# MATHEMATICS

## N.S. Yr. 5   P.25

**Find fractions of numbers or quantities.**

# Equipment

Paper, pencil, ruler

# MathSphere

# **Concepts**

## **Multiples of simple fractions**

Children should be able to find multiples of a simple fraction of a familiar quantity such as **three tenths** of **30** or **100** or **500** and **five sixths** of **18** or **24** or **120**. The best approach to this type of problem is to find one tenth or one sixth first and then multiply by the numerator.

Eg.  Find **3/10** of **500**

**1/10** of **500** is **50,**  therefore **3/10** of **500** is **3 × 50  =  150.**

They should be able to find multiples of a simple fraction of £1 and one metre such as four fifths of a pound. This should be done by first changing the larger unit to smaller units (eg. pounds to pence or metres to centimetres).

Children should understand that a diagram such as:



Represents the sum 3 ÷ 5. Imagine this as three chocolate bars, each divided into five parts.

They should be able to say what fraction of a large shape is a smaller shape where multiples of simple fractions are concerned. For example, what fraction is shape A of shape B?
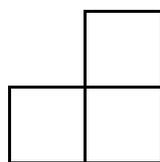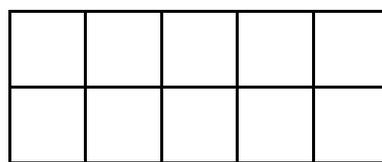


**Shape  A              Shape B**

When tackling this type of problem, make sure each shape is divided into the same size sections.  In this case there are ten such sections in Shape B and three such sections in shape A, therefore Shape A is **the same as** $^3/_{10}$ of Shape B.

**1.** Here are some cakes.
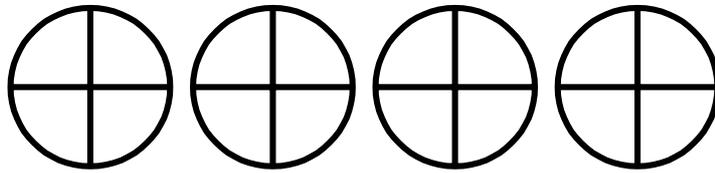
Colour $2\dfrac{1}{4}$  cakes.

**2.** Here are some hexagonal biscuits.

Colour  $3\dfrac{2}{3}$ of the biscuits.

And don't eat them, please.
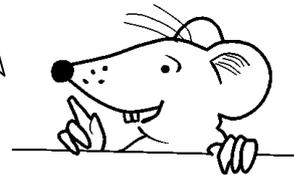
**3.** Multy has ten biscuits and eats $2\dfrac{3}{4}$ biscuits. Shade the part Multy eats.
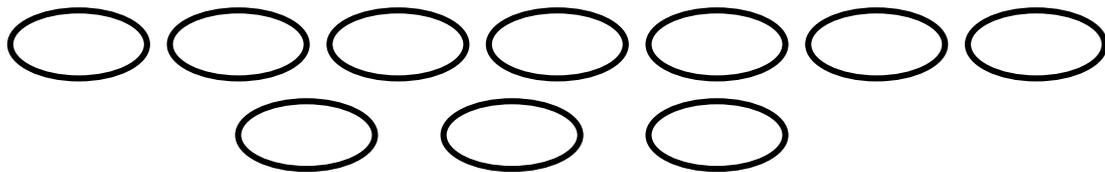
**4.** Michelle has six piles of coins. Each pile has ten coins.   Shade $3\dfrac{2}{5}$ piles.
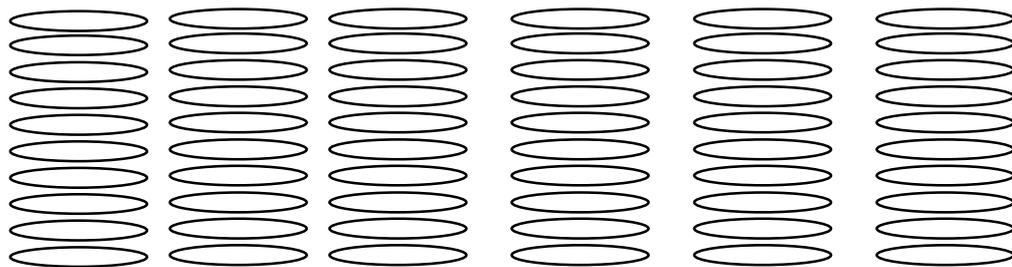
**1.** What division does this diagram show?

What is the answer to this sum?

**2.** What division does this diagram show?

What is the answer to this sum?

**3.** What division does this diagram show?

What is the answer to this sum?

**4.** Try to answer these sums without drawing a diagram, but do draw a diagram if you find it helps.

   **a)** $7 \div 8$    **b)** $3 \div 7$    **c)** $4 \div 9$    **d)** $8 \div 13$    **e)** $2 \div 7$

**5.** Answer the following questions.

   **a)**  What is three fifths of 25?

   **b)**  What is seven tenths of sixty?

   **c)**  Laura has twenty five dolls. Two fifths of them come from Sweden. How many come from Sweden?

   **d)**  Six sevenths of the people that work in a company are over forty years old.  There are forty nine people altogether. How many are **not** over forty years old?

**1.** What is **two thirds** of these numbers?

   **a)** 24   **b)** 27   **c)** 60   **d)** 48   **e)** 99   **f)** 300   **g)** 660

**2.** What is **two fifths** of these numbers?

   **a)** 15   **b)** 30   **c)** 60   **d)** 100   **e)** 550   **f)** 125   **g)** 35

**3.** What is **two ninths** of these numbers?

   **a)** 18   **b)** 36   **c)** 54   **d)** 63   **e)** 900   **f)** 180   **g)** 72

**4.** What is **seven tenths** of these numbers?

   **a)** 40   **b)** 60   **c)** 100   **d)** 180   **e)** 240   **f)** 30   **g)** 900

**5.** What is **three quarters** of these numbers?

   **a)** 8   **b)** 12   **c)** 60   **d)** 32   **e)** 160   **f)** 240   **g)** 100

**6. a)** How many pennies are there in a pound (**£**) ?
   **b)** What is **sixth tenths** of a pound?
   **c)** What is **four fifths** of a pound?
   **d)** What is **thirty five hundredths** of a pound?

**7. a)** How many centimetres are there in a metre?
   **b)** What is $\dfrac{13}{20}$ of a metre?
   **c)** What is $\dfrac{3}{10}$ of a metre?
   **d)** What is $\dfrac{7}{10}$ of a metre?

**8. a)** What fraction of a pound is 75p ?
   **b)** What fraction of a pound is 88p ?
   **c)** What fraction of a metre is 90cm ?
   **d)** What fraction of a metre is forty five centimetres?

**1.** What is **three twentieths** of these numbers?

   **a)** 60   **b)** 80      **c)** 20      **d)** 100   **e)** 200      **f)** 160      **g)** 240

**2.** What is **nine tenths** of these numbers?

   **a)** 50   **b)** 70   **c)** 100   **d)** 200   **e)** 400   **f)** 450   **g)** 560

**3.** What is **thirty hundredths** of these numbers?

   **a)** 200   **b)** 100      **c)** 700      **d)** 900   **e)** 800   **f)** 400   **g)** 300

**4.** What is **five sixths** of these numbers?

   **a)** 12      **b)** 18      **c)** 6      **d)** 24      **e)** 72   **f)** 120   **g)** 240

**5.** What is **three sixths** of these numbers?

   **a)** 12   **b)** 24      **c)** 60      **d)** 600      **e)** 48      **f)** 360   **g)** 660

**6. a)** How many pennies are there in a pound (£)?
   **b)** What is **three quarters** of a pound?
   **c)** What is **eight tenths** of a pound?
   **d)** What is **two fifths** of a pound?

**7. a)** How many centimetres are there in a metre?
   **b)** What is $\dfrac{4}{5}$ of a metre?
   **c)** What is $\dfrac{18}{20}$ of a metre?
   **d)** What is $\dfrac{33}{100}$ of a metre?

**8. a)** What fraction of a pound is 28p ?
   **b)** What fraction of a pound is 42p ?
   **c)** What fraction of a metre is 56cm ?
   **d)** What fraction of a metre is twenty two centimetres?

**1.** Write these fractions to the **nearest whole number.**

a)  $8\dfrac{1}{5}$    b)  $12\dfrac{15}{20}$    c)  $9\dfrac{7}{10}$    d)  $6\dfrac{1}{6}$    e)  $9\dfrac{89}{100}$    f)  $15\dfrac{2}{3}$

**2.** Write these fractions in order of size, smallest first.

$2\dfrac{2}{5}$      $3\dfrac{1}{10}$      $2\dfrac{7}{10}$      $2\dfrac{1}{2}$      $3\dfrac{1}{5}$      $2\dfrac{4}{5}$

**3.** What fraction of one kilometre is 200 metres?

**4.** What fraction of one kilogramme is 500 grammes?

**5.** What fraction of one litre is 600 millilitres?

**6.** What fraction of one day is one hour?

**7.** What fraction of one day is four hours?

**8.** What fraction of one day is eight hours?

**9.** What fraction of one week is three days?

**10.** What fraction of one book of 320 pages is one chapter of 32 pages?

**11.** I have fifteen books on a shelf. Five of them have red covers.  What fraction have red covers?

**12.** What fraction of 1 Kg is 450g ?

**13.** What fraction of 1 litre is 750 ml?

**14.** What fraction of one leap year is the month of February?

**15.** What fraction of June is the period from 5th June to 12th June inclusive?  (Inclusive means include **all** the days in this period.)

## Answers

**Page 3**
**1.** Colour any two whole cakes and a quarter of a cake (or equivalent in bits).
**2.** Colour any three whole cakes and $^2/_3$ of a cake (or equivalent in bits).
**3.** Shade any two biscuits and $^3/_4$ of a biscuit (or equivalent).
**4.** Shade three piles and four extra coins (or equivalent).

**Page 4**
**1.**  3 ÷ 5     $^3/_5$
**2.**  3 ÷ 6     $^3/_6$
**3.**  5 ÷ 6     $^5/_6$
**4. a)** $^7/_8$     **b)** $^3/_7$     **c)** $^4/_9$     **d)** $^8/_{13}$     **e)** $^2/_7$
**5. a)** 15     **b)** 42     **c)** 10     **d)** 7

**Page 5**
**1.  a)** 16     **b)** 18     **c)** 40     **d)** 32     **e)** 66     **f)** 200     **g)** 440
**2.  a)** 6     **b)** 12     **c)** 24     **d)** 40     **e)** 220     **f)** 50     **g)** 14
**3.  a)** 4     **b)** 8     **c)** 12     **d)** 14     **e)** 200     **f)** 40     **g)** 16
**4.  a)** 28     **b)** 42     **c)** 70     **d)** 126     **e)** 168     **f)** 21     **g)** 630
**5.  a)** 6     **b)** 9     **c)** 45     **d)** 24     **e)** 120     **f)** 180     **g)** 75
**6.  a)** 100     **b)** 60p     **c)** 80p     **d)** 35p
**7.  a)** 100     **b)** 65 cm     **c)** 30 cm     **d)** 70 cm
**8.  a)** $^{75}/_{100}$ or $^3/_4$     **b)** $^{88}/_{100}$ or $^{22}/_{25}$     **c)** $^{90}/_{100}$ or $^9/_{10}$     **d)** $^{45}/_{100}$ or $^9/_{20}$

**Page 6**
**1.  a)** 9     **b)** 12     **c)** 3     **d)** 15     **e)** 30     **f)** 24     **g)** 36
**2.  a)** 45     **b)** 63     **c)** 90     **d)** 180     **e)** 360     **f)** 405     **g)** 504
**3.  a)** 60     **b)** 30     **c)** 210     **d)** 270     **e)** 240     **f)** 120     **g)** 90
**4.  a)** 10     **b)** 15     **c)** 5     **d)** 20     **e)** 60     **f)** 100     **g)** 200
**5.  a)** 6     **b)** 12     **c)** 30     **d)** 300     **e)** 24     **f)** 180     **g)** 330
**6.  a)** 100     **b)** 75p     **c)** 80p     **d)** 40p
**7.  a)** 100     **b)** 80 cm     **c)** 90 cm     **d)** 33 cm
**8.  a)** $^{28}/_{100}$ or $^7/_{25}$     **b)** $^{42}/_{100}$ or $^{21}/_{50}$     **c)** $^{56}/_{100}$ or $^{14}/_{25}$     **d)** $^{22}/_{100}$ or $^{11}/_{50}$

**Page 7**
**1.  a)** 8     **b)** 13     **c)** 10     **d)** 6     **e)** 10     **f)** 16
2. $2^2/_5$,     $2^1/_2$,     $2^7/_{10}$,     $2^4/_5$,     $3^1/_{10}$,     $3^1/_5$
**3.** $^{200}/_{1000}$ or $^1/_5$     **4.** $^{500}/_{1000}$ or $^1/_2$     **5.** $^{600}/_{1000}$ or $^3/_5$
**6.** $^1/_{24}$     **7.** $^4/_{24}$ or $^1/_6$     **8.** $^8/_{24}$ or $^1/_3$
**9.** $^3/_7$     **10.** $^{32}/_{320}$ or $^1/_{10}$     **11.** $^5/_{15}$ or $^1/_3$
**12.** $^{450}/_{1000}$ or $^9/_{20}$     **13.** $^{750}/_{1000}$ or $^3/_4$     **14.** $^{29}/_{366}$
**15.** $^8/_{30}$ or $^4/_{15}$