Help Your Child With

CfE Level 2 Mathematics

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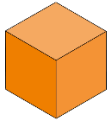
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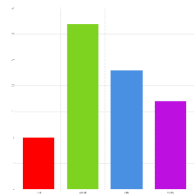M   V

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Introduction

This booklet has been designed so that you can use it with your child to help them revise for practice their mathematics and numeracy skills at Curriculum for Excellence level 2.

The booklet is not an exhaustive list of the contents - this booklet does summarise the majority of key facts and methods which your child should be familiar.
Key skills developed by learner in mathematics are:
- Interpreting questions
- Communicating processes and solutions
- Justifying choice of strategies
- Linking concepts
- Using proper mathematical vocabulary
- Mental agility
- Algebraic reasoning
- Determining the reasonableness of solutions

How to use this booklet

You can use this booklet to test your child's understanding of concepts. Basically, all you have to do is read out the question on the left-hand column of the page and they should be able to give the correct response which is shown in the right-hand column.

Don't worry if you are unsure of the topic as it is useful for your child to be able to explain what their understanding is and to describe their preferred method. This helps them to get a better grasp of their knowledge.

Thank you in advance for your help and good luck!

<u>Topics</u>

Estimation and Rounding
Number and Number Processes
Multiples, factors and primes
Fractions, Decimal fractions and percentages
Money
Time
Measurement
Patterns and Relationships
Expressions and Equations
Properties of 2D and 3D shapes
Angle
Symmetry
Data and Analysis
Probability and chance

Estimation and Rounding

Question	Answer
How do you round?	If the next digit is 5 or more round up.
Round 56 to nearest 10	60
Round 750 to nearest 100	800
Round 7892 to nearest 1000	8000
Round 1·72 to 1 decimal place	1·7
Estimate the answer to 23 x 57	Close to 20 x 60 = 1200

Number and Number Process

Question	Answer
What number is this? 4 567 145	four million, five hundred and sixty-seven thousand, one hundred and forty-five
What does the 4 stand for in 36 489	Four hundred
Which decimal is greater? 4·27 or 4·3	4·3
Express 4·3 in another way	4 ones and 3 tenths Or 43 tenths
Do this mentally. What is 468 + 10?	478
Estimate the answer to 23 x 57	Close to 20 x 60 = 1200
Practice multiplication mentally	

✖	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

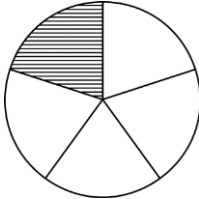| Question	Answer
When you multiply by 10 what happens to each digit?	Each digit moves 1 column to the left
When you divide by 100 what happens to each digit?	Each digit moves 2 columns to the right
What is 0·73 x 10?	0·73
What is 4·57 ÷ 100?	0·0457
What is 23 x 4	20 x 4 = 80 3 x 4 = 12 Add together to make 92
Try writing down this calculation. What is 43 ÷ 5?	8·6
What word do you use for the order of calculations?	**B**rackets, **O**perations, **D**ivide **M**ultiply, **A**dd, **S**ubtract
What is 5 + 3 x 4?	5 + 12 = 17
What are the numbers below zero called?	Negative numbers (integers)
What number is 3 below zero?	-3

Multiples, Factors and Primes

Question	Answer
What is a multiple?	A number that may be divided by another number without a remainder
What are the multiples of 4?	4, 8, 12,….
What is a factor?	A number that may be divides into another number without a remainder
What are the factors of 18	1, 2, 3, 6, 9, 18
What is a prime number?	A number with only 2 factors itself and 1
Is 7 a prime number?	Yes, because only 1 x 7 = 7

Fractions, Decimal Fractions and Percentages

Question	Answer
How do you find half of a number?	Divide the number by 2
How do you find a third of a number?	Divide the number by 3
How do you find two-thirds of a number?	Divide the number by 3 then multiply your answer by 2
What is a simpler fraction than $\frac{3}{6}$?	$\frac{1}{2}$
What is fraction is greater $\frac{1}{2}$ or $\frac{2}{3}$?	$\frac{1}{2} = \frac{3}{6}$ and $\frac{2}{3} = \frac{4}{6}$ so $\frac{2}{3}$ is greater
What fraction is the same as 50%?	$\frac{1}{2}$
What fraction is the same as 25%?	$\frac{1}{4}$
What fraction is the same as 10%?	$\frac{1}{10}$
What decimal is the same as 50%?	0·5

Question	Answer
What decimal is the same as 25%?	0·25
What decimal is the same as 10%?	0·1
What is 50% of £12?	$\frac{1}{2}$ of £12 = £6
What is 10% of £12?	£12 ÷ 10 = £1·20
How could you work out 15%?	Work out 10% then 5% and add them together
What fraction is the same as 0·5%?	$\frac{1}{2}$
What fraction is the same as 0·25%?	$\frac{1}{4}$
What fraction is the same as 0·1%?	$\frac{1}{10}$
If you have a cake and eat $\frac{1}{4}$, what fraction is left?	$1 - \frac{1}{4} = \frac{3}{4}$
In a sale, you save 15%. What percentage do you pay?	100% - 15% = 85%

Question	Answer
What percentage of the pie chart is coloured?	$\dfrac{1}{5}$

Money

Question	Answer
What coins do we use in Britain?	1p, 2p, 5p, 10p, 20p, 50p, £1 and £2 coins
What coins would you use to make 77p	50p, 20p, 5p and 2p
You can buy 100g of cereal for £2.50 or 200g for £4. Which is best buy?	200g box
What is £1 shared between 4 people?	25p
What is £1·80 plus 34p	£2·14
A banana cost 34p how much would 3 bananas cost?	104p or £1·04
John bought a computer game for £40 and traded it in for £14. How much of a loss did he make?	40 – 14 =£26

Question	Answer
If you make cups for 25p and want to sell them to make a 15p profit. How much should you sell them for?	25 + 15 = 40p
What is the machine called which you use to take out cash?	ATM (automatic teller machine)
What card do you use if you buy things and pay later?	Credit card

Time

Question	Answer
What type of clock has hands which move?	Analogue
How do you change 24 hour time to 12 hour time?	If the time is less than 12 it is am. If the time is more than 12, take away 12 and add pm
What is 5 am in 24 hour time?	05 00
What is 5pm in 24 hour time?	17 00
What time is noon?	12 pm or 12 00
What time is 00 00	12am or midnight

Question	Answer
How many minutes is $\frac{1}{4}$ of an hour?	15 minutes
How many days are in each month?	30days – April, June, September, November 28/29 days – February 31 days – all others
How many hours/minutes is it between 9:30am and 11:00am?	1 hour and 30 minutes
What time is it 12 minutes after 8:50am	9:02am
What time units would you use for a race?	Seconds
How long is a decade?	10 years
How long is century?	100 years
A car can travel 200 miles in 4 hours. How far did it travel in 1 hour?	200 ÷ 4 = 50 miles
A train can travel at 70 miles per hour. How far can it travel in 3 hours?	70 x 3 = 210 miles

Measurement

Question	Answer
What units would you use to measure distance?	Millimetres, centimetres, metres, kilometres
What units would you use to measure volume of liquids?	Millilitres, litres
What units would you use to measure weight?	Grams, kilogrammes, tonnes
What is the perimeter of a shape?	The distance around the outside
What is the area of a shape?	The space in the inside of a flat shape
How many millimetres are make 1 centimetre?	10 millimetre = 1 centimetre
Change 24mm into centimetres	24 ÷10 = 2·4 cm
How many grams make 1 kilogram?	1 kilogram = 1000 grams
How do you convert kilograms into grams?	Multiply by 1000
Change 3·4 kilograms into grams	3·4 x1000 = 3400 grams

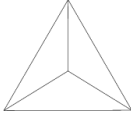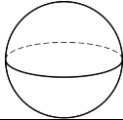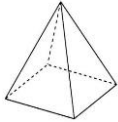| Question	Answer
How many millilitres make a litre?	1000 ml = 1 litre
How do you convert litres into millilitres?	Multiply by 1000
Change 800 ml into litres.	800 ÷ 1000 = 0·8 litres
Which is smaller? 7 millimetres or 0.6 centimetres?	0.6 centimetres
How do you calculate the area of a rectangle?	Multiply the length by the breadth
How do you calculate the area of a triangle?	Multiply the length by the breadth then divide by 2
What units would you use for area?	Square centimetres, cm^2, or square metres - m^2
How do you calculate the volume of a cuboid?	Multiply the length by the breadth by the height
What units would you use for volume?	cubic centimetres, cm^3

Patterns and Relationships
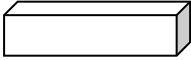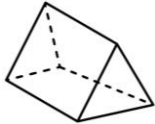
Question	Answer
What is the rule for this sequence 3, 5, 7, …?	Add on 2
What is the next number in the sequence 3, 5, 7, …?	9
What is the rule for this sequence 2, 5, 8 …?	Add on 3
What is the next number in the sequence 2, 5, 8 …?	11
What is a square number?	Multiplying a number by itself makes a square number
What is the sequence of numbers 1, 3, 6, 10, 15, … known as?	Triangular numbers

Expressions and Equations

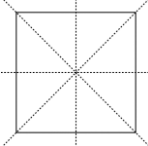| Question	Answer
What number replaces the letter x? 3 + x = 8	5
What number replaces the letter x? x + 2 = 9	7
What number replaces the letter b? 3 × b = 12	4
What number replaces the letter e? e × 4 = 8	2
If n = 3, what is n + 4?	3 + 4 = 7
If n = 3, what is n × 4?	3 × 4 = 12
What number replaces the letter n? $\frac{n}{4} = 3$	12

Properties of 2D Shapes and 3D Objects

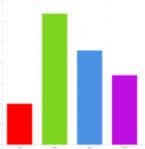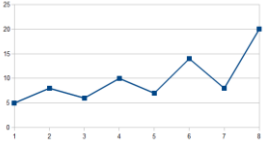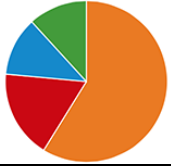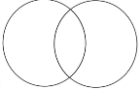| Question	Answer
What do you call a triangle with 3 sides the same length?	Equilateral
What do you call a triangle with 2 sides the same length?	Isosceles
What do you call a triangle with all the sides the different lengths?	Scalene
What is a quadrilateral?	A shape with 4 sides
Name different quadrilaterals	Square, rectangle, parallelogram, rhombus, trapezium, kite, delta
What is the name of the line which passes through the centre of the circle?	Diameter
What is the name of the line which is the distance from the centre of a circle to the outside?	Radius
What is the name of the perimeter of a circle?	Circumference
How does the radius compare to the diameter?	The radius is half the length of the diameter

Question	Answer
What is the name of this solid?	Cube
What is the name of this solid?	Cuboid
What is the name of this solid?	Cylinder
What is the name of this solid?	Triangular prism
What is the name of this solid?	Tetrahedron
What is the name of this solid?	Sphere
What is the name of this solid?	Hemisphere
What is the name of this solid?	Square based pyramid

Angle, Symmetry and Transformation

Question	Answer
What do you call 2 straight lines which never meet?	Parallel lines
How many degrees are in a right angle?	90°
How many degrees are in a straight angle?	180°
What is the type of angle which is less than 90°?	Acute
What is the type of the angle which is between 90° and 180°?	Obtuse
What is the type of the angle which is between 180° and 360°?	Reflex
What mathematical instrument do you use to measure angles?	Protractor
What size are the angles in an equilateral triangle?	60°
How many degrees are there in a $\frac{1}{4}$ turn?	90°
What is the bearing of East?	090°

Question	Answer
How do you would out the real-size of an object if the scale is 1:200	Multiply the image by 200
On a map the scale is 1:200. If the length of an object is 3cm on the map, how long is it in real-life	3 x 200 = 600 cm
On a Cartesian grid what is the name of the horizontal axis?	x-axis
On a Cartesian grid what is the name of the vertical axis?	y-axis
What is the point where the axis met named?	Origin
In a coordinate point which number is written first?	x-coordinate
If one side of a 2D shape fits exactly over the other half what is this called?	Symmetry
What is the name of the mirror line?	Line of symmetry or axis of reflection
How many lines of symmetry does as square have?	 4
Which capital letters have 1 line of symmetry?	A B C D E M T U V W (H, I, O have 2 lines of symmetry)

Data and Analysis

Question	Answer
What is word do you use to mean the number of times something happens?	Frequency
What type of chart uses symbols or pictures to show the frequency?	Pictograph
What type of chart is this?	Bar chart
What type of chart is this?	Line Graph
What type of chart is this?	Pie chart
How do you show 5 on a tally chart	Make 4 strokes and cross through.
What type of chart is this?	Venn Diagram

Probability and Chance

Question	Answer
What does "impossible" mean?	Something will definitely not happen
What does "certain" mean?	Something will definitely happen
What is the probability you will watch TV tonight?	"Likely"
What is the probability you will win the lottery?	"Unlikely"
What is the probability you will throw a six on a dice?	$\frac{1}{6}$
What is the probability you will get a "head" when tossing a coin?	$\frac{1}{2}$