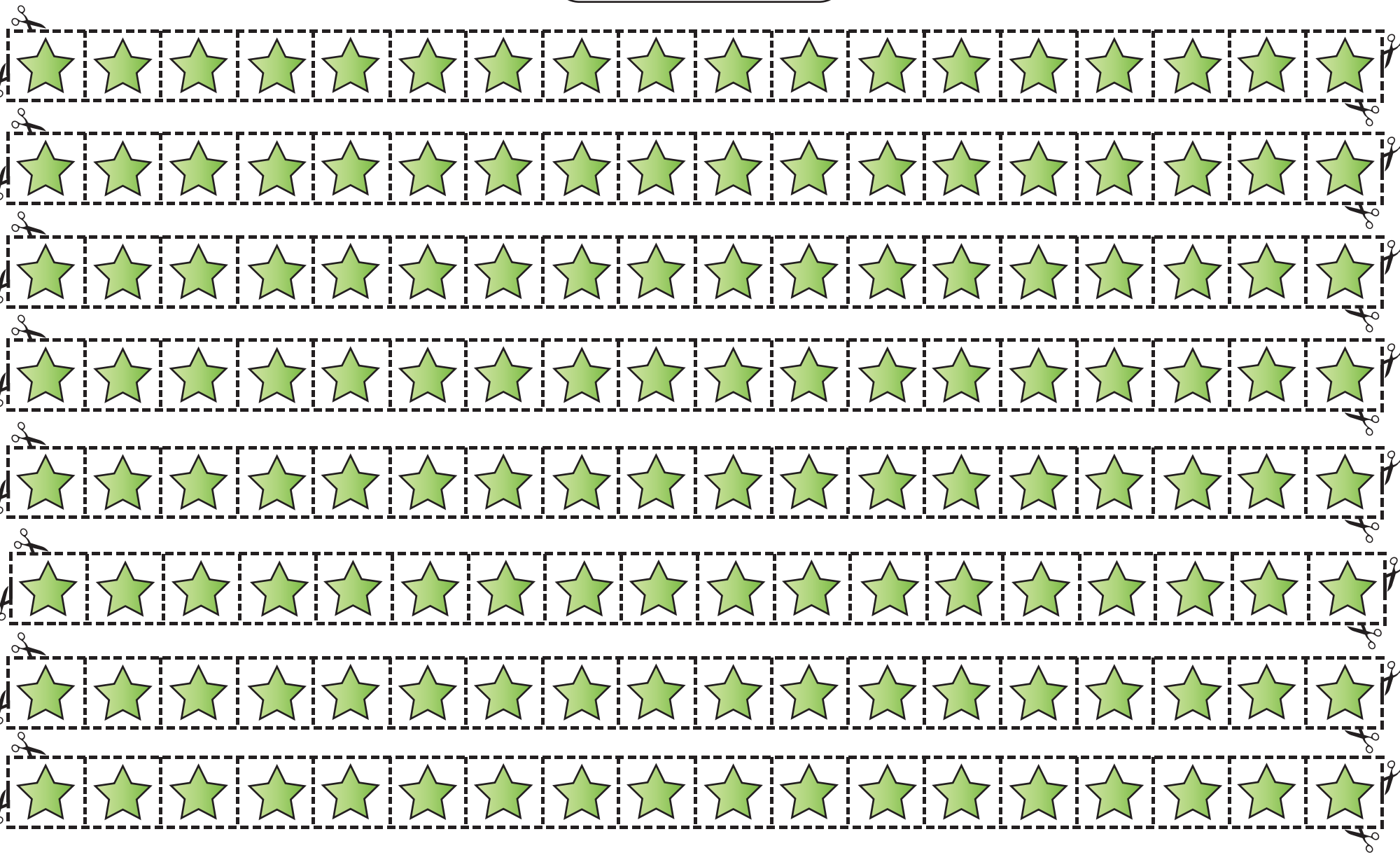




A Bit Stuck?
Fraction facts



A Bit Stuck?
Fraction facts



Check your understanding

Questions

Draw a bar diagram to represent each problem.

i. $^1/_3$ of 84
ii. $^1/_5$ of 215
iii. $^1/_7$ of 315

Now find each answer…

List all possible unit fractions of the following numbers:

35 48 60 100

Fold here to hide answers:

Check your understanding

Answers

Draw a bar diagram to represent each problem.

$^1/_3$ of 84 = 28

84		
28	28	28

$^1/_5$ of 215 = 43

215				
43	43	43	43	43

$^1/_7$ of 315 = 45

315						
45	45	45	45	45	45	45

List all possible unit fractions of the following numbers:

35 $^1/_5$, $^1/_7$, $^1/_{35}$
48 $^1/_2$, $^1/_3$, $^1/_4$, $^1/_6$, $^1/_8$, $^1/_{12}$, $^1/_{16}$, $^1/_{24}$, $^1/_{48}$
60 $^1/_2$, $^1/_3$, $^1/_4$, $^1/_5$, $^1/_6$, $^1/_{10}$, $^1/_{12}$, $^1/_{15}$, $^1/_{20}$, $^1/_{30}$, $^1/_{60}$
100 $^1/_2$, $^1/_4$, $^1/_5$, $^1/_{10}$, $^1/_{20}$, $^1/_{25}$, $^1/_{50}$, $^1/_{100}$