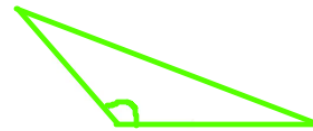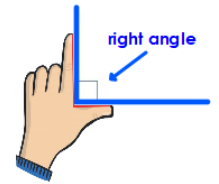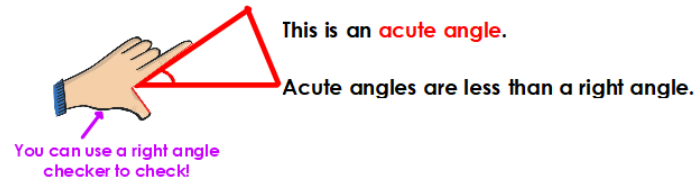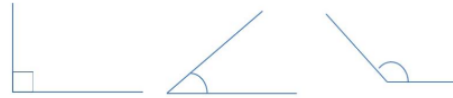|	Year 4 maths – Summer 2 Week 4 beginning: 22.06.20				
Theme	**Geometry** **Lesson 1 of 7** **Knowing types of angles**	**Geometry** **Lesson 2 of 7** **Comparing angles**	**Geometry** **Lesson 3 of 7** **Classifying triangles**	**Geometry** **Lesson 4 of 7** **Classifying quadrilaterals**	**Geometry** **Lesson 5 of 7** **Identifying symmetrical figures**
Factual fluency (to aid fluency)	**Identify properties of shapes.**	**Identify acute, obtuse and right angles.**	**Identify acute, obtuse and right angles in ONE MINUTE!**	**How many of these quadrilaterals do you know?**	**Can you match the patterns to create a symmetrical pattern?**
Problem/ activity of the day **Remember, just like in class, you can still show the depth of your knowledge** LINK	(Lesson 1 resources below) **MAKING LINKS:** In Year 3, we learnt how to make, find and compare angles. Today, we are learning to identify acute, obtuse and right angles in triangles and quadrilaterals. **THINK: (support below)** Can you help me with this problem? My friend would like to draw a quadrilateral that includes three types of angles: acute, obtuse and right angles. Can you help my friend? **Our problem is on page 158 of the textbook. Look at it now.** **SEE: (model below)** Different ways to solve the problems are on **pages 159-160** of your **textbook**. **DO:** **PART 1 - TEXTBOOK** Look at page 161. Identify acute, obtuse and right angles in the quadrilaterals. **PART 2 – WORKBOOK** Q1 a, b and c – page 121 Q2 a-d – page 122	(Lesson 2 resources below) **MAKING LINKS:** Yesterday, we learnt to identify acute, obtuse and right angles in triangles and quadrilaterals. Today, we are going to compare angles in triangles and quadrilaterals. **THINK: (support below)** Can you help me with this problem? I have drawn a quadrilateral with different angles. Can you help me compare the different angles in the quadrilateral I have drawn? **Our problem is on page 162 of the textbook. Look at it now.** **SEE: (model below)** Different ways to solve the problems are on **page 162-163** of your **textbook**. **DO:** **PART 1 – TEXTBOOK** Q1 a, b and c – page 164 Q2 a and b – page 164 **PART 2 – WORKBOOK** Q1 a-e – page 123 Q2 a and b – page 124 Q3 a and b – page 124 Q4 a, b and c – page 125	(Lesson 3 resources below) **MAKING LINKS:** In lesson 1 and 2, we learnt about the different types of angles. Today, we are learning about different triangles with different angles. **THINK: (support below)** Can you help me with this problem? I have selected 5 triangles at random. Can you spot any differences or similarities between these triangles? **Our problem is on page 165 of the textbook. Look at it now.** **SEE: (model below)** Different ways to solve the problems are on **page 166** of your **textbook**. **DO:** **PART 1 – TEXTBOOK** Q1 and 2 – page 167 Q3 – page 168 **PART 2 – WORKBOOK** Q1 a, b and c – page 126 Q2 a-e – page 127 Q3, 4 and 5 – page 128	(Lesson 4 resources below) **MAKING LINKS:** Yesterday, we learnt about the names for different triangles. Today, we are learning about different quadrilaterals with different angles. **THINK: (support below)** Can you help me with this problem? You have found a number of quadrilaterals. Can you spot any differences or similarities between these quadrilaterals? **Our problem is on page 169 of the textbook. Look at it now.** **SEE: (model below)** Different ways to solve the problems are on **page 170-172** of your **textbook**. **See video here** **DO:** **PART 1 – TEXTBOOK** Q1 – page 172 Q2, 3 and 4 – page 173 **PART 2 – WORKBOOK** Q1 a-e – page 129 Q2 a-e – page 130 Q3 a-d – page 131 Q4 – page 132	Lesson 5 resources below **MAKING LINKS:** In Year 3, we learnt about finding the line of symmetry of shapes. Today, we are going to find lines of symmetry of figures. **THINK: (support below)** Can you help me with this problem? We have two quadrilaterals: a square and a rectangle. Can we fold these shapes so that both sides are equal? **Our problem is on page 174 of the textbook. Look at it now.** **SEE: (model below)** Different ways to solve the problems are on **page 174-176** of your **textbook**. **DO:** **PART 1 – TEXTBOOK** Look at page 177. Try the activity using paper and scissors. Answer Q1 – page 177 Q2 – page 178 **PART 2 – WORKBOOK** Q1 a-d – page 133
Methods, tips, clues & checks	**Day 1 resources and answers (below)**	**Day 2 resources and answers (below)**	**Day 3 resources and answers (below)**	**Day 4 resources and answers (below)**	**Day 5 resources and answers (below)**

See below for resources to support you to THINK-SEE-DO

Quality First Education Trust

THINK:

<mark>**Look at page 158 in your textbook.**</mark>
Be sure to read the information as many times as you need to help you understand how to solve the problem.

Look carefully at the triangles on page 158.
Look for acute angles, right angles and obtuse angles in the triangles.

Draw a quadrilateral that has all three types of angles.

DO:

PART 1 – TEXTBOOK
- Look at page 161. Identify acute, obtuse and right angles in the quadrilaterals.

PART 2 – WORKBOOK
- Q1 a, b and c – page 121
- Q2 a-d – page 122

Deepening:
Yanti is playing with the hour hand and the minute hand of a clock. She makes different angles with the hands of the clock. How many right angles can she make by adjusting the clock from 1 o'clock to 2 o'clock? What times would these right angles be?

SEE:

When two straight lines meet, an angle is formed.

This is an acute angle.

Acute angles are less than a right angle.

You can use a right angle checker to check!

right angle

This is an obtuse angle.

Obtuse angles are more than a right angle but less than two right angles.

A quadrilateral is a four sided, 2D shape. All four sides of a quadrilateral are straight and closed.

Today, you will be drawing a quadrilateral that includes an acute angle, an obtuse angle and a right angle.
You must include all three angles in your quadrilateral.

THINK:

==**Look at page 162 in your textbook.**==
Be sure to read the information as many times as you need to help you understand how to solve the problem.

I have drawn a quadrilateral with different angles. Can you help me compare the different angles in the quadrilateral I have drawn?

DO:

PART 1 – TEXTBOOK
- Q1 a, b and c – page 164
- Q2 a and b – page 164

PART 2 – WORKBOOK
- Q1 a-e – page 123
- Q2 a and b – page 124
- Q3 a and b – page 124
- Q4 a, b and c – page 125

Deepening:
Can a triangle have more than one right angle?
Can a triangle have more than one obtuse angle?
Clearly explain your thinking.

SEE:

When we compare two things, we look for differences between numbers, quantities or values. Today we are comparing angles in quadrilaterals and triangles to see if they are greater than, smaller than or equal to each other.
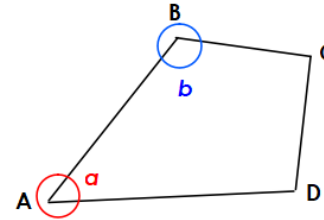
Let's start by comparing angle a and angle b.

Look at angle *a*.
It is less than a right angle.
It is an acute angle.

Now look at angle *b*.
It is greater than a right angle.
It is an obtuse angle.
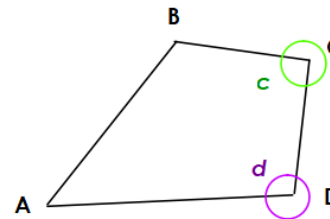
Now let's compare angle c and angle d.

Look at angle *c*.
This is a right angle.

Now look at angle *d*
It is greater than a right angle.
It is an obtuse angle.

Top Tip: Use your angle finder to check!

We can say that:
- Angle a is less than angle c.
- Angle c is less than angle d.
- Angle d is less than angle b.

Or we could write it much more efficiently!

angle a < angle c < angle d < angle b

THINK:

<mark>Look at page 165 in your textbook</mark>.
Be sure to read the information as many times as you need to help you understand how to solve the problem.

Look carefully at the triangles on page 165.
How are they alike?
How are they different?
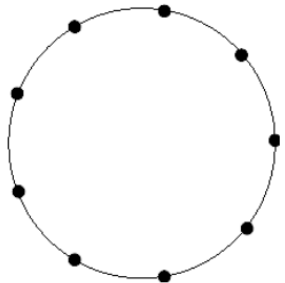**How can we group the triangles?**

DO:

PART 1 – TEXTBOOK
- Q1 and 2 – page 167
- Q3 – page 168

PART 2 – WORKBOOK
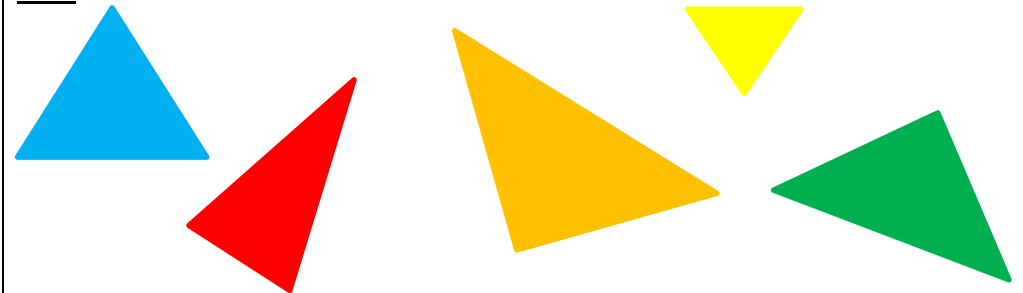- Q1 a, b and c – page 126
- Q2 a-e – page 127
- Q3, 4 and 5 – page 128

Deepening:
How many different triangles can you make on a circular peg board that has nine pegs?

Show your thinking using diagrams. You might like to use different colours for each triangle that you make!

SEE:

How are these triangles alike?
All the triangles have 3 sides and 3 angles.

How are these triangles different?
The lengths of the sides and the types of angles are different.

How can we group the triangles?

All three of the sides of these triangles are equal in length. We call these triangles **equilateral triangles**.
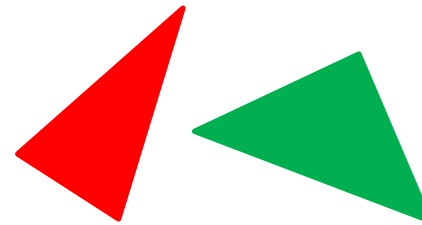
Two of the sides are equal but one side is different. We call these triangles **isosceles triangles**.
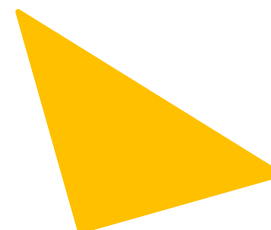
All three of the sides are different in length. We call these triangles **scalene triangles**.

THINK:

<mark>**Look at page 169 in your textbook.**</mark>
Be sure to read the information as many times as you need to help you understand how to solve the problem.

Look carefully at the quadrilaterals on page 169.
How are they alike?
How are they different?
How can we group the quadrilaterals?

DO:

PART 1 – TEXTBOOK
- Q1 – page 172
- Q2, 3 and 4 – page 173

PART 2 – WORKBOOK
- Q1 a-e – page 129
- Q2 a-e – page 130
- Q3 a-d – page 131
- Q4 – page 132

Deepening:
Which of the following statements are true?
a. Squares are 'special' quadrilaterals (that is, quadrilaterals with some additional properties).
b. Squares are special rectangles.
c. Squares are special rhombuses.
d. Rhombuses are special parallelograms.
e. Rectangles are special triangles.

Explain how you know.

SEE: VIDEO HERE
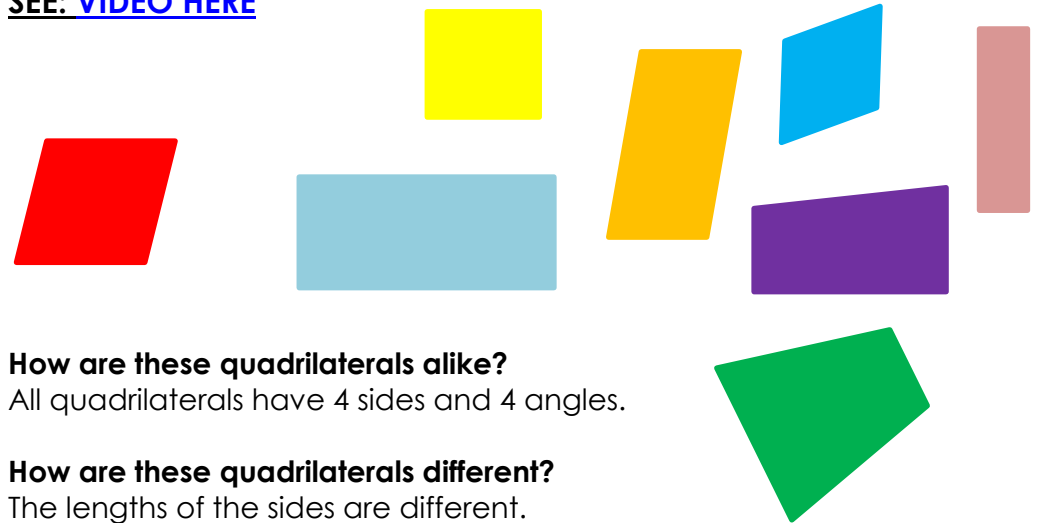
How are these quadrilaterals alike?
All quadrilaterals have 4 sides and 4 angles.

How are these quadrilaterals different?
The lengths of the sides are different.

How can we group the quadrilaterals?

Quadrilateral	Sides	Angles	Parallel Sides
Square	4 equal sides	4 right angles	2 pairs
Rectangle	2 long sides 2 short sides	4 right angles	2 pairs
Rhombus	4 equal sides	2 acute angles 2 obtuse angles	2 pairs
Parallelogram	2 long sides 2 short sides	2 acute angles 2 obtuse angles	2 pairs
Trapezium	Different lengths	Different angles	1 pair

THINK:

<mark>**Look at page 174 in your textbook.**</mark>
Be sure to read the information as many times as you need to help you understand how to solve the problem.

Look at the square and rectangle on page 174.
How can we fold these shapes so that both sides of the fold are equal?
Is there more than one way?

DO:

PART 1 – TEXTBOOK
- Try the activity using paper and scissors – page 177
- Q1 – page 177
- Q2 – page 178

PART 2 – WORKBOOK
- Q1 a-d – page 133

Deepening:
A watch has two hands – a minute hand and an hour hand. My friend says that when the time is 4:05, the position of the hands creates a right angle. I am not sure. Is my friend correct? Do the hands at 4:05 create a right angle, an acute angle or an obtuse angle? Draw a diagram to prove it!
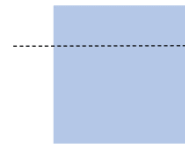
SEE:

**How can we fold these shapes so that both sides of the fold are equal?**

If I folded the square this way, both sides of the fold (the dotted line) would be equal. Therefore, this is a line of symmetry.
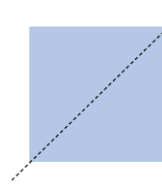
If I folded the square this way, both sides of the fold would be equal. Therefore, this is a line of symmetry.

If I folded the square this way, either side of the fold would be different. Therefore, this is not a line of symmetry.
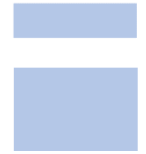
If I folded the rectangle these ways, both sides of the fold would be equal. Therefore, they are lines of symmetry.

Now we are in Year 4, we are learning to identify symmetrical figures not just 2D shapes.

I can draw a line of symmetry on this figure where both sides are equal. Therefore, this figure is symmetrical.

I can draw a line of symmetry on this figure where both sides are equal. Therefore, this figure is symmetrical.
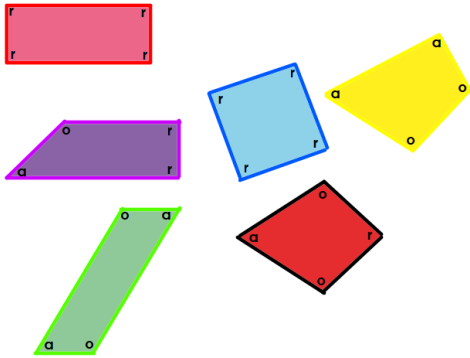
I cannot draw a line of symmetry on this figure where both sides are equal. Therefore, this figure is not symmetrical.

ANSWERS – Part 1 TEXTBOOK:

Day 1	Day 2	Day 3	Day 4	Day 5
PART 1 – TEXTBOOK	**PART 1 – TEXTBOOK**	**PART 1 – TEXTBOOK**	**PART 1 – TEXTBOOK**	**PART 1 – TEXTBOOK**

Day 1

PART 1 – TEXTBOOK

Day 2

PART 1 – TEXTBOOK

Question 1
a. angle e
b. angle h
c. angle j

Question 2
a. k, n, m
b. r, s, p, q

Day 3

PART 1 – TEXTBOOK

Question 1
F and H

Question 2
J, C and L

Question 3
M and N

Day 4

PART 1 – TEXTBOOK

Question 1
E – all sides are equal

Question 2
D and G – 4 right angles, 2 pairs of parallel sides and opposite sides are equal

Question 3
C – 1 pair of parallel sides

Question 4
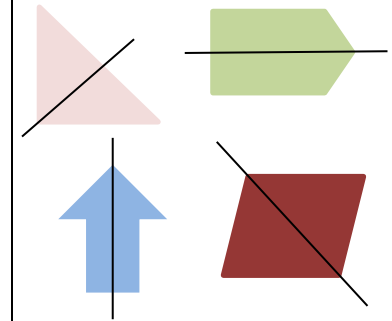I and D – both pairs of opposite sides are parallel

Day 5

PART 1 – TEXTBOOK

Question 1
Yellow butterfly and green leaf are symmetrical.

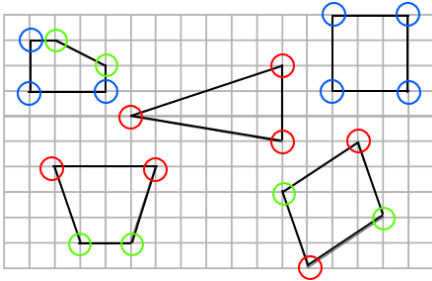The house would be symmetrical if there was not a chimney.

Question 2

ANSWERS – PART 2 WORKBOOK AND DEEPENING:
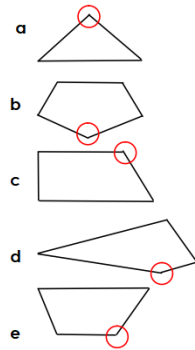
Day 1

Question 1

Question 2
Answers will vary.
Send to your teacher for checking.

Day 2

Question 1

a

b

c

d

e

Question 2
a. angle a / angle b
b. angle d / angle c
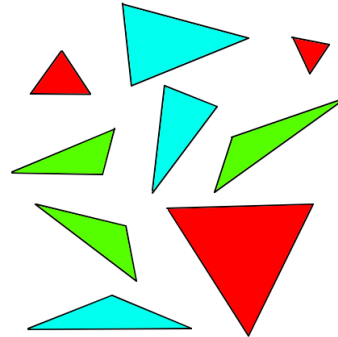
Question 3
a. angle g
b. angle L

Question 4
a. angle c / angle a / angle b
b. angle f / angle e / angle d
c. angle y / angle x / angle w / angle z.

Deepening:
A triangle cannot have one more than right angle or more than one obtuse angle because the sides of the triangle would not meet.

Day 3

Question 1

Question 2
a. equilateral
b. scalene
c. scalene
d. isosceles
e. equilateral

Question 3
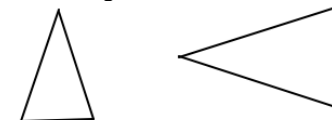*Answers may vary but should look something like this:*

Question 4
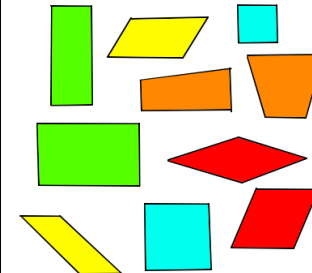*Answers may vary but should look something like this:*

Question 5
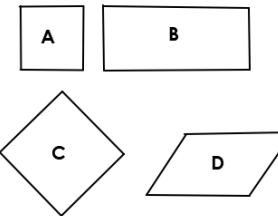*Answers may vary but should look something like this:*

Day 4

Question 1

Question 2
a. rectangle
b. rhombus
c. square
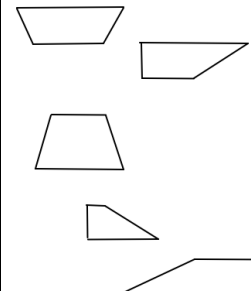d. trapezium
e. parallelogram

Question 3
Answers may vary but could look something like this:

Question 4
Answers may vary but could look something like this:

Day 5

Question 1
a. butterfly is symmetrical
b. bottle is symmetrical
c. cross is symmetrical
d. middle smiley face with circles for eyes is symmetrical

Deepening:
When the time is 4:05, the hands are almost creating a right angle. The angle that they create is actually an obtuse angle because it is ever so slightly greater than a right angle. Therefore, my friend is incorrect.

		Deepening: Send your answer to your teacher for checking.	**Deepening:** Statements a-d are correct. Statement e is incorrect because a triangle is not a quadrilateral.	