



SATs presentation 2023-24

Mathematics

Emmanuel Middle School



Who takes SATs?

Children in English schools take SATs in year 2 and in year 6. In year 2, children are tested in maths and English (reading and spelling, punctuation and grammar). These tests are generally carried out in a very informal way so your child's under as little pressure as possible. There's no time limit and they're often done in small groups.

In year 6, the SATs become more formal – they're taken in a formal setting within a time limit.

Information about Year 6 SATs: Maths




The maths test consists of three papers - one arithmetic paper of 30 minutes and two reasoning papers of 40 minutes each.

2019 national curriculum tests

Key stage 2

Mathematics
Paper 1: arithmetic

First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	
School name						
DfE number						




2019 national curriculum tests

Key stage 2

Mathematics
Paper 2: reasoning

First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	
School name						
DfE number						




2019 national curriculum tests

Key stage 2

Mathematics
Paper 3: reasoning

First name						
Middle name						
Last name						
Date of birth	Day		Month		Year	
School name						
DfE number						





Information about Year 6 SATs: Maths

The arithmetic paper tests your child's understanding of number along with mental and written calculation skills. Your child will need to know a range of number facts (such as their times tables). They're also tested on their knowledge of written methods of calculations

Useful preparation- knowing times table recall facts



Know all your times tables and related division facts up to 12 x 12.

It is a government expectation that all children know all their times tables and related division facts up to 12 x 12 by the end of Year 4. This means being able to quickly know that $7 \times 8 = 56$ and also that $96 \div 12 = 8$.

Knowing all your times table facts helps to lighten the cognitive load.

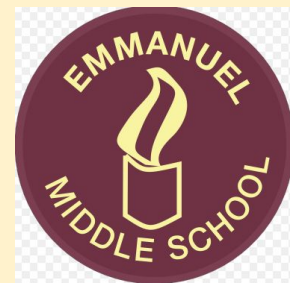
How does this relate to being successful in both arithmetic and reasoning papers?

3

$$2 \times 45 =$$

☐

1 mark



12

$$50 \times 70 =$$

A large grid of 20 columns and 10 rows of small squares, outlined in red, intended for students to show their work for the multiplication problem.A rectangular box with a blue border, intended for the student to write the final answer to the multiplication problem.A small square box with a black border, intended for the teacher to mark the question.

1 mark



20	$\begin{array}{r} 785 \\ \times 23 \\ \hline \end{array}$	
Show your method	<div data-bbox="1033 740 1304 853" style="border: 2px solid blue; height: 100px; width: 140px; margin: 20px auto;"></div>	<div data-bbox="1387 737 1466 816" style="border: 1px solid black; width: 40px; height: 70px; margin: 20px auto;"></div> <div data-bbox="1371 832 1479 863">2 marks</div>

24

$$\frac{1}{2} + \frac{1}{5} =$$

☐

1 mark



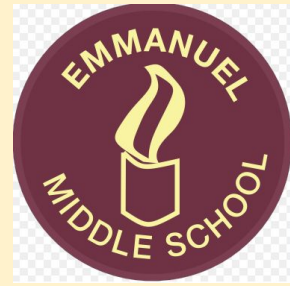


6

$$5 \times 4 \times 10 =$$

1 mark

Information about Year 6 SATs: Maths



Papers two and three are reasoning tests. Your child will need to apply their mathematical knowledge to solve problems. This could mean buying things in a shop, adapting recipes for different numbers or calculating area and perimeter for tiling a floor. These test papers cover a broader area of maths, including geometry and statistics, as well as number knowledge and arithmetic.

Single-Step problems



Here are the temperatures in four cities at midnight and at midday.

City	Temperature	
	At midnight	At midday
Paris	-4°C	-2°C
Oslo	-13°C	-7°C
Rome	3°C	10°C
Warsaw	-6°C	2°C

At **midnight**, how many degrees colder was Paris than Rome?

degrees

Single-Step problems



The cheese costs £1.35

Amina pays with a £2 coin.

How much change should Amina get?

1 mark

Single-Step problems



Q1

A cuboid has side lengths of 4cm, 3cm and 4cm.

What is the volume of the cuboid?

cm³

1 mark

Single-Step problems



Q1

A car wheel has a radius of 62cm.

What is the diameter of the wheel?

 cm

1 mark

Single-Step worded problems



Q2

a

Round 7,594 to the nearest ten.

1 mark



How much **change** does he get from £5?

3

2 marks

Multi-Step worded problems



Wishy Washes car wash processes 92 cars per day.

They make £15 per car.

How much money will they have made in 4 days?



Multi-Step worded problems

An aeroplane is flying from Birmingham to New York.

The distance between these two cities is 5,400km

On the journey, the pilot announces, "We are 40% of the way through the flight."

How far has the aeroplane travelled?



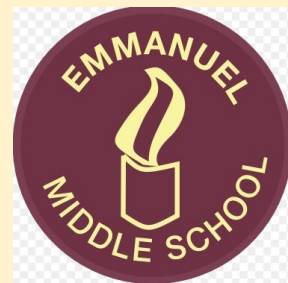
Multi-Step worded problems

Gracie buys 2 adult tickets and 2 child tickets for the theme park.

Adult tickets cost £51 each. Children's tickets cost £36 each.

What was the mean cost of the tickets?

Problems involving measures



13

A box contains 2.6 kg of washing powder.



Jack uses 65 grams of powder for each wash.

He uses all the powder.

How many washes did Jack do?

Show
your
method

2 marks



Problems involving measures

Q2

Pasta has 250g of carbohydrate per kilogram.

There are 200g of pasta in each small packet.

How much carbohydrate is in each small packet?

g

1 mark

Problems involving measures

A stack of 40 identical boxes is 240cm tall.

Mia takes four boxes off the top.

How tall is the stack now?



2 marks



Problems that involve drawing

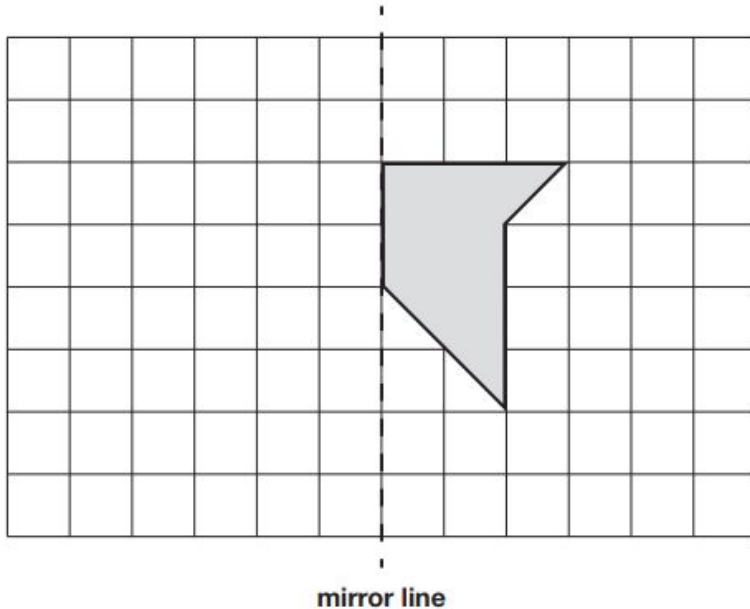


1

Here is a shape on a grid.

Complete the design so that it is symmetrical about the mirror line.

Use a ruler.



1 mark

Problems that involve drawing



On the line below, mark the point that is 6.7 centimetres from A.



1 mark

Problems that involve drawing



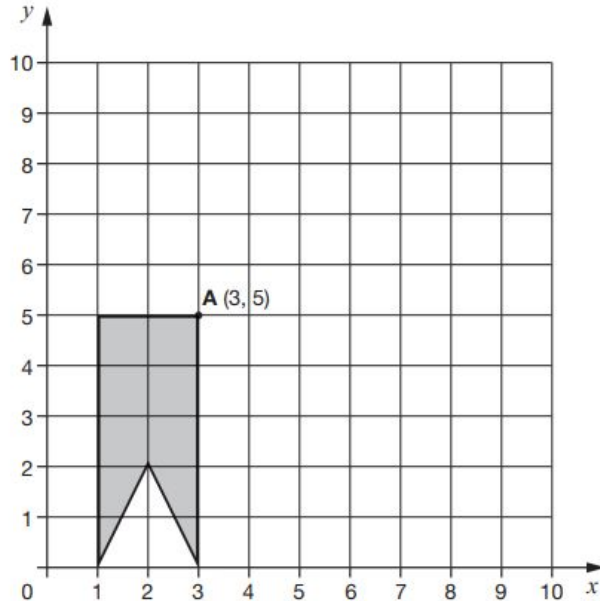
12

Here is a shape on a grid.

The shape is translated so that point **A** moves to (7, 8).

Draw the shape in its new position.

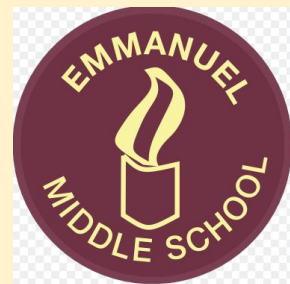
Use a ruler.



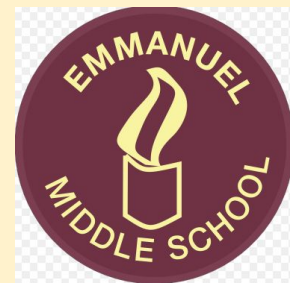
1 mark

Problems that involve drawing

Draw an angle that is exactly 140° .



Sequence Problems



1

The numbers in this sequence increase by the same amount each time.

Write the missing numbers.

42

49

63

2 marks



Sequence Problems

Q3

The numbers in this sequence increase by the same amount each time.



Write in the missing numbers.

1

$1\frac{3}{8}$

$1\frac{3}{4}$

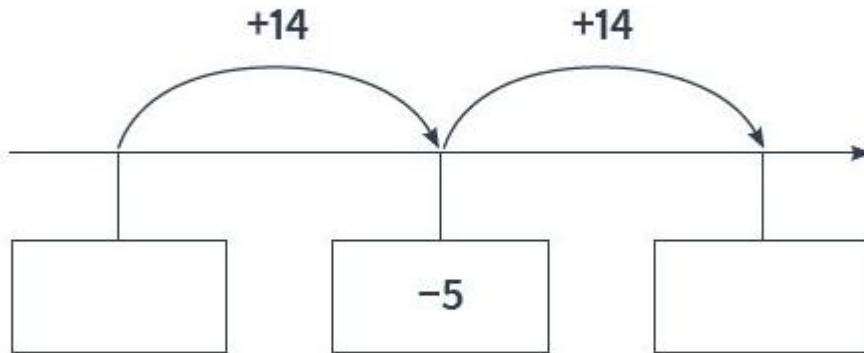
1 mark

Sequence Problems



Q3

Here is part of a number line.



Write the missing numbers in the boxes.

2 marks

Ordering Questions



14

$$\frac{6}{5}$$

$$\frac{3}{5}$$

$$\frac{3}{4}$$

Write these fractions in order, starting with the **smallest**.

smallest

Ordering Questions



Q1

This table shows the distances that four children throw a cricket ball.



	Name	Distance thrown
A	Aaliyah	9.6m
B	Ben	9.23m
C	Chloe	9.09m
D	Dale	9.32m

Write the letters A to D in order, from shortest to longest distance thrown.

Shortest

Longest

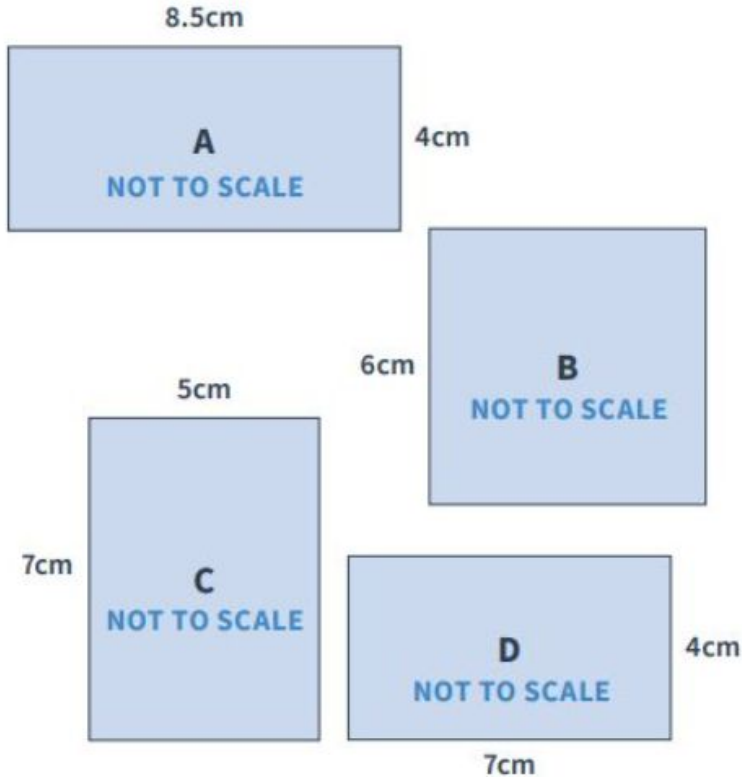
1 mark

Ordering Questions



Q1

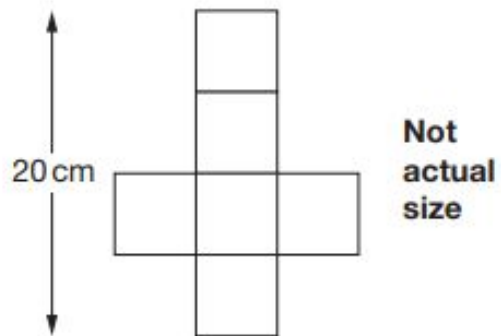
Write the letters A to D so that these shapes are in order from smallest to largest area.



Non Standard Problems



This is the net of a cube.



What is the **volume** of the cube?

cm³

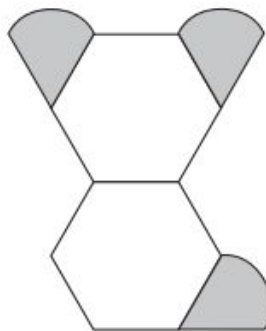
1 mark

Non Standard Problems

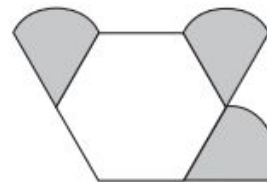


Amina is making designs with two different shapes.

She gives each shape a value.

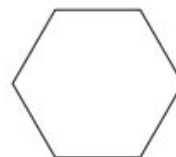


Total value is 147



Total value is 111

Calculate the value of each shape.



=

1 mark



=

1 mark

Non Standard Problems



(Not to scale)

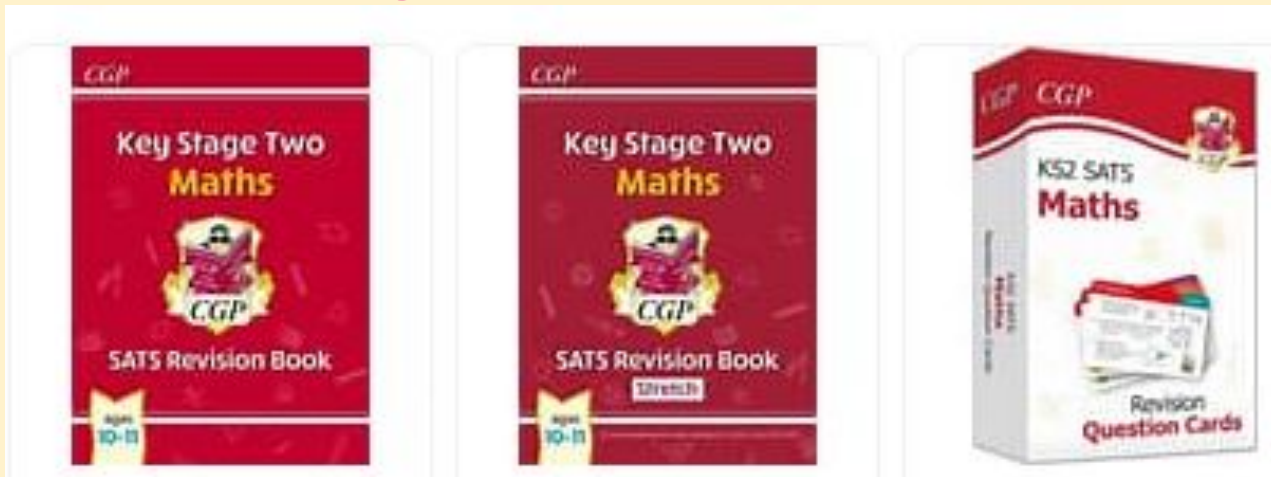
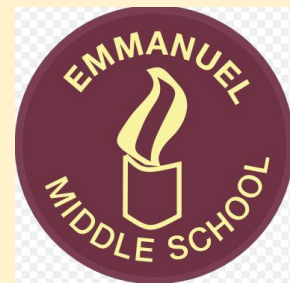


Here are two rectangles.

The area of the green rectangle is 6 times the area of the blue rectangle.

Work out the Length of the green rectangle.

CGP Revision guides and useful website links

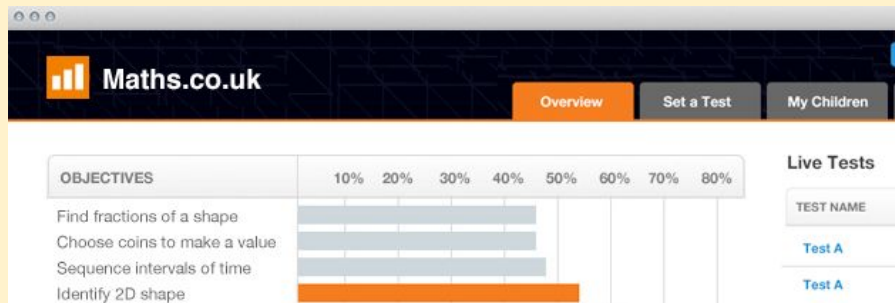


<http://www.amathsdictionaryforkids.com/qr/q.html>

Online dictionary for children which explains common mathematical terms in simple language (including visual representations)

Hit the button times tables

<https://www.topmarks.co.uk/maths-games/hit-the-button>





Maths revision websites and apps to support your child

1. Smartick

Smartick consists of daily 15-minute sessions in which children can master the maths foundations, develop critical thinking and problem-solving skills. Its curriculum includes arithmetic, word problems, logic and coding, and is suitable for children who are either behind, have learning gaps to fill or simply want to excel beyond the classroom.

It also uses artificial intelligence to identify the skills and learning pace of each student, meaning it can adapt to their needs in real-time. The app helps in building a solid foundation of Key Stage 2 maths skills.

2. Komodo Math

Designed by teachers for families, Komodo builds a solid foundation in maths for children aged 5 to 11. A qualified maths teacher will personalise a learning plan for your child. A maths teacher sets up each user's baseline in the app and parents define the rewards. Children then engage in little-and-often practice to raise their maths knowledge and skill.

Komodo's focus is on mastering arithmetic and mental maths because this is the key platform for future success in mathematics. It takes the learner through counting, addition, subtraction, multiplication – including times tables, division, fractions, decimals, percentages and many more essential topics. Komodo is aligned with the National Curriculum and designed to complement school maths. The app helps in building a solid foundation of Key Stage 2 maths skills.

Devices: Android, iOS



Maths revision websites and apps to support your child

3. IXL Math

IXL's dynamic maths practice skills offer comprehensive coverage of the England key stage 2 curriculum. The app covers number and place value, addition and subtraction, multiplication and division, fractions, measurement and shapes.

Kids also get detailed feedback if they answer incorrectly, along with the chance to continue with the same skill to try to apply what they've learned. This can greatly improve their comprehension of difficult concepts. Parents can view kids' scores for various skill exercises, the questions they answered, and other specific information to differentiate instruction for their child.

Devices: Android, iOS

4. DoodleMaths

DoodleMaths is a maths programme that supports maths learning in homes and schools. It identifies children's weaker areas in learning and adapts a programme to that child. Designed and optimised for mobile and tablet, DoodleMaths is perfect for learning on-the-go and as a support for homework. It is used both to raise attainment with lower attaining pupils and extend the more able, regardless of special educational needs or language barriers. Its in-built intelligence identifies the strengths and weaknesses unique to each child and constructs a work program specific to their needs. DoodleMaths is the UK's best-selling Maths app. It covers the curricula of KS2 Maths and KS3 Maths.

Devices: Android, iOS

5. EdPlace

EdPlace provides you access to 1000s of interactive worksheets, assessments and revision materials for Key stage 2 Maths. All the resources are mapped to National Curriculum helping each child succeed in KS2 Maths from year 3 to year 6. With an EdPlace account, you'll be able to track and measure progress, helping each child achieve their best. They build confidence and attainment by personalising each child's learning at a level that suits them. They cover all the topics such as 2D and 3D shapes, addition, subtraction, counting, division, fractions, measurement, algebra and so on.

Devices: Android, iOS



6. Squeebles Times Tables 2

Squeebles Times Table 2 is a beautifully designed app, which helps students practice their times tables in the most fun and interactive way possible. Children learn whilst helping Whizz rescue the Squeebles from the clutches of the nasty maths monster. There are seven different game modes for children to practice their times tables on with a number of characters and rewards available to encourage children to improve their scores. Teachers and parents can also monitor a child's progress and can view a list of tables children have previously got wrong to assist with ongoing learning. The app helps the child in learning Tables 1 – 12 and answer questions across all the basic tables sets from the ones to the twelves. In Year Three, children are encouraged to learn their times tables as this will help when multiplying or dividing numbers. This app can be used with KS2 students.

Devices: Android, iOS