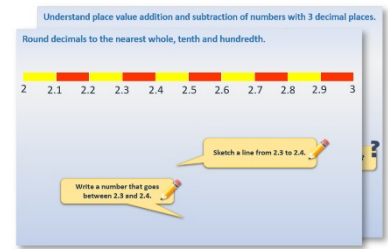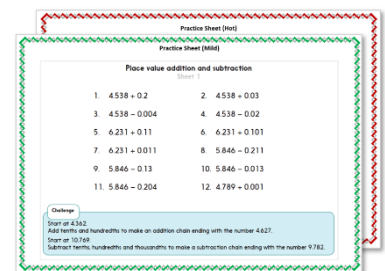# Year 4: Week 4, Day 2
Fractions of amounts

Each day covers one maths topic. It should take you about 1 hour or just a little more.
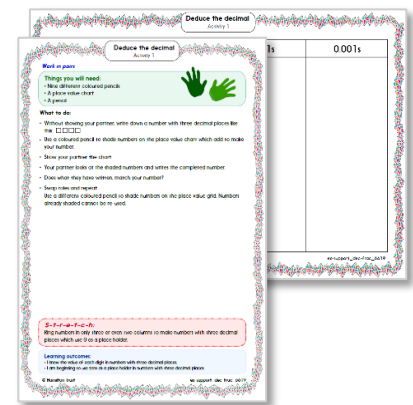
1. Start by reading through the **Learning Reminders**.
    They come from our *PowerPoint* slides.

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

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

4. Think you've cracked it? Whizzed through the Practice Sheets? Have a go
    at the **Investigation**…

Learning Reminders

Find unit and non-unit fractions of amounts.

If this bar of chocolate was shared equally between **5** people, what **fraction** would they each get? **How many pieces** would this be?

?

They would get $^1/_5$ each!

We can find $^1/_5$ of 30 by dividing 30 by 5.

$30 \div 5 = ?$

6 pieces each!

How can we find $^2/_5, ^3/_5$ and $^4/_5$ of 30?

Multiply 6 ($^1/_5$ of 30) by 2, 3 and 4.

Learning Reminders

Find unit and non-unit fractions of amounts.

What if the bar of chocolate was shared equally between **6 people?**

?

They would get $\frac{1}{6}$ each!

We can find $\frac{1}{6}$ of **30** by **dividing 30 by 6.**

$30 \div 6 = ?$

5 pieces each!

How can we find $\frac{5}{6}$ **of 30?**

Multiply 5 ($\frac{1}{6}$ of 30) by...

Learning Reminders

Find unit and non-unit fractions of amounts.

What if a bar of chocolate had **50 pieces** and was shared equally between **10 people?**

?

They would get $^1/_{10}$ each!

We can find $^1/_{10}$ **of 50** by **dividing 50 by 10.**

$50 \div 10 = ?$

5 pieces each!

What is $^2/_{10}$ **of 50?** $^3/_{10}$? $^9/_{10}$?

$^2/_{10}$ **of 50 is 10 (2 x 5)**
$^3/_{10}$ **of 50 is 15 (3 x 5)**
$^9/_{10}$ **of 50 is 45 (9 x 5)**

Practice Sheet Mild
Find fractions of amounts

1. $\frac{1}{3}$ of 12 $\frac{2}{3}$ of 12

2. $\frac{1}{3}$ of 15 $\frac{2}{3}$ of 15

3. $\frac{1}{4}$ of 20 $\frac{3}{4}$ of 20

4. $\frac{1}{4}$ of 16 $\frac{3}{4}$ of 16

5. $\frac{1}{5}$ of 15 $\frac{3}{5}$ of 15

6. $\frac{1}{5}$ of 20 $\frac{2}{5}$ of 20

7. $\frac{1}{8}$ of 16 $\frac{5}{8}$ of 16

8. $\frac{1}{8}$ of 40 $\frac{3}{8}$ of 40

9. $\frac{1}{4}$ of 32 $\frac{3}{4}$ of 32

10. $\frac{1}{10}$ of 80 $\frac{3}{10}$ of 80

11. $\frac{1}{6}$ of 12 $\frac{5}{6}$ of 12

12. $\frac{1}{6}$ of 30 $\frac{5}{6}$ of 30

Finding unit and non-unit fractions of amounts

32

$\frac{1}{8}$ of 32 is _____

$\frac{2}{8}$ of 32 is _____ $\frac{1}{4}$ of 32 is _____

$\frac{3}{8}$ of 32 is _____

$\frac{4}{8}$ of 32 is _____ $\frac{1}{2}$ of 32 is _____

$\frac{5}{8}$ of 32 is _____

$\frac{6}{8}$ of 32 is _____ $\frac{3}{4}$ of 32 is _____

$\frac{7}{8}$ of 32 is _____

$\frac{8}{8}$ of 32 is _____ $\frac{4}{4}$ of 32 is _____

30

$\frac{1}{6}$ of 30 is _____

$\frac{2}{6}$ of 30 is _____

$\frac{3}{6}$ of 30 is _____

$\frac{4}{6}$ of 30 is _____

$\frac{5}{6}$ of 30 is _____

$\frac{6}{6}$ of 30 is _____

Challenge

Draw your own bar model diagram to find $\frac{1}{3}$s of 30 and $\frac{1}{5}$s of 30.

# Practice Sheets Answers

Find fractions of amounts (mild)

1. ⅓ of 12 is 4   ⅔ of 12 is 8
2. ⅓ of 15 is 5   ⅔ of 15 is 10
3. ¼ of 20 is 5   ¾ of 20 is 15
4. ¼ of 16 is 4   ¾ of 16 is 12
5. ⅕ of 15 is 3   ⅗ of 15 is 9
6. ⅕ of 20 is 4   ⅖ of 20 is 8
7. ⅛ of 16 is 2   ⅝ of 16 is 10
8. ⅛ of 40 is 5   ⅜ of 40 is 15
9. ¼ of 32 is 8   ¾ of 32 is 24
10. ¹⁄₁₀ of 80 is 8   ³⁄₁₀ of 80 is 24
11. ⅙ of 12 is 2   ⅚ of 12 is 10
12. ⅙ of 30 is 5   ⅚ of 30 is 25

Finding unit and non-unit fractions of amounts (hot)

$\frac{1}{8}$ of 32 is 4

$\frac{2}{8}$ of 32 is 8 $\frac{1}{4}$ of 32 is 8

$\frac{3}{8}$ of 32 is 12

$\frac{4}{8}$ of 32 is 16 $\frac{1}{2}$ of 32 is 16

$\frac{5}{8}$ of 32 is 20

$\frac{6}{8}$ of 32 is 24 $\frac{3}{4}$ of 32 is 24

$\frac{7}{8}$ of 32 is 28

$\frac{8}{8}$ of 32 is 32 $\frac{4}{4}$ of 32 is 32

$\frac{1}{6}$ of 30 is 5

$\frac{2}{6}$ of 30 is 10

$\frac{3}{6}$ of 30 is 15

$\frac{4}{6}$ of 30 is 20

$\frac{5}{6}$ of 30 is 25

$\frac{6}{6}$ of 30 is 30

Challenge

Draw your own bar model diagram to find $\frac{1}{3}$s of 30 and $\frac{1}{5}$s of 30.

30		
10	10	10
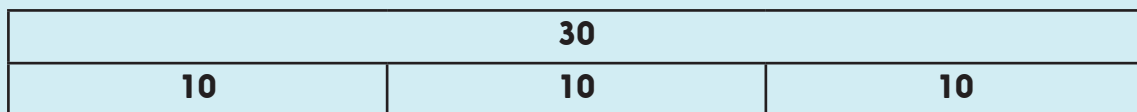
$\frac{1}{3}$ of 30 is 10
$\frac{2}{3}$ of 30 is 20
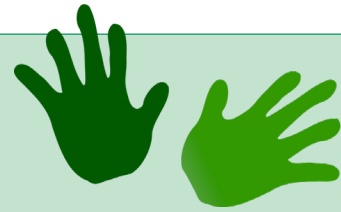$\frac{3}{3}$ of 30 is is 30

30				
6	6	6	6	6
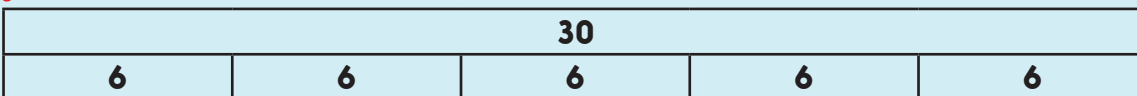
$\frac{1}{5}$ of 30 is 6
$\frac{2}{5}$ of 30 is 12
$\frac{3}{5}$ of 30 is 18
$\frac{4}{5}$ of 30 is 24
$\frac{5}{5}$ of 30 is 30

Work in pairs

Things you will need:
- 28 gems (or beads, pennies, dried beans, etc.
- Four treasure chests
- A pencil

What to do:

- Choose a bag of gems. Put $\frac{1}{4}$ of the gems in each of the four treasure chests.
- Complete one line of fraction sentences for that bag of gems.

28 4 12 20 8 24 16

- Repeat with up to five other bags of gems.

$\frac{1}{4}$ of ⬚ is ⬚ ; $\frac{1}{2}$ of ⬚ is ⬚ ; $\frac{3}{4}$ of ⬚ is ⬚

$\frac{1}{4}$ of ⬚ is ⬚ ; $\frac{1}{2}$ of ⬚ is ⬚ ; $\frac{3}{4}$ of ⬚ is ⬚

$\frac{1}{4}$ of ⬚ is ⬚ ; $\frac{1}{2}$ of ⬚ is ⬚ ; $\frac{3}{4}$ of ⬚ is ⬚

$\frac{1}{4}$ of ⬚ is ⬚ ; $\frac{1}{2}$ of ⬚ is ⬚ ; $\frac{3}{4}$ of ⬚ is ⬚

$\frac{1}{4}$ of ⬚ is ⬚ ; $\frac{1}{2}$ of ⬚ is ⬚ ; $\frac{3}{4}$ of ⬚ is ⬚

$\frac{1}{4}$ of ⬚ is ⬚ ; $\frac{1}{2}$ of ⬚ is ⬚ ; $\frac{3}{4}$ of ⬚ is ⬚

S-t-r-e-t-c-h:
Find another number of gems you could share equally between the four treasure chests. You are not allowed to cut up any gems!

Learning outcomes:
- I can find $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of amounts (whole number answers).
- I am beginning to understand that $\frac{2}{4}$ is the same as $\frac{1}{2}$.
- I am beginning to see that not all numbers can be shared into quarters (to give whole number answers).

Investigation
Fraction clues

1.   Use your knowledge about finding fractions
     of numbers to solve this logic puzzle:

> I am a whole number between 10 and 25.
> If you halve me, your answer will not be
> a whole number.
> If you find $\frac{1}{3}$ of me, your answer will be
> a multiple of 5.
> If you try to find $\frac{1}{4}$ of me, you may get
> a headache!
> If you find $\frac{1}{5}$ of me, your answer will be
> a whole number.
> What am I?

2.   Have a go at this one!

> I am a very special number between 10
> and 20.
> I am special because if you find $\frac{1}{2}$ of
> me, $\frac{1}{3}$ of me, $\frac{1}{4}$ of me, or even $\frac{1}{6}$
> of me, you will get a whole number answer!
> What am I?

Challenge

What if the number in puzzle two was between 20 and 30? Or between 30 and 40?
Can you think of any other numbers that would satisfy all the other clues? What do
you notice about them?
Think of another 'special' number and write your own fraction clues about it for
someone else to work out.