LCA

SAMPLE!

Mathematics for Living
STUDENT WORKSHEETS

EDUCOOT

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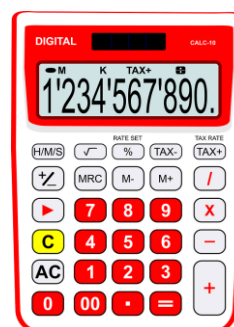
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MAPPING OF LEARNING OUTCOMES

MATHS REVISION

1. Work out the following:

```
  2 5 9        1 1 7        9 5 4        4 8 9
+ 3 6 5      + 5 0 8      +   7 2      + 1 7 1
_____    _____    _____    _____
```

Example:
```
  2 3 7
+ 5 9 6
_____
  8 3 3
```

2. Fill in the table: (You can do your working out below the table)

IN	32	64	55	74	33
OUT					
Rule: Subtract 15					

3. Do these, without using a calculator:

977 + 755 = _____

496 + 925 = _____

767 + 322 = _____

606 + 372 = _____

500 + 525 = _____

790 + 923 = _____

686 + 611 = _____

730 + 244 = _____

4. Use mental calculations to solve these:

a)   6900 + _____ = 10000

b)   _____ + 2700 = 10000

c)   500 + _____ = 8000

d)   _____ + 3600 = 5000

e)   700 + _____ = 1000

f)   _____ + 3200 = 5000

g)   _____ + 6800 = 10000

h)   8400 + _____ = 9000

i)   8900 + _____ = 10000

j)   _____ + 2300 = 8000

k)   _____ + 5400 = 10000

l)   _____ + 1500 = 7000

m)   7900 + _____ = 9000

n)   2100 + _____ = 8000

o)   1300 + _____ = 9000

p)   _____ + 6300 = 9000
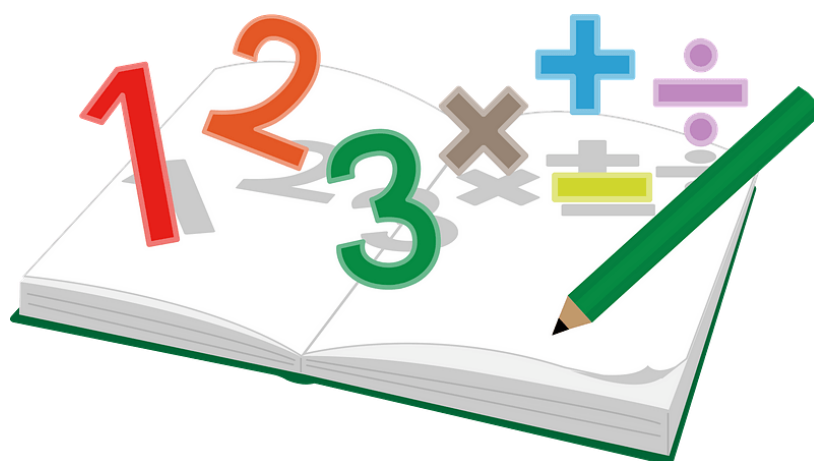
D. COUNTING – FACTORS

1. Read and discuss this:

> Factors are numbers we can multiply together to get another number.
>
> Example: 2 x 3 = 6, so the numbers 2 and 3 are factors.
>
> Factors of 12 are 1, 2, 3, 4, 6 and 12 ...
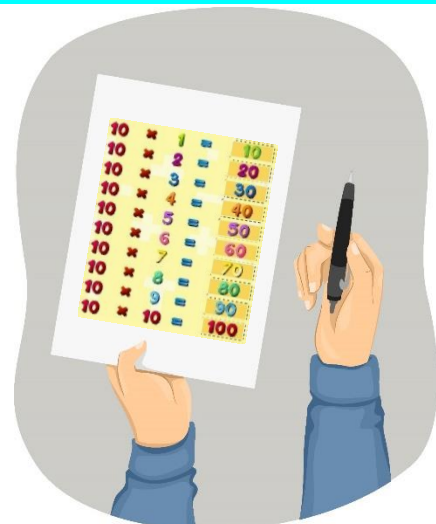>
> ... because 2 × 6 = 12, or 4 × 3 = 12, or 1 × 12 = 12.

1. Write the (whole number) factors for each of the numbers.

Number	Factors
22	
50	
24	
39	
100	
21	
13	
88	

The factors of 10 are 1, 2, 5, 10.

2. Read this:

> **What is a common factor?**
>
> *We find these when we work out the factors of two numbers:*
>
> *Example: Factors of 12 and 30*
>
> *Factors of 12 are **1, 2, 3, 4, 6** and **12***
>
> *Factors of 30 are **1, 2, 3, 5, 6, 10, 15** and **30***
>
> *Then the common factors are those that are found in both lists:*
>
> ***1, 2, 3** and **6** appear in both lists so these are the common factors of 12 and 30.*

3. Find the common factors of 15, 30 and 105

_____

_____

_____

_____

_____

_____

_____

_____

The common factors or of 12 and 18 are 1, 2, 3 and 6.

4. Read this:

*The **highest common factor (HCF)** is a number that divides exactly into two or more numbers.*

Example:

Common Factors of 12 and 30 are 1, 2, 3 and 6, and so the Highest Common Factor is 6.

5. Complete the table:

Two Numbers	Factors	Common Factors	HCF
9 and 12			
6 and 18			

6. Write down the highest common factor of 18 and 24.

_____
_____
_____
_____

7. What is the greatest common factor of 6 and 15?

☐ 2
☐ 3
☐ 6
☐ 15

The common factors of 12 and 18 are 1, 2, 3 and 6. The largest common factor is 6, so this is the H.C.F. of 12 and 18.

Look up short video clips on YouTube on Highest Common Factors.

17. A survey was conducted for cinema-goers to rate a movie from 1 to 5, with 5 being excellent and 1 being poor.
Here is a list of their responses.

4 2 2 2 1 3 1 2 2 3 4 1 2 3 2 2 1 1 3 1 3 5 1 2 3 4 2 1

a) Use the list above to complete the TALLY table:

Rating	Tally	Total
1		
2		
3		
4		
5		

b) Which rating was used most often?
_____
c) Which rating was used the least?
_____
d) Overall, was the movie popular or not? Explain.
_____
_____
_____
_____

J. ESTIMATION

1. Estimate the sum by rounding each number to the nearest hundreds.

a) There are 891 fruit trees currently on the farm. Farm workers will plant 394 more fruit trees today. How many fruit trees will be on the farm when the workers are finished?

_____

b) Ryan scored 554 points on the video game and Helen scored 387 points. How many points did they score together? _____
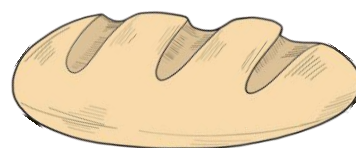
c) Rosie emptied two money jars. The first one had 571c and the second one had 297c. How many cents were in both jars? _____

d) Barry drank 894ml of water and Jenny drank 722ml of water. How much water did they drink together?

_____

e) Amy has €216 and James has €689. How much money do they have together? _____
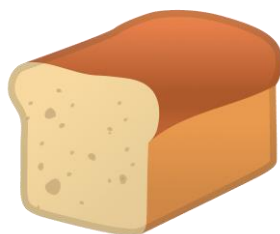
f) Bread A weighs 523g and Bread B weighs 672g. What is the weight of the two breads together?

_____

Watch a short video on YouTube on estimating!

2. Describe each of these shapes and give a real-life example of where it could be found.

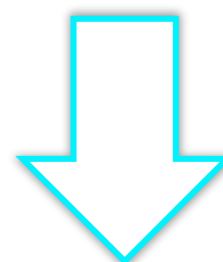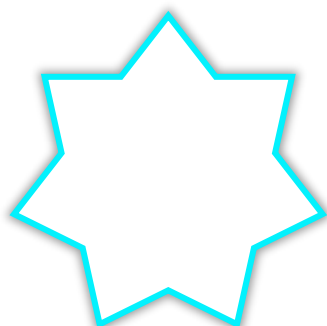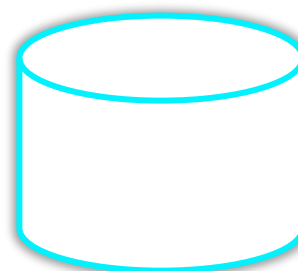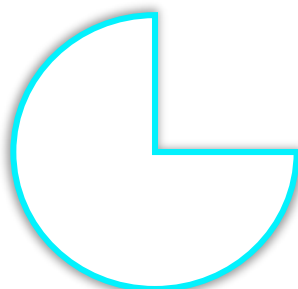| Shape name	Description	Real-life example	Where we could find it
circle			
square			
triangle			
rectangle			
pentagon			
hexagon			
cube			
sphere			
cylinder			
cone			
cuboid			

16. Read:

Polygons are 2-dimensional shapes. They are made of straight lines, and the shape is "closed" (all the lines connect).

17. Tick the polygons.
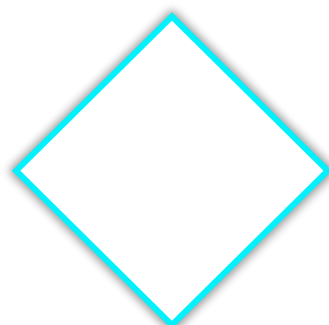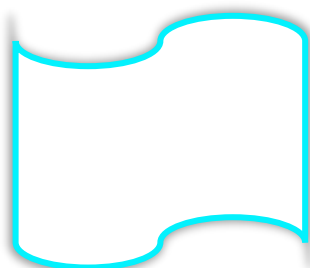
6. Answer the questions.

a) The perimeter of a rectangular pool is 56 metres. If the length of the pool is 16 metres, what is its width?

_____

_____

b) The area of a rectangular fence is 500 square metres. If the width of the fence is 20 metres, then what is its length?

_____

_____

c) The length of a rectangular field is 200 m. If its perimeter is 700 m, what is its breath?

_____

_____

a) The sides of a triangular park are 14 m, 17 m and 20 m. What is its perimeter?
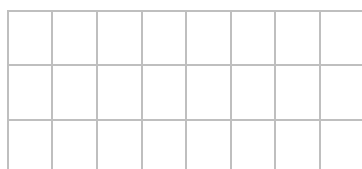
_____

_____

8. Calculate the areas of these shapes, using the correct formula and giving the answer in the correct form: (Show your working but you can also use the calculator.)

a. The side length of a square is 9 km. Find its area.

_____
_____
_____

Formulae:

Area of a square:

L x L

b. Find the area of this rectangle.

_____
_____
_____

Area of a rectangle:

L x B

c. Calculate the area of the circle.

r = 9 m

_____
_____
_____

Area of a circle:

πr^2
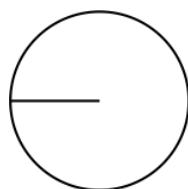
d. Calculate the area of the triangle.

6 cm

8 cm

_____
_____
_____

Area of a triangle:

½ base x height

e. Calculate the area of the circle.

r = 6 mm

_____
_____
_____

I. Find these 2D and 3D shapes in your environment. Do the calculations as listed. Work in groups.

Shape: Circle

Your object: _____

Measurements:

_____
_____
_____
_____

Calculate: the **circumference** and the **area**. Write the formulae!

Your estimated answers:

_____
_____
_____
_____

Answer:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Were your estimations close? ☐ YES   ☐ NO

27. Read:

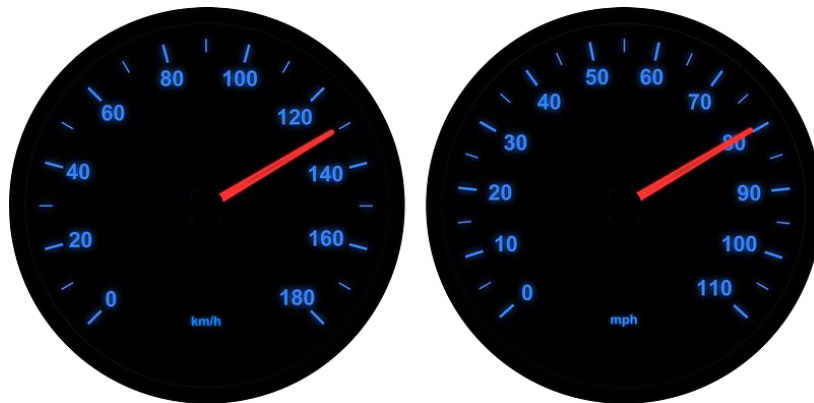Miles are used in the Imperial System of measurement. Kilometres are used in the Metric System.

To convert miles to kilometres:
1 mile = 1.609344 kilometres.
1 mile = 1.6 kilometres (rounded)

Example:
How many kilometres are there in 5 miles?
Miles to km = 5 × 1.6
= 8 km
Therefore, **5 miles is equal to 8 km.**

28. On the weekend, Peter travelled 10 miles on his bicycle. Find the distance travelled in

_____
_____
_____

C. CONVERTING TIME

1. Read: Time is measured in milliseconds, seconds, minutes, hours, days, weeks, months, years, decades, centuries and millenniums. Often we need to convert different times. For example: 5 minutes is 300 seconds or 14 days is 2 weeks.

Time Conversions
- *1,000 milliseconds = 1 second*
- *60 seconds = 1 minute*
- *60 minutes = 1 hour*
- *24 hours = 1 day*
- *7 days = 1 week*
- *4 weeks = 1 month*
- *12 months = 1 year*
- *52 weeks = 1 year*
- *365 days = 1 year*
- *10 years = 1 decade*
- *10 decades = 1 century*
- *100 years = 1 century*
- *1,000 years = 1 millennium*

2. Answer the questions.

a) Sean has to take his medicine (one tablet) every two hours. How many tablets will he need for 3 days? _____
b) Colette is getting married in three weeks' time. How many days is this? _____
c) You ran in a track race on Tuesday. You finished in 420 seconds. How many minutes is this? _____

2. Look at the TV line-up:

12 hr	TV Programme
5pm	Science Show
5.30pm	Better Baking
6pm	The News
7pm	Topic Discussion
7.20pm	Home Decor
7.55pm	Buying Houses
8.25pm	The News
8.50pm	Family Health
9.30pm	Sport of the Day
10pm	The News
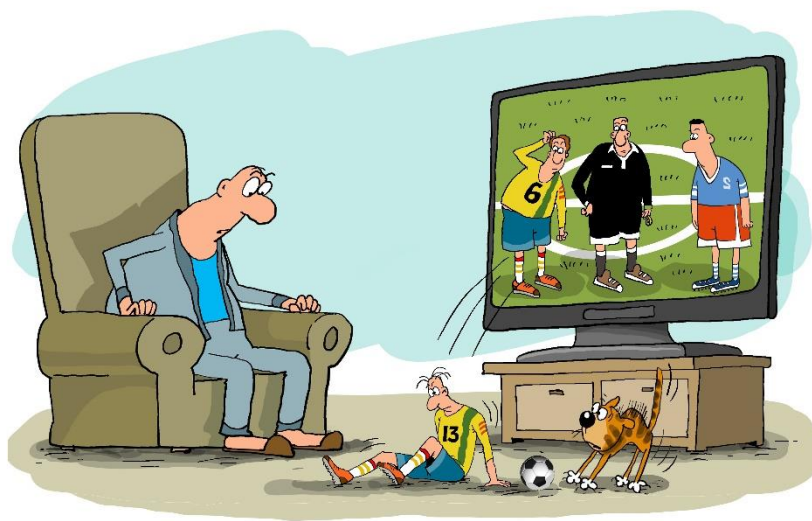
3. Fill in the table below. Write the times in 24-hour format.
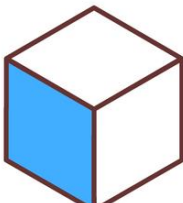
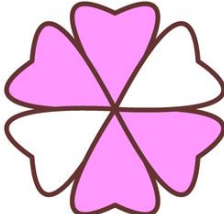| Name of Programme	Start Time	Finish Time	Length of Programme
Science Show			
Better Baking			
The News			
Topic Discussion			
Home Decor			
Buying Houses			
The News			
Family Health			
Sport of the Day			
The News		–	–

Look at a real TV line-up online and plan an evening of popcorn and telly!
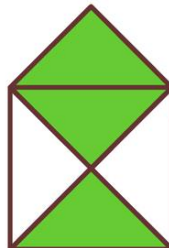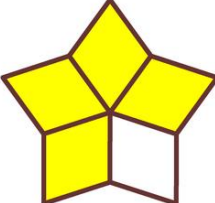
I. Circle the correct answers.
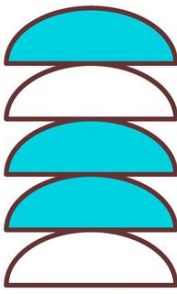
	1.2
	39%
	$\dfrac{3}{9}$

	42%
	0.46
	$\dfrac{2}{3}$

	$\dfrac{3}{2}$
	50%
	0.60

	0.65
	$\dfrac{3}{5}$
	35%

	80%
	$\dfrac{1}{5}$
	0.45

	$\dfrac{2}{5}$
	0.52
	60%

7. Problem-solve to find the answers to the questions:
Dave and Sinead have 2 children. Dave earns €400 per week and Sinead earns €230 per week.

Each week they pay out for the following:

- Food €200
- Travel €80
- Rent €120
- Electric & Gas €80
- Clothes €60
- Insurance €20
- Telephone/Mobiles €60
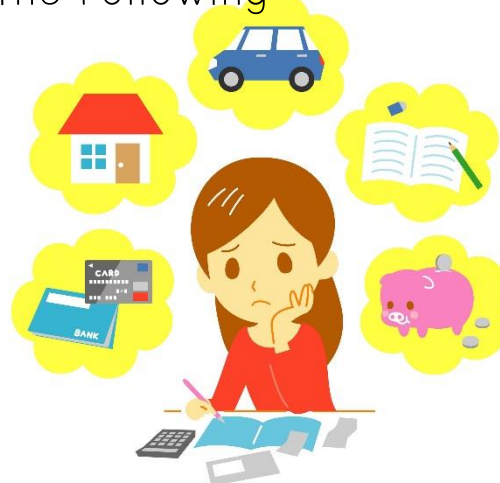
Draw up a weekly budget (Income and Expenditure) for Dave and Sinead.

Income		Expenditure	
Total income:		Total expenditure	

MAPPING OF LEARNING OUTCOMES

Unit 1: Approximation, Estimation, the Calculator and Strategies of Checking

1. Solve problems of rounding to the nearest whole number, place of decimal, pound, euro, cent, metre, kilogram etc. **Pages 52 to 57 (place value), Pages 58 to 63 (rounding numbers), Pages 64 to 69 (estimation), Pages 70 to 72 (significant figures)**

2. Apply methods of counting and tallying in practical situations **Pages 20 to 25 (counting – number systems), Page 26 (counting – prime numbers), Pages 27 to 29 (integers), Pages 30 to 32 (counting – factors), Pages 33 to 34 (counting – multiples), Pages 35 to 40 (counting – revision), Pages 41 to 51 (tallying)**

3. Operate a calculator to solve problems involving +, –, x, ÷, %, π, $\sqrt{}$, x2, powers and brackets **Pages 73 to 82 (using a calculator), throughout the course**

4. Use appropriate steps in exercises using extended operations. **Pages 47 to 51 (carrying out surveys, findings), Pages 60 to 61 (rounding – word problems), Pages 66 to 69 (rounding – word problems), Pages 75 and 80 (calculator work – word problems), Pages 108 to 110 (following steps to work out perimeters), Page 112 (circumference word problems), Pages 120 to 122 (area – everyday problems), Page 129 (volume word problems), Pages 132 and 133 (volume word problems), Pages 157 to 159 (measurement word problems), Pages 161 and 162 (imperial/metric word problems), Pages 171 to 177 (measurement activities), Pages 192 to 193 (time word problems), Page 197 (following steps to fill in**

calendar), Pages 201 to 203 (time problems), Page 235 and 250 (fractions word problems), Pages 256 to 259 (profit/loss word problems), Pages 267 to 274 (comparing prices), Page 279 (budget), Page 281 (meal planner), Page 301 (invoice creation), Pages 302 to 308 (home improvements)

Unit 2: Measurement – Linear – Area – Volume – Capacity – Weight

1. Identify and measure metric units of length, area, volume, capacity and weight and solve associated problems including conversion to imperial measure **Pages 113 to 122 (area of 2D shapes), Pages 142 to 147 (area, volume, surface area of shapes in environment), Pages 148 to 170 (measurement skills including length, capacity), Page 160 (measurement conversions), Pages 161 to 170 (imperial/metric measurement), Pages 171 to 177 (measurement activities)**

2. Identify and calculate the lengths of perimeters of various shapes **Pages 105 to 110 (perimeter), Pages 111 to 112 (circumference)**

3. Identify common shapes to include quadrilaterals, triangles, circles, regular polygons and combinations of shapes and calculate area, using appropriate formulae **Pages 85 to 86 (shapes around us), Pages 87 to 95 (shapes and their names, tangrams), Pages 96 to 104 (properties of shapes, angles, quadrilaterals, polygons), Pages 113 to 122 (area of 2D shapes), Pages 137 to 147 (shapes in everyday life)**

4. Distinguish between common solids – cube, prism, cylinder, pyramid, sphere and hemisphere and identify and use appropriate formulae to calculate volumes **Pages 123 to 126 (3D shapes), Pages 127 to 133 (volume of 3D shapes), Pages 134 to 136 (volume and surface area)**

5. Estimate the weight of common products and use equipment (manual and electronic) to weigh and hence solve problems which involve addition, subtraction, multiplication and division of weight. **Page 149 (estimating measurements including weight), Page 155 (reading scales), Page 156 (weight activities), Page 172 (estimating weight, measuring weight), Page 174 (identifying objects with given measurements, including weight)**

Unit 3: Measuring Time

1. Differentiate between twelve hour and twenty-four hour time systems and convert between them **Pages 181 to 185 (24-hour clock / 12-hour clock)**

2. Convert minutes to decimal of hour and seconds to decimal of minute format and vice versa **Pages 186 to 188 (converting time to decimals)**

3. Interpret information from calendars, timetables, schedules, rosters, timesheets, cooker timers, etc. and calculate intervals using twelve or twenty-four hour systems **Pages 194 to 206 (time – information, e.g. timetables, opening times), Pages 212 to 215 (time word problems)**

4. Convert between days, weeks, months and years **Page 180 (time facts), Pages 189 to 193 (converting time)**

5. Compute or compare the time in different time zones and apply to real situations. **Pages 207 to 211 (world time zones)**

Unit 4: Fractions, Decimals, Percentages and Ratio

1. Manipulate simple fractions through addition, subtraction, multiplication and division and convert fractions to decimals and vice versa **Pages 218 to 226 (fractions), Pages 227 to 235 (addition, subtraction, multiplication and division of fractions), Pages 246 to 255 (equivalence of common simple fractions, decimals, and percentages)**

2. Select appropriate number of places of decimal and round correctly **Pages 236 to 245 (decimal numbers)**

3. Interpret and solve problems of ratio and direct and indirect proportion involving common occurrences **Pages 260 to 264 (ratios)**

4. Interpret and solve problems involving % such as those involved in selling price, cost price and profit. **Pages 256 to 259 (profit and loss)**

Unit 5: House and Home Mathematics

1. Compare prices for similar goods with differing quantities and identify the better value **Pages 267 to 274 (comparing prices)**

2. Compile a simple household budget for a given period of time to include a minimum of six cost elements and analyse figures with a view to adjusting a budget relative to income available **Pages 275 to 281 (budgets)**

3. Convert annual salary or wages to monthly and weekly and vice versa **Pages 282 to 290 (wages)**

4. Read household meters and make calculations on usage over fixed periods **Page 294 (reading a meter activity)**

5. Perform calculations related to household bills and understand the layout and terms used in such bills (gas, electric, telephone, etc.) **Pages 291 to 301 (household bills)**

6. Apply the skills of mathematics to household repairs, measurement and home improvements e.g. measuring for new curtains, allowing for pleats etc. measuring for carpets, wallpaper, lino etc. **Pages 302 to 308 (home improvements)**