

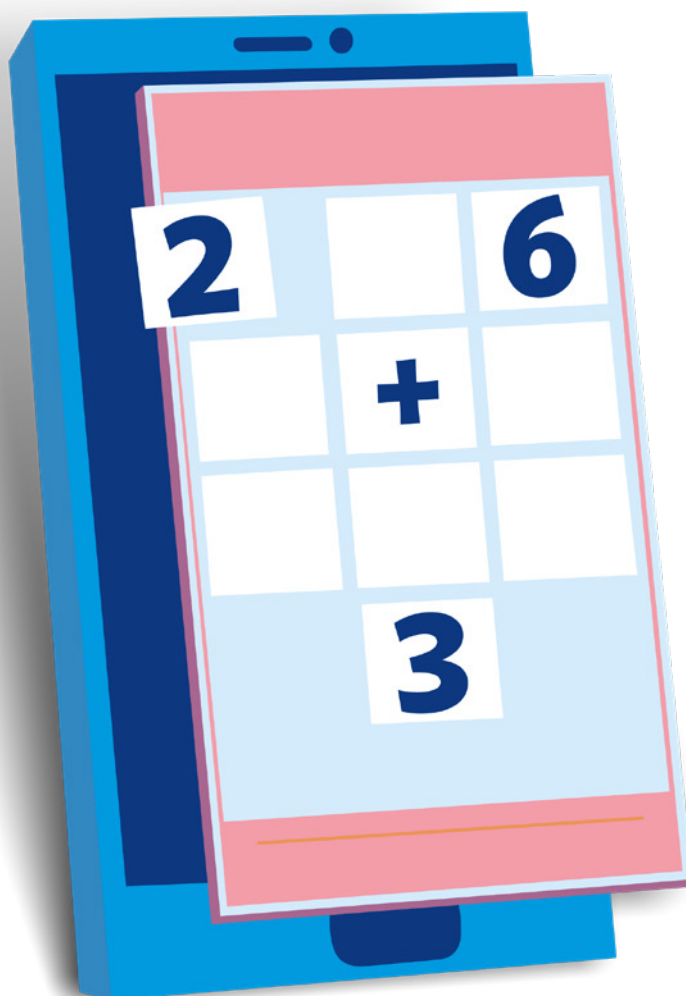


Coventry Counts

Year 6 teacher guide

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Year 6 - Place value

This activity links with the following objectives within the national curriculum

- Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.
- Round any whole number to a required degree of accuracy.

Activity

The children need to work in groups of 3 to 5 to create a poster displaying the top 5 car brands in the world. This activity will involve children solving problems using the skills developed in the place value unit.

Time for activity

Approx. 20 minutes

Delivery notes

Resources: Year 6 Place value worksheet
A3 card
Pencil
Rubber
Colouring pencils
Scissors
Glue

Lesson plan

In this activity the children imagine they're working in the marketing team at the Coventry Transport Museum to create a poster displaying the top 5 selling car brands in the world in 2019.

Start the session by asking the children about whether they've been to the transport museum and what different vehicles are there. You could ask the children if they know any car brands and what they think the world's best-selling car brand is. See suggested discussion points below.

Then explain the activity: Children are to work in groups of 3 to 5. The main aim is to create a poster displaying the top 5 selling car brands in the world. To do this they need to complete 5 tasks which involve using the skills developed in the place value unit.

Suggested discussion points

- Have they been to the Coventry Transport Museum?
- What different vehicles are there?
- Do they know any car brands?
- What do they think is the best-selling car brand in the world?

Optional extension activity

To work out the difference in the minimum and maximum temperature in the countries where the car brands were established. This activity involves using negative numbers. This activity links to the following curriculum objective.

- Use negative numbers in context, and calculate intervals across 0.

Answers

Task 1

Car make	How many sold
General Motors	Two million, four hundred and sixty-three thousand, nine hundred and seventy-one.
Hyundai and Kia	Two million, two hundred and ninety-two thousand, five hundred and ninety-nine.
Renault, Nissan, Mitsubishi, Alliance	Two million, nine hundred and ninety-two thousand, four hundred and seventy-one.
Toyota	Three million, one hundred and fifteen thousand, three hundred and forty-three.
Volkswagen	Three million, two hundred and ninety-six thousand, four hundred and forty.

Task 2 and 4

Car make	Position	Number sold	Number sold to nearest 100,000	Number sold to nearest 10,000	Number sold to nearest 1,000
General Motors	4	2,463,971	2,500,000	2,460,000	2,464,000
Hyundai and Kia	5	2,292,599	2,300,000	2,290,000	2,293,000
Renault, Nissan, Mitsubishi, Alliance	3	2,992,471	3,000,000	2,990,000	2,992,000
Toyota	2	3,115,343	3,100,000	3,120,000	3,115,000
Volkswagen	1	3,296,440	3,300,000	3,300,000	3,296,000

Task 3

Car make	Year established (roman numerals)	Year established
General Motors	MCMVIII	1908
Hyundai and Kia	MCMXCVIII	1998
Renault, Nissan, Mitsubishi, Alliance	MCMXCIX	1999
Toyota	MCMXXXVII	1937
Volkswagen	MCMXXXVII	1937

Optional extension activity

Car Make	Country	Average minimum temperature	Average maximum temperature	Range in average maximum and minimum
General Motors	Detroit, USA	-4	23	27
Hyundai and Kia	South Korea	-2	26	28
Renault	France	4	20	16
Toyota	Japan	5	26	21
Volkswagen	Germany	1	20	19

1. South Korea
2. Detroit, South Korea, Germany, Japan, France.
3. 30

Year 6 - Algebra

This activity links with the following objectives within the national curriculum

- Use simple formulae.
- Generate and describe linear number sequences.
- Express missing number problems algebraically.
- Find pairs of numbers that satisfy an equation with 2 unknowns.

Activity

Children work in groups of 2 or 3 using the skills developed in the algebra unit to see if they can be the first to find the gems which have been hidden somewhere in the cathedral.

Time for activity

Approx. 20 minutes

Delivery notes

Resources: Year 6 Algebra worksheet
Pencil
Rubber
Paper

Lesson plan

In this activity the children work in groups of 2 or 3. They imagine they're archeologists that have found a note which states that some valuable gems have been buried under the old St Michael's church. The note contains algebra problems, which when solved will tell them which room the treasure is buried in.

Start the session by discussing the cathedral, see some discussion points below.

Then explain the activity: Children are to be split into groups of 2 or 3. They're to imagine they're archeologists who have found a note from a long time ago that says some gems have been buried under old St Michael's church. They need to work quickly as a team to solve the puzzles which will tell them in which room the gems are buried. The aim is to be the first team to find out which room the gems are buried, this team will get to say the answer. Let all the other teams finish before the winning team says their answer.

Suggested discussion points

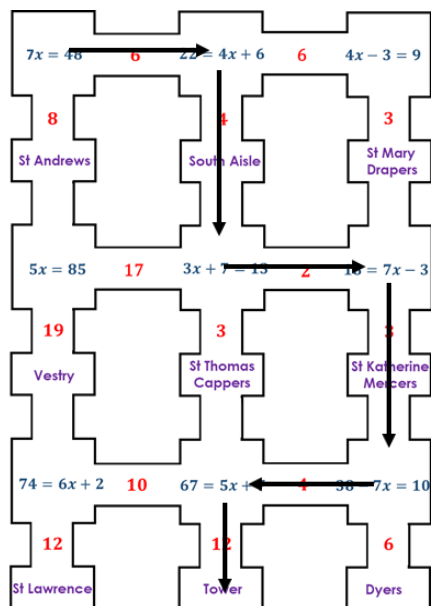
- **There are three cathedrals:** St Mary's Priory, St Michael's Cathedral first structure and second structure.
- **St Michael's Cathedral was bombed in the Second World War:** The ruin is still here today, and the second structure was built after the Second World War.

Optional extension activity

They're to create a timeline of the history of Coventry.

Answers

Puzzle 1



Puzzle 2

1. 55, 63
2. 64, 52
3. 55, 62
4. 57, 52

Puzzle 3

1. $a=5$
2. $b=3$

Puzzle 4

1. 4
2. 5

The gems are buried in room 8 the Dyers.

Year 6 - Calculations

This activity links with the following objectives within the national curriculum

- Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.
- Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders.
- Perform mental calculations, including with mixed operations and large numbers.
- Identify common factors, common multiples and prime numbers.
- Solve problems involving addition, subtraction, multiplication and division.

Activity

Children work in groups of 2 or 3 using the skills developed in the calculations unit to see if they'll be the first to crack the code to find out when the Germans will bomb Coventry.

Time for activity

Approx. 20 minutes

Delivery notes

Resources: Year 6 Calculations worksheet
Pencil
Rubber
Paper
Bell or whistle

Lesson plan

In this activity the children imagine they're working as secret agents to try and crack the code to when the Germans are planning to bomb Coventry.

Start the session by asking the children whether they've visited the War Memorial Park and why it's there? Then discuss about how the Second World War affected Coventry and explain that during the war people were employed to try to crack messages sent between the Germans. See the suggested discussion points.

Then explain the activity: Children are to be split into groups of 2 or 3. They need to work quickly as a team to solve the problems to determine the time and date the Germans plan to bomb Coventry. The aim is to be the first team to crack the code and ring the bell. The team who rings the bell first can say the answer. Let all the other teams finish before the winning team says their answer.

Suggested discussion points

Why is the War Memorial Park there? The War Memorial Park was opened in July 1921 as a tribute to the people of Coventry who died in the First World War. In the park is the war memorial monument and inside it is a room called the chamber of silence which contains the roll of the fallen, which is a list of all Coventry men killed in the two world wars and the Gulf War.

How was Coventry affected by the war? The war took place between 1939 and 1945. From August 1940 the Germans began to bomb Coventry destroying many buildings including the cathedral. There were several bombings. The most severe bombing is the date the children will find out once they complete the activity.

How did the British crack messages sent between the Germans? During the war people work at Bletchley Park to try and find out how German Enigma operators tried to keep their messages secret, how they sent them and how the codebreakers listened to the messages. Alan Turing and others built the Enigma machine which turned out to be a crucial help in the effort to win the war.

Optional extension activity

Use the internet to find out about the Morse code. Can you find the Morse code and translate the message at the end of this activity?

Answers

Clue 1

522

320

25

558

102

12.3

558

17

25

1

102

12.3

81

42

3

102

Clue 2

7,824 ($7+8+2+4=21$, $2+1=3$)

16,946 ($1+6+9+4+6=26$, $2+6=8$)

140 r5

38 r6

86 r $\frac{2}{7}$ ($2+7=9$)

28 r $\frac{3}{4}$ ($3+4=7$)

Clue 3

1. 14

2. 34

3. 18

4. 4

5. 14

The answer to the code

Quarter past eight on 14 November.

Optional extension activity

Sam from Coventry is a spy

Year 6 - Fractions, decimals and percentages

This activity links with the following objectives within the national curriculum

- Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
- Compare and order fractions, including fractions >1 .
- Multiply one-digit numbers with up to 2 decimal places by whole numbers.
- Solve problems which require answers to be rounded to specified degrees of accuracy.

Activity

The children work individually and imagine they're working in a restaurant where they've been asked to complete tasks which will involve using the skills developed in the fractions, decimals and percentages unit. The activity will involve the children getting creative by colouring, cutting and sticking.

Time for activity

Approx. 25 minutes

Delivery notes

Resources: Year 6 Fractions, decimals and percentages worksheet
Pencil
Rubber
Colouring pencils
Scissors
Glue

Lesson plan

In this activity the children imagine they're working in the café at Coombe Abbey as a chef and they need to complete tasks which involve the children getting creative by colouring, cutting and sticking.

Start the session by asking the children about whether they've been to Coombe Abbey and ask them if they know what attractions are there.

Then explain the activity: Children are to work individually. They imagine it's lunch time and they're working as a chef at the café in Coombe Abbey. They've been set several tasks which involve making sure the customers get the correct amount of food and helping them work out their food bill. Children need to complete the tasks so that the customers get good quality food, get what they've ordered and pay the right price.

Suggested discussion points

- Have they been to Coombe Abbey?
- What is there to do at Coombe Abbey?

Optional Optional extension activity

This activity involves solving clues to match the walk with the distance of the walk. This activity links with the following objectives within the national curriculum

- Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places.

Answers

Task 1

1. $1 \frac{5}{24}$
2. $1 \frac{1}{24}$
3. $1 \frac{13}{24}$
4. $1 \frac{3}{4}$

Task 2

1. £44.70
2. £8.57

Task 3

1. 3 cakes
2. 36 plates

Task 4

1. Yasmin, Hugo, Mylo, Jane, Emily
2. a. 0.5 and 50%
b. 0.6 and 66.6%

Optional extension activity

Walk	Distance in miles	Distance to 1 decimal place
The Woodland walk	2.836	2.8
The Lakeside walk	3.296	3.3
Trip to the summit	6.174	6.2
The Meadow walk	4.957	5
The Village walk	2.547	2.5
Walk around the grounds	1.284	1.3

Year 6 - Converting units

This activity links with the following objectives within the national curriculum

- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate.
- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places.
- Convert between miles and kilometres.

Activity

The children are to work in pairs. They imagine they're on a shopping trip with Mum where they go to Coventry Building Society and other shops in the city centre. The activity will involve converting between different units of measure and solving measurement problems.

Time for activity

Approx. 20 minutes

Delivery notes

Resources: Year 6 Converting units worksheet
Paper
Pencil
Rubber

Lesson plan

In this activity the children are to work in pairs and imagine they're in town with their Mum. They start at the Coventry Building Society then they go into different shops where they convert between different units of measure and solve measurement problems.

Start the session by asking the children if they know what a building society is.

Then, split the children into groups of 2.

Then explain the activity: which is to imagine they're in town with their Mum. They'll go into different shops where they need convert between different units of measure and solve measurement problems.

You start off in Coventry Building Society where you pay your savings into your account. Then you go to several shops where you'll solve several measurement problems. Work together to solve the problems. Can you purchase the correct quantities of all the items you Mum needs?

Suggested discussion points

- What is a building society?

Optional extension activity

They're to solve clues to determine how far away different cities are from the UK.

Answers

1. Yes.

2. a)

Town/City	Miles away	Km away
Bristol	100	160
Edinburgh	300	480
Great Yarmouth	150	240
Newquay	250	400
York	150	240

b) Bristol, Great Yarmouth and York.

3. a) Width = 0.4m, length = 0.95m

b) 680mm

c) 6 pieces

4. a)

Fruit or Vegetable	Kg	grams
Bananas	0.7	700
Carrots	0.9	900
Melon	2.2	2200
Butternut squash	2.8	2800

b) 5 more carrots

5. 6.176kg

6. a) 7 pounds

b) 6 eggs, 4 ounces of flour, 8 ounces of sugar and no butter

c) It costs £7.50 to buy 2 litres bottles and £8.00 to buy 150ml bottles. It is cheaper to buy 2 litres bottles.

7. 1 hours, 35 minutes

8. a)

Stops	Train 1	Train 2	Train 3
Coventry	11:49	12:02	12:14
Canley	11:52		12:17
Tile Hill	11:56		12:21
Berkswell	11:59		12:24
Hampton-in-Arden	12:03		12:28
Birmingham International	12:06		12:31

b) 3 minutes

Optional extension activity

Place	Times visited this year	Miles away	Time takes
Paris	4	290	1 hr 25 mins
Madrid	5	1,060	2 hr 25 mins
Moscow	2	1800	4 hr 5 mins
Warsaw	4	1,010	3 hr
Berlin	3	680	2 hr 5 mins

Year 6 - Perimeter, area and volume

This activity links with the following objectives within the national curriculum

- Recognise that shapes with the same areas can have different perimeters and vice versa.
- Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units (for example, mm^3 and km^3).
- Calculate the area of parallelograms and triangles.

Activity

This is a class quiz where the children will be shown different shapes. They look at shapes and say which one they think has either the same or largest perimeter, area or volume, before calculating them to see if what they predicted was correct.

Time for activity

Approx. 20 minutes

Delivery notes

Resources: Year 6 Perimeter, area and volume worksheet and presentation
Pencil
Rubber
Paper

Lesson plan

In this activity the children are to take part in a quiz where they'll be shown different shapes. They'll guess which shapes they think have either the same or largest perimeter, area or volume. Then they calculate these to see if what they predicted was correct.

Start the session by asking the children about what they know about Coventry Building Society Arena, and whether they've been and what they did there?

Then give each child a quiz sheet. Then explain that they'll take part in a quiz which involves them guessing which shapes they think have either the same or largest perimeter, area or volume before calculating these to see if what they predicted was correct. All shapes are to scale.

Then start to go through the presentation, which shows 8 questions. For the first 2 questions they look at 4 shapes and guess which 2 they think has the same perimeter and area. They tick their guess on their sheet. Make sure you show the slide without the measurements on when they make their guess. Then show the slide with the measurements on and asked them to calculate the perimeter and area to see if what they guessed was correct.

For questions 3 to 5 they look at 2 shapes and guess which they think has the largest area and tick this on their sheet. Again, make sure you show the slide without the measurements on when they make their guess. Then show the slide with the measurements on and asked them to calculate the area to see if what they guessed was correct.

For the last 3 questions they look at 2 shapes and guess which they think has the largest volume and tick this on their sheet. Again, make sure you show the slide without the measurements on when they make their guess. Then show the slide with the measurements on and asked them to calculate the volume to see if what they guessed was correct.

Suggested discussion points

- What is Coventry Building Society Arena?
- Have you been to Coventry Building Society Arena?
- If you have been, what did you go there for?

Optional extension activity

They're to investigate famous rugby stadiums and other famous sporting stadiums to see how much they differ in area.

Year 6 - Ratios

This activity links with the following objectives within the national curriculum

- Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.

Activity

The children are to work in groups and make some rocky road cakes.

Time for activity

Approx. 25 minutes

Delivery notes

Resources: Year 6 Ratios worksheet
18 cm square tin
Mechanical kitchen scales
Baking parchment
Access to a fridge
Access to a microwave
Food ingredients see below

Lesson plan

In this activity the children are given the ingredients to make rocky road cakes which serves 8. However, they need to use the skills developed in the ratio unit to work out the ingredients they need to make 10. Then they'll make them.

Then explain the activity, which is to work in groups of 5 or 6 and work out the quantity of each of the ingredients they need to make 12 rocky road cakes, and then follow the recipe to make them after you've weighted out all the ingredients they think they need.

Discussion

Why are the correct amounts of ingredients important when making a cake?

Task

You and your team have been given the ingredients to make 8 rocky road cakes. However, your task is to make 10 rocky road cakes. You need to work out the how much is needed of each ingredient to make 10 cakes; then you'll follow the recipe to create them.

Optional extension activity

They need to use the skills developed in the ratios unit to calculate how much they need of each ingredient to make 4 mocktails.

Answers

Ingredients to make 12 rocky roads

200g digestive biscuits

135g butter

200g dark chocolate

100g mini marshmallows

2 ½ tablespoons of golden syrup.

Optional extension activity

Fizzy cherry bomb

1800ml cherryade

1200ml lemonade

Tropical punch

800ml pineapple juice

3200ml orange juice

Autumn fizz

1,200ml apple juice

800ml cherryade

400ml lemonade

Tropical fizz

1,000ml pineapple juice

500ml orange juice

2,000ml lemonade

Year 6 - Statistics

This activity links with the following objectives within the national curriculum

- Interpret and construct pie charts and line graphs and use these to solve problems.
- Calculate and interpret the mean as an average.

Activity

The children will work individually and imagine they're a news reporter at The Coventry Evening Telegraph who has been asked to create a news report giving a summary of how Coventry City Football Club have performed over the last few seasons. This task will involve creating a line chart, a pie chart and calculating an average.

Time for activity

Approx. 20 minutes

Delivery notes

Resources: Year 6 Statistics worksheet
Pencil
Ruler
Rubber
Colouring pencils

Lesson plan

In this activity the children imagine they're a news reporter at The Coventry Evening Telegraph and they need to interpret information and create a news article on Coventry City Football Club's performance over the last few seasons.

Start the session by asking the children about what they know about Coventry City Football Club and whether they've been to watch them play football. See the suggested discussion points.

Then explain the activity: Children are to work individually. Their first task is to create a line chart and answer questions relating to this chart. Then they'll need to create a pie chart and answer questions relating to this chart. The final task is to complete the news report by creating a headline and using the answers to the first and second task to write a short summary on Coventry City Football Club's performance over the last few seasons.

Suggested discussion points

- Have you been to watch Coventry City Football Club play?
- Where do they currently play?
- What league are they currently in and how are they performing?

Optional extension activity

Complete the table on goal difference and answer questions on this table?

Answers

Task 1

- a. 2017-2020
b. 2016-2017 and 2017-2018 season
c. 66

Task 2

- 36
- 50%
- $\frac{1}{6}$

Optional extension activity

Team	Goals scored	Goals conceded	Goal difference
Gillingham	46	44	2
Ipswich Town	50	50	0
Bristol Rovers	44	45	-1
Blackpool	43	47	-4
Shrewsbury Town	40	46	-6

- Gillingham
- 8
- 4

Year 6 - Properties of shapes

This activity links with the following objectives within the national curriculum

- Recognise, describe and build simple 3D shapes, including making nets.

Activity

The children draw the nets of a triangular prism and cuboid and then they cut them out and build them to make them look like a tent and suitcase respectively. Once built they need to describe the properties of these shapes.

Time for activity

Approx. 30 minutes

Delivery notes

Resources: Year 6 Shape properties worksheet
Pencil
Rubber
Card
Scissors
Glue
Ruler

Lesson plan

In this activity the children draw the nets of a triangular prism and cuboid and then cut them out and build them to make them look like a tent and suitcase respectively. Once built they need to describe the properties of these shapes.

Start the session by asking the children if they know there's an airport in Coventry, see the discussion points below. Although it's small, there are still the occasional passenger flights taking people abroad for their holiday.

Then explain the activity, which is to work on your own and create the nets of a triangular prism and cuboid. These 2 nets when built will look like a tent and a suitcase. Then they'll describe the properties of these 2 shapes.



Suggested discussion points

- Coventry Airport was open in 1936.
- During World War Two it was used a fighter station by the Royal Air Force and was damaged in the 1940 Coventry Blitz.
- After the war it was a passenger and freight terminal.

Optional extension activity

Is to solve the clues to a crossword on shapes.

Answers

Shape name	Picture	Number of flat faces	Number of curved faces	Number of sides	Number of vertices
Cuboid		6	0	12	8
Triangular prism		5	0	9	6

Optional extension activity

Across

- Square
- Circle
- Eight
- Circumference
- Sixty

Down

- Decagon
- Parallelogram
- Protractor
- Diameter
- Regular

Year 6 - Position and direction

This activity links with the following objectives within the national curriculum

- Describe positions on the full coordinate grid (all 4 quadrants).
- Draw and translate simple shapes on the coordinate plane, and reflect them in the axis.

Activity

The children are to imagine they're lost in Coventry and are searching for their friend who is at the Lady Godiva statue. They'll use the skills developed in the position and direction to locate their friend.

Time for activity

Approx. 20 minutes

Delivery notes

Resources: Year 6 Position and direction worksheet and presentation
Paper
Pencil
Rubber

Lesson plan

In this activity the children are to work in pairs. They imagine they're lost in Coventry and are searching for their friend who is at the Lady Godiva statue. They'll use the skills developed in the position and direction to locate their friend.

Start the session by asking the children if they've heard of Lady Godiva. See the discussion points below.

Then explain the activity, which is to work in groups of 2 and imagine they're both lost in different locations in Coventry. They need to work together to find out where they both are then they need to find their other friend who is waiting for them at the Lady Godiva statue. This task will involve them using the skills they developed in the direction and position unit.

Then, give each child a map of Coventry and the Lady Godiva worksheet and start to go through the presentation.

Suggested discussion points

- Have they heard of Lady Godiva?
- There is a statue of her, where is it?
- Why is there a statue of her?
- What did Lady Godiva do?
- What is she famous for?

The story

You have arranged to meet your friends Mohammad and Megan at the Lady Godiva statue in Coventry. Mohammad has found his way to the statue, but you and Megan have become lost at different locations in Coventry. Megan rings you and says if we can find our way to Coventry Building Society then my Mum, the branch manager, will give us directions to the Lady Godiva statue. You have a map, but you don't know your location on it. Can you find your friends?

Optional extension activity

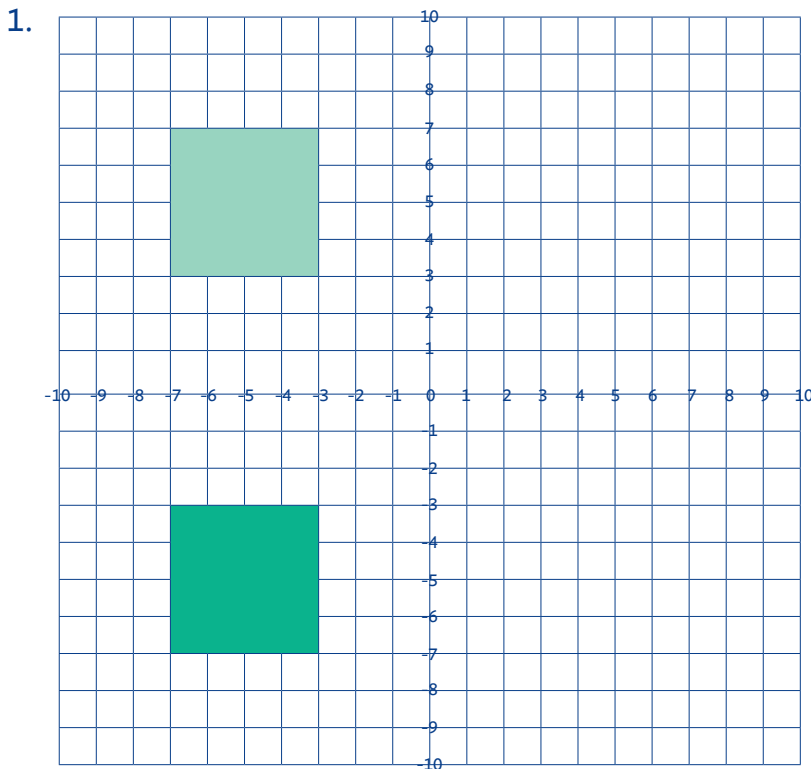
Create a map of your local area with points of interest. Then plot a route on this map and describe your route using different points of interest.

Answers

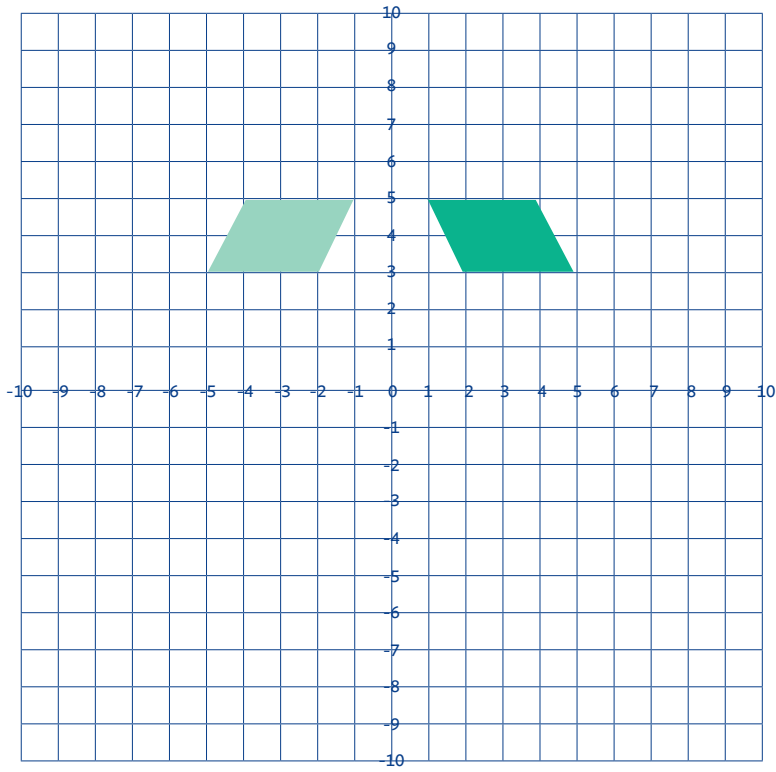
Task 1

Letter	Coordinates	Place
A	(2,7)	The Transport Museum
B	(-6,5)	The Belgrade Theatre
C	(8,4)	The Fargo Village
D	(1,2)	The Cathedral
E	(5,-2)	The Herbert Art Gallery
F	(-9,-8)	The Memorial Monument

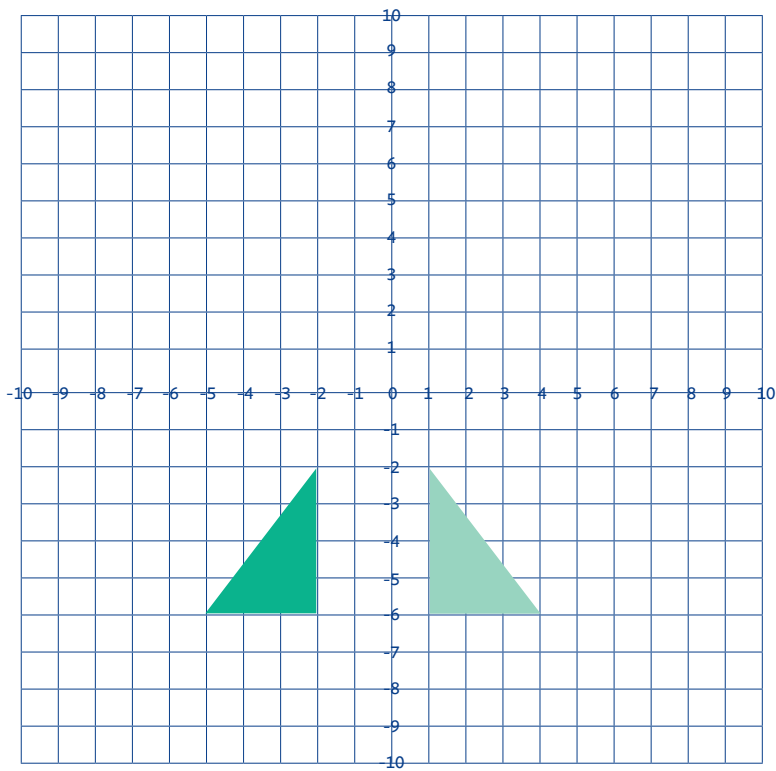
Task 2



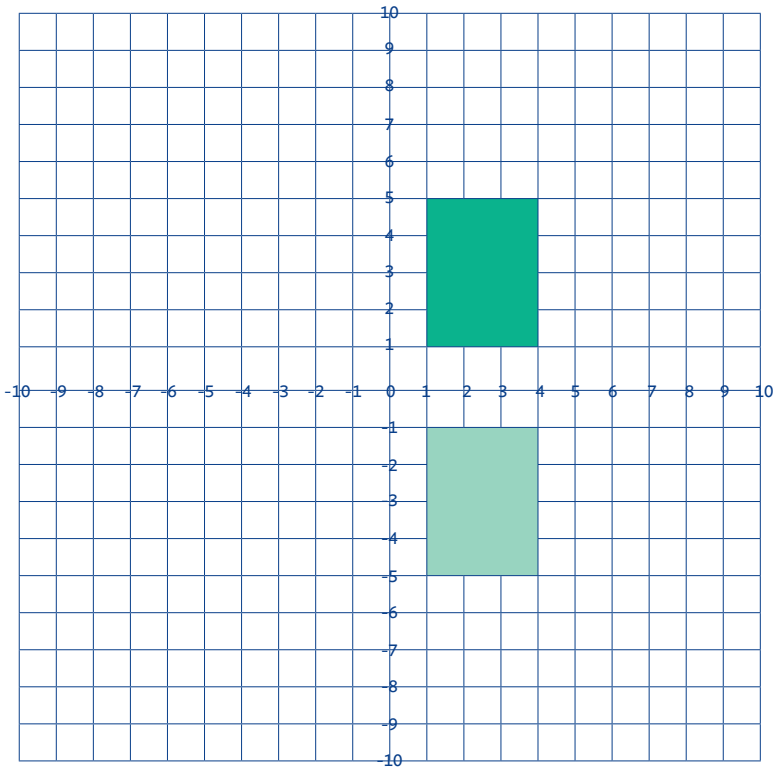
2.



3.



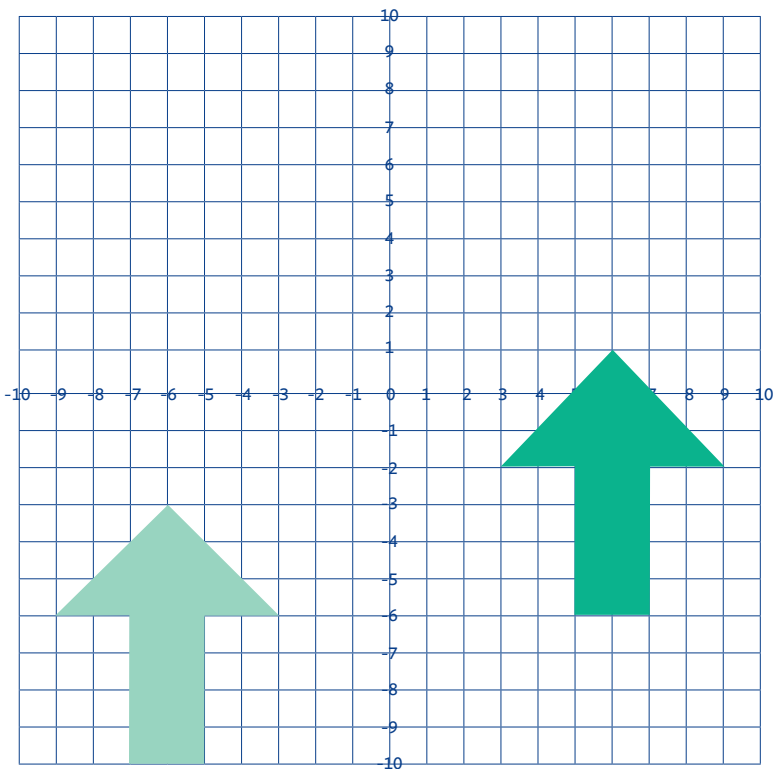
4.



The reflected coordinate $(1,5)$ appears twice therefore, your friend's location is $(1,5)$.

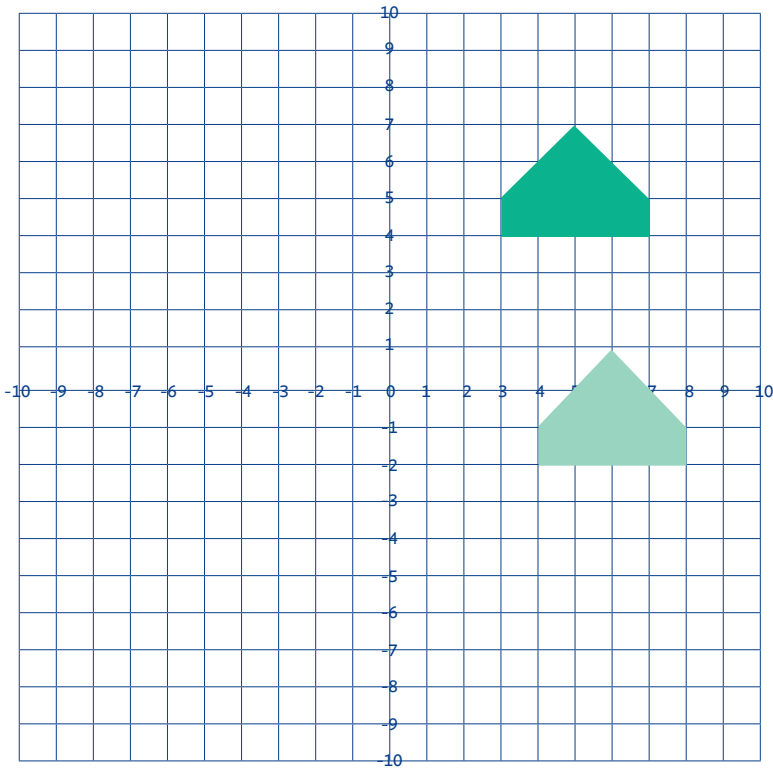
Task 3

1.



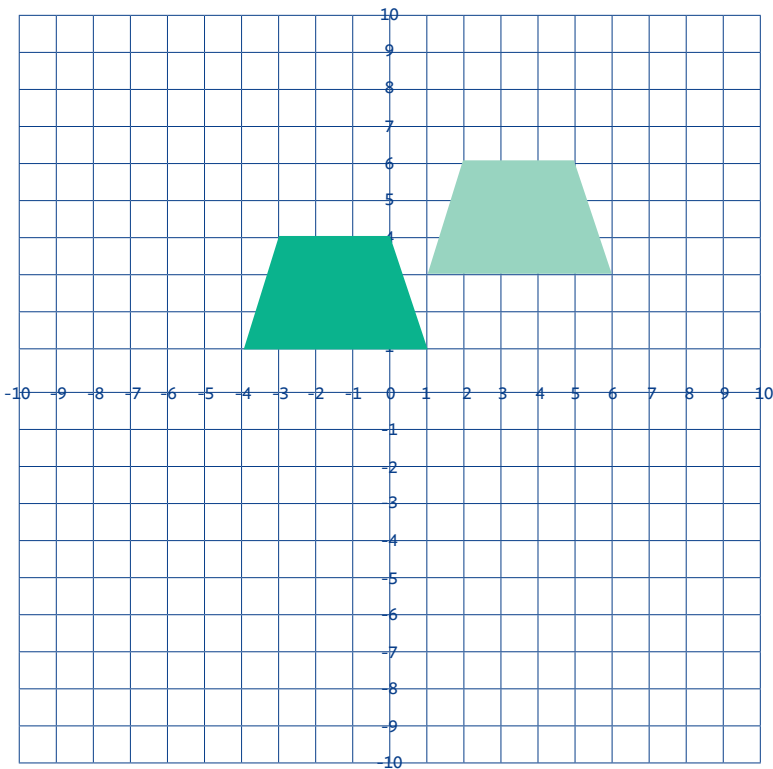
12 units to the right and 4 units up

2.



1 unit to the left and 6 units up

3.



5 units to the left and 2 units down

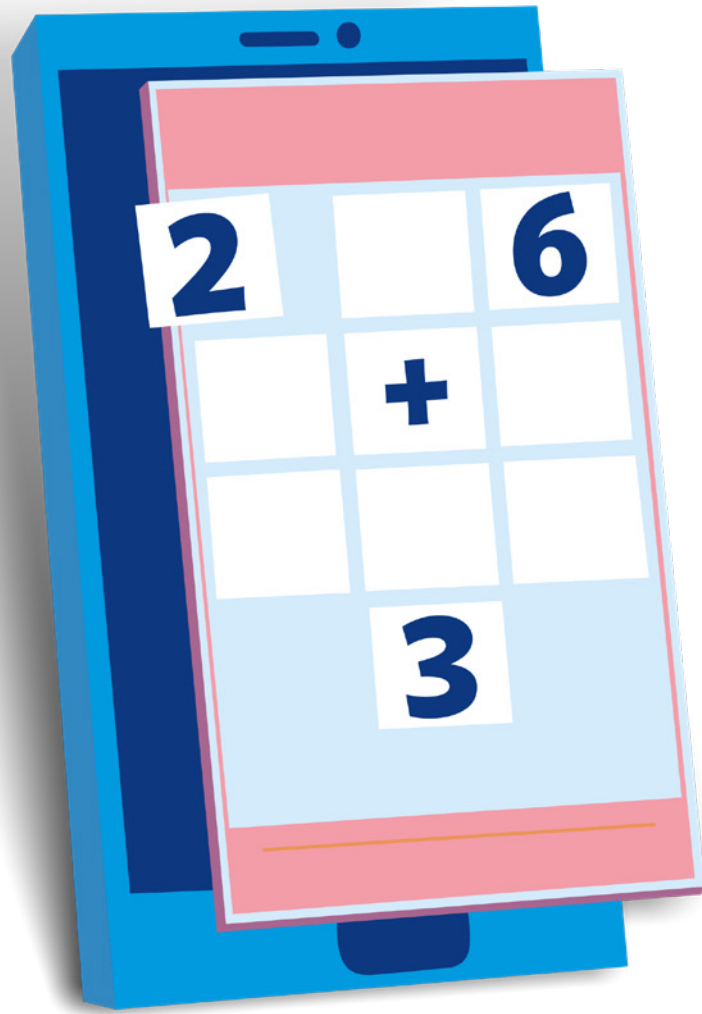
Translate from coordinate $(-9, -8)$ to $(3, -4)$, then translate to $(2, 2)$, then translate to $(-3, 0)$.
Therefore, Coventry Building Society is coordinate $(-3, 0)$.

Task 4

Move 4 units to the left and 5 units down.

Task 5

The coordinates for the Lady Godiva statue are $(-5, -3)$.



Kindness changes lives

We're passionate about making a real difference to the lives of young people in and around Coventry. That's why we work with local schools to help support children's education.

All together, better