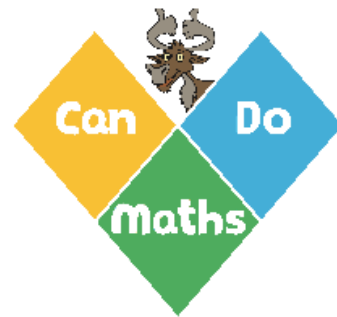


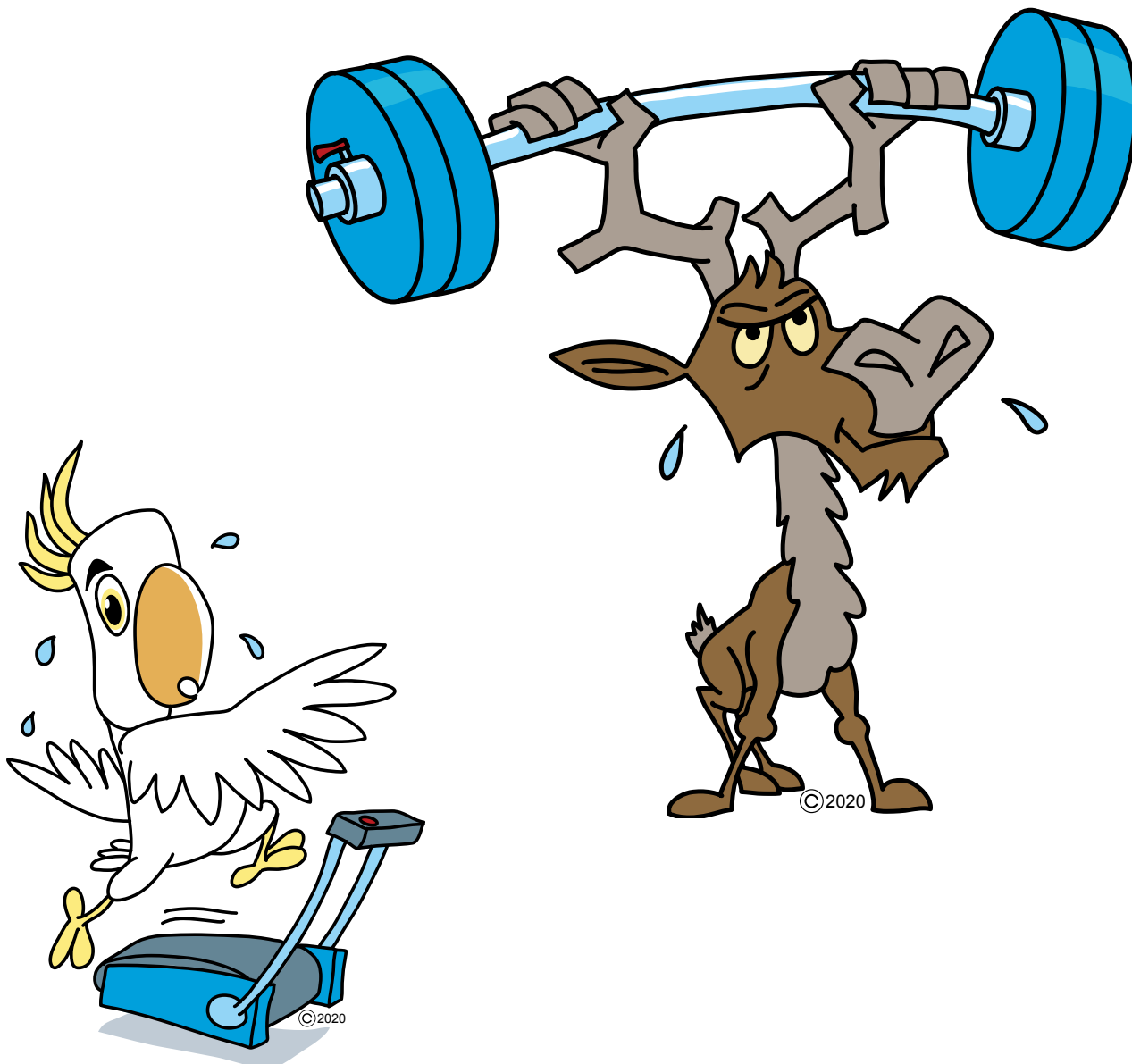


Colin and Coco's Deliberate Practice

Year 3 Unit 2

Geometry: Properties of Shapes

Answers





Contents

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

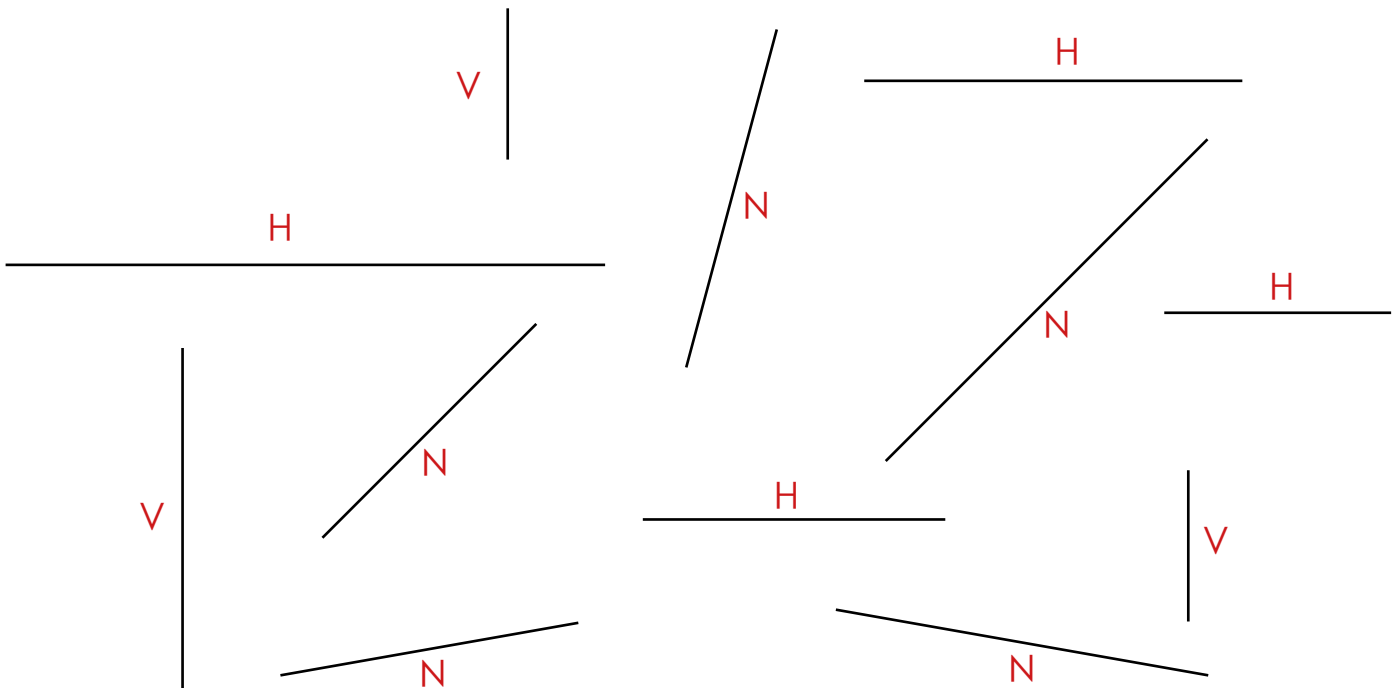
The table below indicates which activities are linked to which manageable steps.

	Do It	Challenge It	Play It
Identify and draw horizontal lines	1	1	1
Identify and draw vertical lines	1		1
Identify and draw parallel lines	2	2	
Identify and draw perpendicular lines			2
Draw common 2D shapes		3	
Name and describe 3D shapes	3		
Make 3D shapes using modelling materials			3



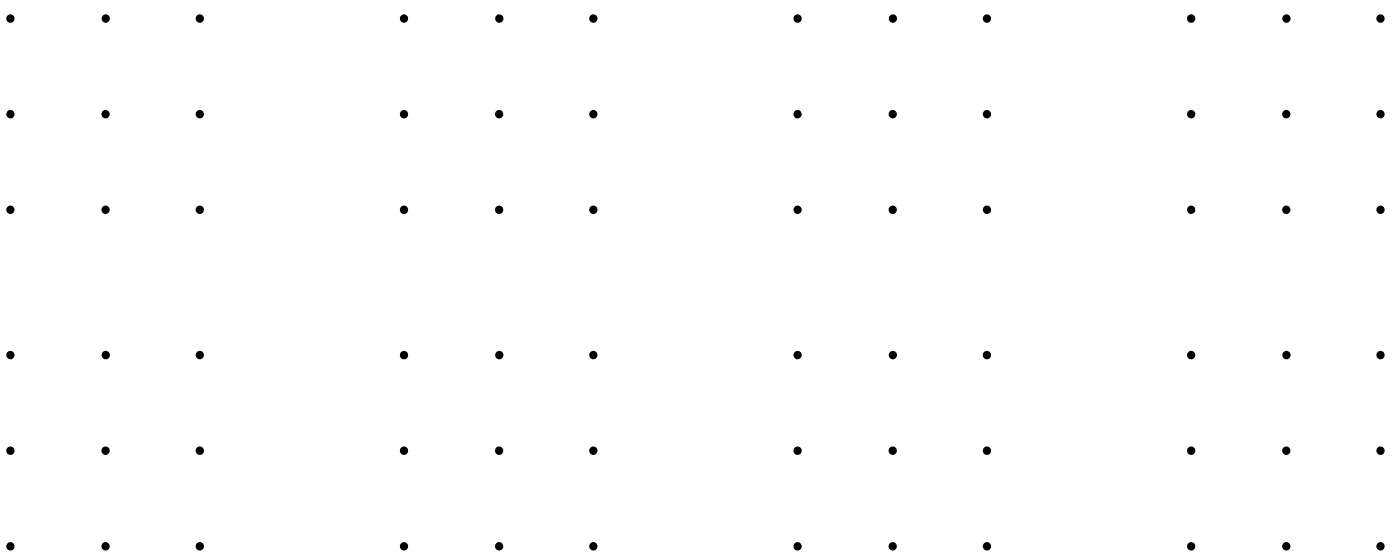
Do It 1

Are the lines horizontal, vertical or neither?
Mark the lines with H, V or N.



How many different horizontal lines can you draw on a 3 by 3
dotty grid?
What if it was a 4 by 4 dotty grid?

Challenge It 1





Horizontal or Vertical Sides Game

Play It 1

You need:

Instruction cards (on the next page)

Pencil and paper

To play:

Shuffle the cards in their three sets, and put them face down in three decks

Players take it in turns to turn over cards and sketch a shape.

Players turn over a card from set A.

They can then decide if they want a card from set B as well.

And a card from set C if they want.

Players sketch a shape that matches the cards they have turned over - if possible!

If they only chose one card and they sketch a shape they score 1 point.

If they chose 2 cards and sketch a shape to satisfy both, they score 2 points.

If they chose 3 cards and sketch a shape to satisfy all 3, they score 3 points.

If they cannot sketch a shape, or it is impossible, they score zero.

To win:

The winner is the first player to score 7 points.

(Note:

You could number the cards and put them on the screen.

Players then roll dice to get a number instead of picking cards.)



Horizontal or Vertical Sides Cards

Set A

Draw a hexagon with 2 horizontal sides

Draw a hexagon with 3 horizontal sides

Draw a hexagon with no horizontal sides

Draw a pentagon with 2 horizontal sides

Draw a pentagon with 1 horizontal side

Draw a pentagon with no horizontal sides

Draw an octagon with no horizontal sides

Draw an octagon with 1 horizontal side

Draw an octagon with 2 horizontal sides

Draw an octagon with 2 horizontal sides

Set B

and no vertical sides

and 1 vertical side

and 2 vertical sides

Set C

and no right angles

and 1 right angle

and 2 right angles

and 3 right angles

and 3 angles smaller than a right angle

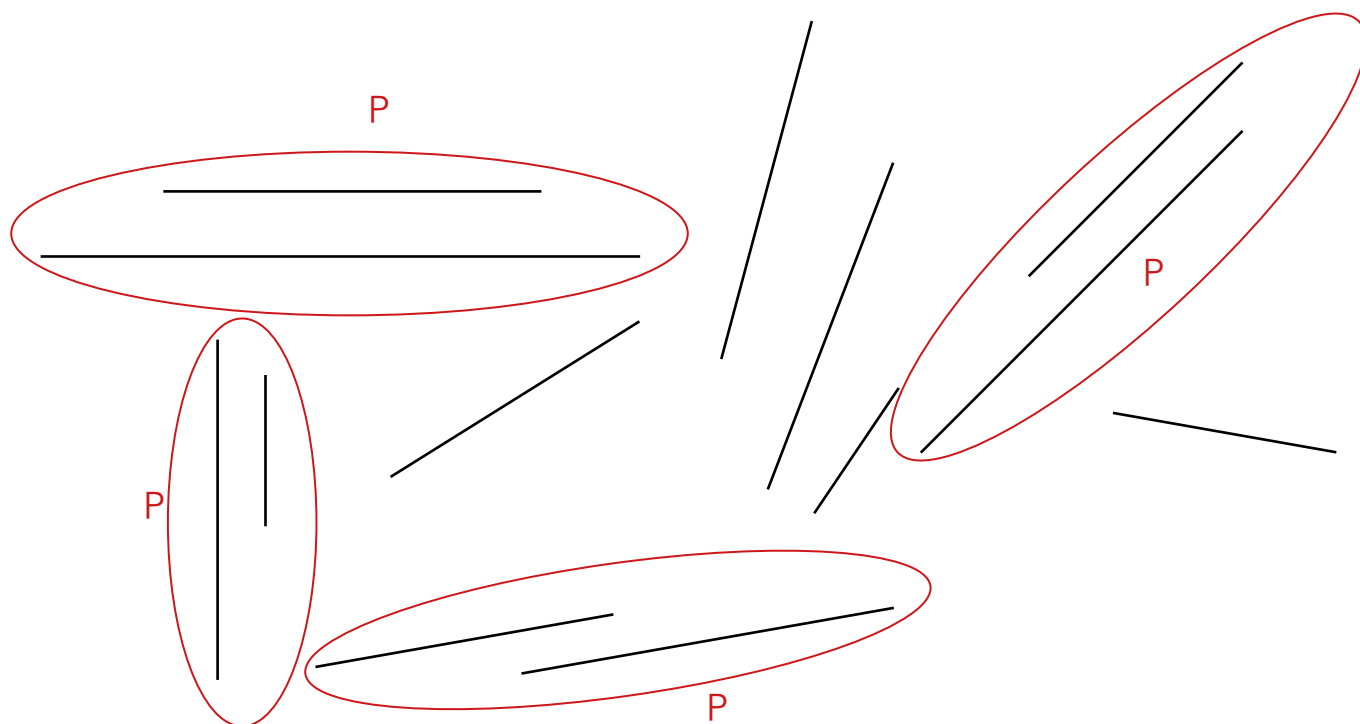
and 2 angles greater than a right angle

and at least 1 angle greater than a right angle

and at least 2 angles smaller than a right angle



Mark sets of parallel lines with a P



Challenge It 2

With 2 pairs of parallel lines, what is the greatest number of intersections you can make?

Add a line that is parallel to lines you have already drawn.

What is the greatest number of intersections now?

Repeat again and again.

What do you notice?



Parallel Lines Game

Play It 2

You need:

Instruction cards (on the next page)

Pencil and paper

To play:

Shuffle the cards in their three sets, and put them face down in three decks

Players take it in turns to turn over cards and sketch a shape.

Players turn over a card from set A and set B.

They can then decide if they want a card from set C as well.

Players sketch a shape that matches the cards they have turned over - if possible!

If they chose 2 cards and sketch a shape to satisfy both, they score 2 points.

If they chose 3 cards and sketch a shape to satisfy all 3, they score 3 points.

If they cannot sketch a shape, or it is impossible, they score zero.

To win:

The winner is the first player to score 7 points.

(Note:

You could number the cards and put them on the screen.

Players then roll dice to get a number instead of picking cards.)



Set A

Draw a
triangle

Draw a
hexagon

Draw a 4
sided
shape

Draw a
pentagon

Draw an
octagon

Set B

with at least 1
pair of
parallel sides

with at least 1
pair of
perpendicular
sides

with no
parallel
sides

Set C

and no
right
angles

and 3
angles
smaller
than a
right
angle

and 2
angles
greater
than a
right
angle

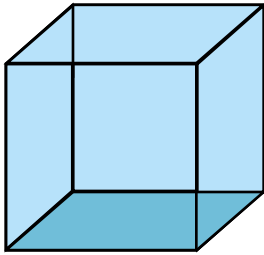
and at
least 1
angle
greater
than a
right angle

and at
least 2
angles
smaller
than a
right angle

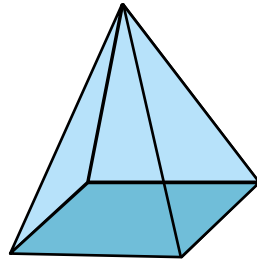


Do It 3

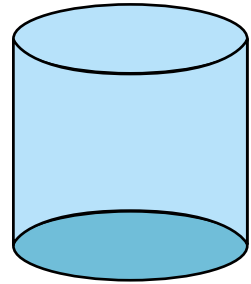
Name the 3D shapes. Describe them using mathematical vocabulary.



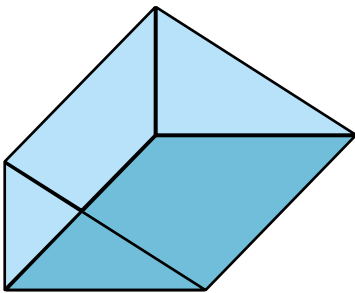
cube



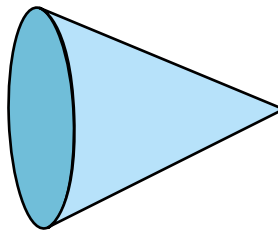
square based
pyramid



cylinder



triangular prism



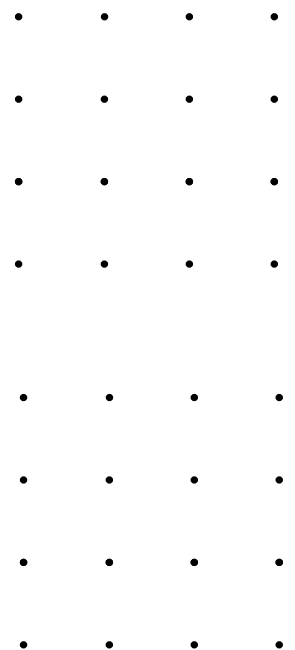
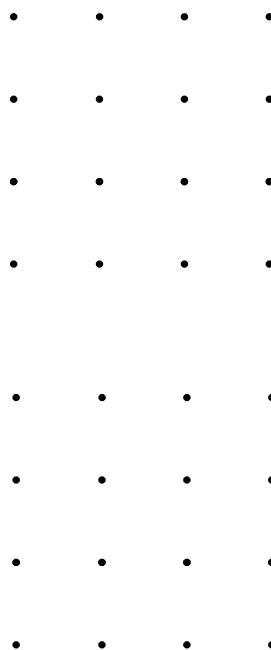
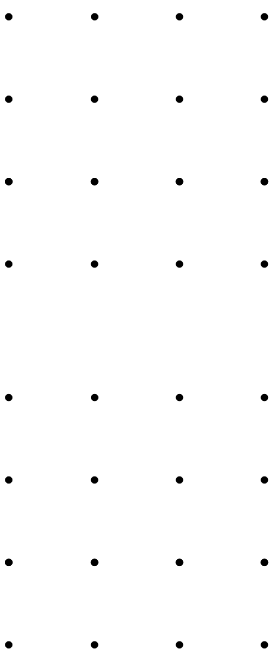
cone



cuboid

Challenge It 3

Draw polygons with 3, 4, 5, 6, 7, 8, 9 and 10 sides by joining dots on a 4 by 4 dotted grid.





Making 3D Shapes

Play It 3

You need:

Spaghetti and marshmallows (or equivalent resources)

To play:

Using spaghetti as edges and marshmallows as vertices make the following:

- 2 different pyramids
- 2 different prisms
- 2 different 3D shapes with 6 vertices
- 2 different 3D shapes with 12 edges