

# Problem Solving

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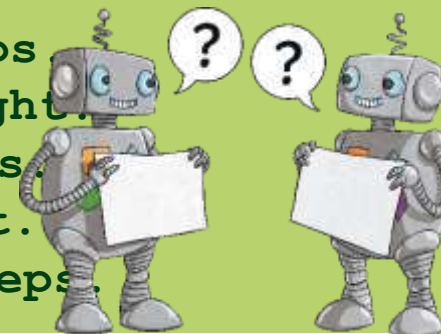
### Challenge 14

With a partner, play a game of human robots. Write a simple code for your partner to follow. Use the language of; move forward, move backward, quarter turn, half turn.

Check with your teacher where a good place is to play the game. You might need a bit of

#### Example code:

Move forward four steps.  
Quarter turn to the right.  
Move forward two steps.  
Half turn to the left.  
Move backwards three steps.



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### Challenge 15

Start at 500.

Take off  $12 \times 8$

Take away  $45 + 14$

Subtract  $150 - 67$

Take away a final  $34 + 46$

What number do you get?

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### Challenge 16

There were 146 fish swimming in the lake.

Around the lake were 39 ducks.

Up in the trees there were 27 cockatoos perched on the branches.

How many animals all together in that area?



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## Challenge 17

Here are the top six results for an Olympics long jump event, measured in metres.

If you were to add the lengths together what total would you get?

Germany	7.00m
USA	6.97m
Nigeria	6.97m
Serbia	6.91m
Ukraine	6.88m
Australia	6.86m



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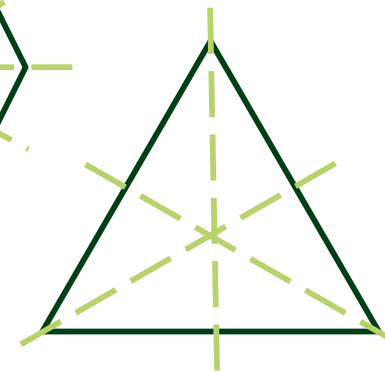
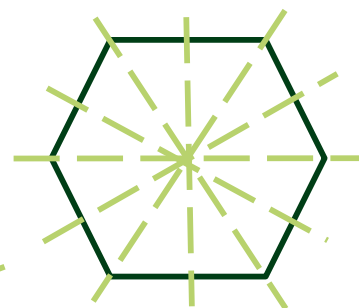
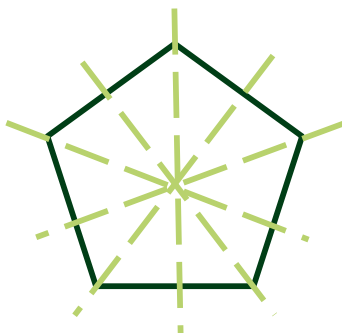
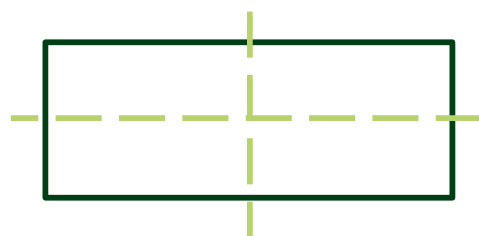
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### Challenge 18

Using a ruler, accurately draw the following shapes:  
rectangle, hexagon, pentagon and equilateral triangle.  
Add all the lines of symmetry on each shape.  
Get your teacher or a partner to check your work.



# Learning the 9 Times Table the Easy Way!

$1 \times 9 = 9$
$2 \times 9 = 18$
$3 \times 9 = 27$
$4 \times 9 = 36$
$5 \times 9 = 45$
$6 \times 9 = 54$
$7 \times 9 = 63$
$8 \times 9 = 72$
$9 \times 9 = 81$
$10 \times 9 = 90$
$11 \times 9 = 99$
$12 \times 9 = 108$

What patterns can you see?

The number of nines is one **more** than the number of tens in the answer.

So, for  $9 \times 6$  we know that the number of tens is one less than 6 (5) and we know that the tens and the ones add to make nine (4) so the answer must be 54! If you know your bonds to nine then the nine times table is easy!!

This is why the hand trick works!

The tens and ones add to make nine.

$9 \times 1 = 9$
$9 \times 2 = 18$
$9 \times 3 = 27$
$9 \times 4 = 36$
$9 \times 5 = 45$
$9 \times 6 = 54$
$9 \times 7 = 63$
$9 \times 8 = 72$
$9 \times 9 = 81$
$9 \times 10 = 90$
$9 \times 11 = 99$
$9 \times 12 = 108$

## The Hand Trick

Open both hands, palms facing towards you so you can see all ten digits (fingers and thumbs). To work out  $9 \times 5$  put down your 5<sup>th</sup> digit.

You now have 9 digits up - 4 digits to the left (4 tens, one less than the number of nines) and 5 digits to the right (number of ones to make 9).

Answer = 45

