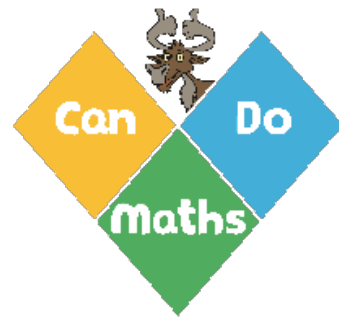




Colin and Coco's Deliberate Practice

Year 6 Unit 10

Ratio and Proportion





Contents

This pack of deliberate practice is designed to be used flexibly to secure the manageable steps of this unit.

The table below indicates which activities are linked to which manageable steps.

	Do It	Challenge It	Play It
Find 10%, 25%, 50% and 75% of an amount	1		
Find simple percentages of an amount (multiples of 10% and 5%)			1
Find complex percentages of an amount (eg 17%, 28%, 63%)		1	
Use percentages to make comparisons		2	
Find the value of the parts, given the whole	2		
Find the value of the whole and parts, given one part			2
Use scale factors to calculate dimensions in similar shapes	3		3
Use scale drawings		3	3



Calculate:

Do It 1

$10\% \text{ of } 30 = \square$

$50\% \text{ of } 60 = \square$

$25\% \text{ of } 20 = \square$

$10\% \text{ of } 80 = \square$

$50\% \text{ of } 50 = \square$

$25\% \text{ of } 36 = \square$

$10\% \text{ of } 50 = \square$

$50\% \text{ of } 10 = \square$

$75\% \text{ of } 12 = \square$

$10\% \text{ of } 25 = \square$

$25\% \text{ of } 10 = \square$

$75\% \text{ of } 200 = \square$

Challenge It 1

Match the calculation to the answer.
Find the missing buddy.

1% of 400		33
9% of 200		255
11% of 300		40
51% of 500		48
99% of 500		18
% of 400		490
49% of 1000		
19% of 400		24
92% of 500		76
16% of 150		460



Percentage Game

Play It 1

You need:

0 - 9 dice

0 - 20 blank number line

To play:

Throw the dice to get a 2-digit number.

Choose whether to find 10%, 15% or 5% of that number and plot the answer on a 0 - 20 number line.

To win:

The winner is the first player to plot four of their points without their opponent's points in between.



Do It 2

Colin and Coco share £60.
How much money do Colin and
Coco receive if:

Colin gets twice the amount Coco gets.

Colin Coco

Coco gets 3 times the amount Colin gets.

Colin Coco

Colin gets 4 times the amount Coco gets.

Colin Coco

Coco gets 5 times the amount Colin gets.

Colin and Coco have 24 sweets
How many sweets do Colin and
Coco receive if:

Colin gets the same amount Coco gets.

Colin Coco

Coco gets half the amount Colin gets.

Colin Coco

Colin gets one third the amount Coco gets.

Colin Coco

Coco gets 7 times the amount Colin gets.

Complete the statement in several ways

Challenge It 2

% of > % of

Now solve the problem choosing seven different digits.



Ratio Game

Play It 2

You need:
0 - 9 dice

To play:

For this game you are dividing an amount in the ratio of two parts for Colin and three parts for Coco every time.

Throw the dice to get a number of tens. This represents the whole.
Calculate Coco's share. This is your score.

Example:

Player 1: throws 4 so the whole is 40
divides by 5, so one part is 8
calculates Coco's share of three parts, $8 \times 3 = 24$
scores 24

To win:

The winner is the player with the highest score after five goes each.

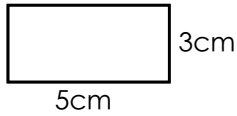
Play again but divide the amount in the ratio of seven parts for Colin and three parts for Coco every time. You score Colin's share.



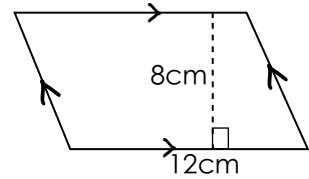
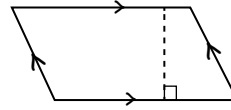
Calculate the dimensions of the similar shapes

Do It 3

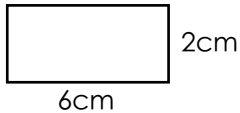
Scale Factor 2



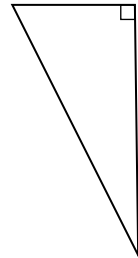
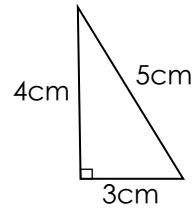
Scale Factor $\frac{1}{2}$



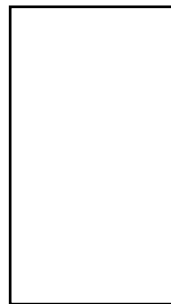
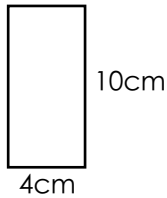
Scale Factor 3



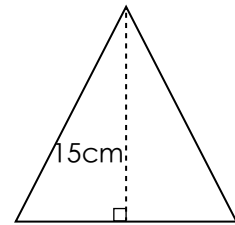
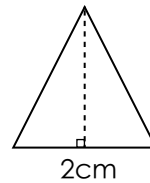
Scale Factor 3



Scale Factor 1.5



Scale Factor 5



Complete the table by finding the missing digits.
Solve it on several ways

Challenge It 3

Scale: 1 cm = km

Distance on map	Distance in real life
cm	5 km
cm	3 km
cm	0 km
cm	4 km
1 cm	km

Solve the problem using the digits
0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 at least once each.



Similar Shape Game

Play It 3

You need:

1 - 6 Dice

To play:

Each player throws the dice twice to create a 2-digit number.

This is the perimeter of the player's rectangle.

Each player sketches a rectangle with dimensions to make their perimeter.

Each player throws the dice again. This is the player's scale factor.

The player sketches the new rectangle with dimensions.

The length of the shorter side is their score.

To win:

The winner is the player with the longest total after 4 goes each.