Year 7

Newsome Academy

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Knowledge Organisers

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Mathematics

Our students will:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

- can **solve problems** by applying their mathematics to a variety of routine and non- routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

7.01 Adding and subtracting integers and decimals

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The learning outcomes for this topic are:

- Add integers using the column method
- Subtract integers using the column method
- Add numbers with a different amount of decimal places
- Subtract numbers with a different amount of decimal places
- Add and subtract decimals in context
- Solve problems with adding and subtracting

Key Word	Definition
Integer	a whole number
Decimal	a number that is not an integer, has numbers after the decimal place
Sum	the total amount resulting from the addition of two or more numbers
Difference	subtract the number with the smallest value from the number with the largest value
Place Value	the numerical value that a digit has based on the position in the number
Tenth	the first number after the decimal place
Hundredth	the second number after the decimal place
Thousandth	the third number after the decimal place

Additional Resources

MathsWatch: N3b , N4b , N13a , N13b , N14a , N14b

Corbett Maths: Video 6, 90, 91, 304; Worksheet 6, 90, 91, 304

Careers Focus – Where could this take you?

Plenty of workers such as **accountants** and **auditors** use a range of mathematics skills including simple addition and subtraction

Curriculum Links - Coherence

Applied to:

- 7.07 Perimeter and area of rectangles and compound shapes
- 7.22 Angles in a triangle or quadrilateral
- 7.23 Angles on parallel lines
- 8.15 Solving linear equations and basic inequalities
- 8.19 Interior and exterior angles
- 9F.06 & 9H.14 Angle facts, triangles, special quadrilaterals
- 9H.01 Negative numbers

Links across school:

- Working with motion equations (Science)

Key Concepts

Step 1: Line the numbers up, using your knowledge of place value.
Step 2: Starting from the ones column, add the two digits. 7+6 is 13. The 3 stays in the ones column and the 1 (ten) goes into the tens column, at the bottom.
Step 3: Now the tens column, 5+5 = 10 then add the 1 from the bottom. This totals 11.
Step 4: The 1 stays in the tens column and the other 1 goes in the hundreds column.
Step 5: Add up the last column.

```
  457
+ 356
  813
  1 1
```

1. Put the largest number on top.
2. Place the digits in the correct column.
3. Show the subtraction and equal sign.
4. **Exchange and then subtract** the top number from the bottom number in the units column.
5. Subtract the top number from the bottom number in the tens column. **Exchange if you need to.**

```
  H  T  U
     5 ⁶/ ¹5
   - 2  9
  ------
     3  6
```

When doing column addition and subtraction it is **ESSENTIAL** that you put the numbers is the correct column
E.g. 1482 + 672

BAD

```
  1 4 8 2
+ 6 7 2
-------
  8 2 0 2
```

GOOD

```
  1 4 8 2
+   6 7 2
-------
  2 1 5 4
  1 1
```

Concept – what it is

```
    2 8 5 7
+     3 0 7
-----------
```

```
    4 4 4 0
    1 0 9 9
+       9 8
-----------
```

Line up the decimal points

```
  22.3
+ 34.1
------
  56.4
```

Line up the decimal points

```
  1.234
+ 4.1
-----
  5.334
```

Non-Concept – what it isn't

```
    1 4 8 2
+   6 7 2
-------
  8 2 0 2
```

```
  5 6 8 8
- 1 0 3
-------
  4 6 5 8
```

```
  2 4 0 7
- 2 3 3 6
-------
    1 3 1
```

Standard Examples

789 + 642 becomes

```
  7 8 9
+ 6 4 2
-------
1 4 3 1
  1 1
```

Answer: 1431

```
    3 1
  3 4 3
- 2 3 7
-------
  1 0 6
```

```
  51.37
+ 24.50
-------
  75.87
```

```
    5 1
  5.6 3
- 2.4 7
-------
  3.1 6
```

Non-Standard Examples

0.2 + 0.651 + 3.47

```
  0.200
  0.651
+ 3.470
-------
  4.321
```

7.085 + 2 + 3.26

```
  2.000
  3.260
+ 7.085
-------
 12.345
```

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7.01 Adding and subtracting integers and decimals

The learning outcomes for this topic are:

- Add integers using the column method
- Subtract integers using the column method
- Add numbers with a different amount of decimal places
- Subtract numbers with a different amount of decimal places
- Add and subtract decimals in context
- Solve problems with adding and subtracting

Useful Formulae and Hints

When doing column addition and subtraction, make sure all the numbers are lined up correctly. All the hundreds in the hundreds column, all the tens in tens column…

With addition, if you've added a column and it is greater than 10, don't forget to carry – carry a 1 if they add up to 10 or more, carry a 2 if they add up to 20 or more…

In questions with decimals, make sure the decimal point stays in the same place, this applies to addition and subtraction.

In column subtraction, you might need to borrow for a few columns to the left rather than just the one directly next to it: e.g. 2 – 0.45

2.00
- 0.45

In this case you would have to borrow from the 2, then borrow from the 10 you've just created.

If a question asks you to find the difference; minus the smaller number from the larger number (i.e 241 – 139 = 102)

GCSE Questions

(a) Work out.

(i) £4.25 + £5.18

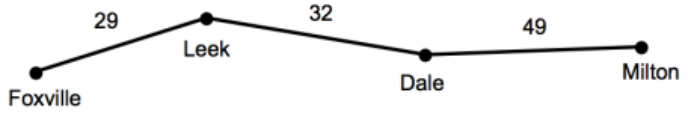
(a)(i) £ ..... **[1]**

Find the missing numbers below.

(a)

$$\begin{array}{r} \square 24 \\ -\,15\square \\ \hline 6\square 9 \end{array}$$

The distances, in miles, between four towns are shown on the map.



(a) Work out the distance between Leek and Milton.

.....miles
(2)

(b) Work out the distance between Foxville and Milton.

.....miles
(2)

1. Calculate 327 – 145

.....
(2)

2. Work out 481 – 346

.....
(2)

3. Find the difference between 903 and 245.

.....
(2)

1 Work out.

(a) 89 + 14

(a) ..... **[1]**

(b) 17 × 21

(b) ..... **[2]**

6. A chocolate bar costs 68p.
Rosie buys 2 of these chocolate bars.

How much change should she receive from £5?

£.....
(2)

Fill in the missing digits to make the addition correct.

$$\begin{array}{r} \square\,64 \\ +\,2\square 6 \\ \hline 75\square \end{array}$$

7.02 Multiplying and dividing integers and decimals

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The learning outcomes for this topic are:

- Multiply a pair of integers using column or grid method
- Multiply two values using column or grid method
- Divide two integers with an integer solution
- Divide a value by a single digit integer with a decimal solution
- Divide a decimal by multiplying by 10, 100… first
- Divide a number by a two digit number with a decimal solution

Key Word	Definition
Integer	a whole number
Decimal	a number that is not an integer, has numbers after the decimal place
Sum	the total amount resulting from the addition of two or more numbers
Product	a quantity obtained by multiplying numbers together
Powers of ten	powers of 10 are obtained my multiplying 10 by 10 as many times as you want. Some examples are 10, 100, 1000
Decimal point	a dot separating the units from the tenths, representing the number is not an integer

Additional Resources

MathsWatch: 15a , 15b , N16 , N40a , N40b

Corbett Maths: Video 92 , 93 , 98 , 204 , 199 , 200 , ; Worksheet 92 , 93 , 98 , 204 . 199/200

Careers Focus – Where could this take you?

Pilots will often need to work out how much fuel they will need for a flight. They will use measurements such as miles per gallon in order to work out how much fuel is needed.

Curriculum Links - Coherence

Applied to:

- 7.04 Multiplying and dividing negative numbers
- 7.05 Squares and roots and Order of Operations
- 7.07 Perimeter and arear of a rectangle and compound shapes
- 7.08 Areas of 2D shapes
- 7.21 Pie charts
- 8.05 Multiplying and dividing fractions
- 8.11 Compound units
- 9F.21 Rectangles, areas of triangles, compound shapes, area of quadrilaterals
- 10F.24 & 10H.8 Powers, rules for multiplying and dividing, standard form

Links across school:

- Equations of motion (Science)

Key Concepts

Example 5: **Work out 689 x 43**

689 = 600 + 80 + 9

Multiply the number on the top by the number on the side to get the number in each box

Then add the numbers in the boxes

x	600	80	9
40	24000	3200	360
3	1800	240	27

24000 + 3200 + 360 + 1800 + 240 + 27

43 = 40 + 3

Answer: 29627

186 ÷ 6 = 031

6 | 1 1 8 6

no groups of 6 can be made

1 x 6 = 6

3 x 6 = 18

Multiplying Decimals

To **multiply decimals** we first need to multiply by powers of ten to turn the decimals into whole numbers. We then need to divide by powers of ten at the end to get our final answer.

E.g.

3.4 x 2.86

x10 x100

286 x 34

1144

8580

9724

9724 ÷ 10 ÷ 100 = 9.724

Concept – what it is

31 x 26 = 806

30 1 20 6

x	20	6
30	600	180
1	20	6

Row 1, Row 2

600 + 180 + 20 + 6 = 806

321 x 23 = 963 + 6420 = 7383

288 ÷ 9 = 32

032

9 | 288

Non-Concept – what it isn't

126 x 436 =

X	1	2	6
4	4	8	24
3	3	6	18
6	6	12	36

36 + 27 + 54 = 117

11

Make sure you are properly setting your numbers up with the correct amount of zeros before/ after every number

789 ÷ 14 = 565

0565

14 | 7889

SHOULD BE 565 r5 or 565 5/14

Standard Examples

g) **574 x 29**

	500	70	4
20	10000	1400	80
9	4500	630	36

11480 + 5166 = 16646

045

8 | 3640

Non-Standard Examples

3.15 x 1.25

X	3	0.1	0.05
1	3	0.1	0.05
0.2	0.6	0.02	0.01
0.05	0.15	0.005	0.0025

3.15 + 0.63 + 0.1575 + 3.9375 = 1

5 friends go on a coach trip.
The total cost of the trip is £84.

Work out the cost for each person.

16.80

5 | 84.00

£ 16.80 (2)

7.02 Multiplying and dividing integers and decimals

The learning outcomes for this topic are:

- Multiply a pair of integers using column or grid method
- Multiply two values using column or grid method
- Divide two integers with an integer solution
- Divide a value by a single digit integer with a decimal solution
- Divide a decimal by multiplying by 10, 100… first
- Divide a number by a two digit number with a decimal solution

Useful Formulae and Hints

For grid method, make sure that you separate the number correctly. For example 376 would split into 300 70 6.
A decimal example would be, 0.0435 into 0.04 0.003 0.0005

If you struggle with multiplying decimals, get rid of the decimal at the start and put back in at the end (0.6 x 0.4 becomes 6 x 4 = 24 then two numbers after decimal → 0.24)

Be careful when adding your rows up, you can use column addition to do addition slightly easier

When using bus stop, you need to be confident with you times tables (practice these). If you're struggling, right down the times table next to your answer sheet (e.g. 7, 14, 21, 28…)

USE WHICHEVER METHOD WORKS FOR YOU

GCSE Questions

11 320 people go on a coach trip.
Each coach holds 53 people.

Gary says 6 coaches are needed.

Is Gary correct?
You must show your working.

.....

..... **[2]**

8 Plaza United are playing a football match away from home.

(a) 379 supporters are going to the match by coach.
Each coach seats 45 people.

What is the smallest number of coaches that will be needed?

(a) ..... **[2]**

Fill in each missing number.

(a) $0.36 \times 20 = \ldots\ldots\ldots \times 10$

(b) $14 \div 50 = \ldots\ldots\ldots \div 100$

8 Yoghurts are packed in trays.
Each tray holds 12 yoghurts.

What is the smallest number of trays needed to pack 460 yoghurts?

25 Bennie is 7 years older than Ayesha.
Chloe is twice as old as Bennie.
The sum of their three ages is 57.

Work out the ages of Ayesha, Bennie and Chloe.

Ayesha's age is .....

Bennie's age is .....

Chloe's age is ..... **[6]**

7.03 Adding and Subtracting Negative Numbers

The learning outcomes for this topic are:

- Add a negative integer and a positive integer
- Subtract a negative integer and a positive integer
- Add a pair of negative integers
- Subtract a pair of negative integers
- Find the difference between a pair of integers
- Add and subtract negative integers in context

Key Word	Definition
Negative	A number less than 0, has a – symbol
Positive	A number greater than 0
Directed	Numbers with both sizes and direction e.g. temperature can go up or down
Difference	subtract the number with the smallest value from the number with the largest value
Sum	the total amount resulting from the addition of two or more numbers
Product	a quantity obtained by multiplying numbers together
Symbol	e.g. ÷ x + - =

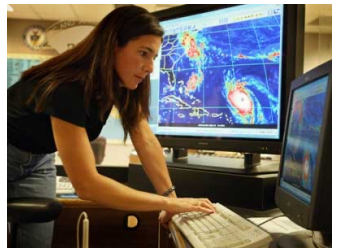
Additional Resources

MathsWatch: N18 , N19a

Corbett Maths: Video 205 , 209 ; Worksheet 205 , 209

Careers Focus – Where could this take you?

Meteorologists and **weather forecasters** need to understand negative numbers in order to predict the weather and develop a greater understanding of the Atmosphere



Curriculum Links - Coherence

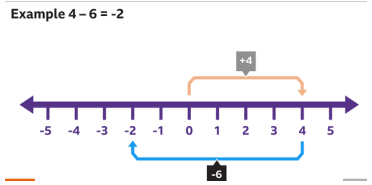
Required Knowledge:
- 7.01 Adding and subtracting integers and decimals

Applied to:
- 7.09 Graphs of linear equations
- 9F.15 Gradient of a line, y = mx + c, finding the equation of a line, parallel lines
- 9H.01 Negative numbers

Links across school:
- Temperature (Science and Geography)

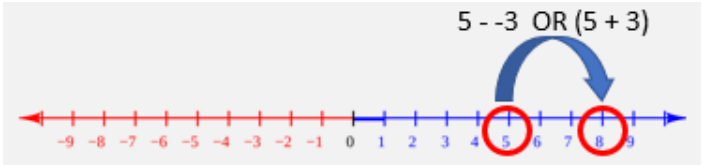
Key Concepts

When adding and subtracting negative numbers, it can be very helpful to use a number line. In this case, we know that 4 – 6 will be a negative number but sometimes it can be difficult to visualise in our heads



When subtracting a negative number, we actually do an addition. For example, 5 - -3 can also be written as 5 + 3 = 8

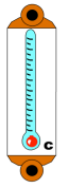
NOTE: -5 - 3 is NOT the same as -5 + 3 OR 5 + 3 so be careful



In exams, it is common to see real-life problems involving negative numbers. The most common are temperature related questions. Approach these like you would any other negative numbers question, draw a number line and read carefully!

At midnight, the temperature in Belfast was –2°C
At 9am, the temperature was 5°C

By how many degrees did the temperature rise?



In this case: 5°C - -2°C = 7°C

Concept – what it is

*Remember **subtracting a negative** number is the same as **adding** the number.*
***Adding a negative number** is the same as **subtracting** the number.*

10 – 4 = 6
10 + 4 = 14
10 - -4 = 10 + 4 = 14
-10 – 4 = -14
-10 - -4 = -10 + 4 = -6

Non-Concept – what it isn't

-5 – 4 does NOT equal -5 + 4
The signs must be together (-5 - -4)

Another common mistake is:
- 4 – 10 = 14 *(it should be -14)*
Or
-11 + 6 = -17 *(it should be -5)*

TWO NEGATIVES DO NOT MAKE A POSITIVE!!

Standard Examples

4 - 6 =

- 5 + 10 =

- 3 + 5 =

-5 - 9=

2 - 5 =

5 - 2 =

- 5 + 4 =

-4 - 4=

-7 + 2 + 4

-12 + 17 + 13

-8 + 3 – 7

-25 + 19 – 12

-34 + 7 – 43

-81 + 129 – 30

It is also common for these questions to have more than two numbers (see left)

Non-Standard Examples

A chest of treasure was hidden in the year 64 BC and was found in 284 AD.
For how long was the chest hidden?

284 - -64 = 347

In this example, 64 BC is the negative number and 284 AD is the positive number

7.03 Adding and Subtracting Negative Numbers

The learning outcomes for this topic are:

- Add a negative integer and a positive integer
- Subtract a negative integer and a positive integer
- Add a pair of negative integers
- Subtract a pair of negative integers
- Find the difference between a pair of integers
- Add and subtract negative integers in context

Useful Formulae and Hints

Draw a **number line** when dealing with negative numbers, it's easy to go wrong when you do not visualise the numbers properly

Remember **subtracting a negative** number is the same as **adding** the number.
Adding a negative number is the same as **subtracting** the number.

Understand key terms, it is essential that you know the definitions For example, understand difference means largest minus smallest

Don't forget that negative numbers **ALWAYS** hold smaller value that positive numbers e.g. -100 < 1

GCSE Questions

2 The table shows some temperatures, in °C.

Monday	Tuesday	Wednesday	Thursday	Friday
-5	-1	5	6	-3

(a) Find the difference between the temperatures on Thursday and Friday.

(a) ..... °C **[1]**

(b) On Saturday the temperature was 7 °C higher than on Friday.

Find the temperature on Saturday.

(b) ..... °C **[1]**

9. Fill in the missing numbers

(a) $\square + 2 = -1$

(1)

(b) $8 + \square = 0$

(1)

(c) $-8 - \square = 3$

(1)

7. Work out each of the following

(a) 7 – (– 4)

..... **(1)**

(b) –2 + (–3)

..... **(1)**

(c) –6 – (–8)

..... **(1)**

(ii) -8 + 11

..... **[1]**

1 **(a)** Work out.

(i) -1 + 6

..... **[1]**

(ii) 7– -3

..... **[1]**

7.04 Multiplying and dividing negative numbers

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The learning outcomes for this topic are:

- Multiply a negative and a positive integer
- Divide a negative and a positive integer
- Multiply a pair of negative integers
- Divide a pair of negative integers
- Find missing values given their product
- Solve problems in finding negative with a given sum or product

Key Word	Definition
Negative	a number less than 0, has a – symbol
Positive	a number greater than 0
Product	a quantity obtained by multiplying numbers together
Quotient	a result obtained by dividing one quantity by another
Divisor	a number by which another number is to be divided e.g. 15 ÷ 3, the divisor is 3
Power	A power represents how many times a number should be multiplied by itself e.g. $5^2 = 5 \times 5 = 25$, 2 is the power or $4^3 = 4 \times 4 \times 4 = 64$, 3 is the power
Integer	a whole number

Additional Resources

MathsWatch: N19b

Corbett Maths: Video 206 , 207 ; Worksheet 206 , 207

Careers Focus – Where could this take you?

A whole range of **medical workers** use negative numbers in order to understand how a person is ill. For example, understanding iron deficiency or blood pressure

Curriculum Links - Coherence

Required Knowledge:

- 7.02 Multiplying and dividing integers and decimals
- 7.03 Adding and subtracting negative numbers

Applied to:

- 7.05 Squares and roots and the Order of Operations
- 7.09 Graphs of linear equations
- 7.13 Simplifying after expanding and factorising single brackets
- 7.14 Substitution and using and writing formulae
- 8.15 Solving linear equations and basic inequalities
- 8.24 Expanding two or more brackets
- 9F.06 & 9H.14 Angle facts, triangles, special quadrilaterals
- 9H.01 Negative numbers

Key Concepts

Similar to addition and subtraction with negative numbers, it can be difficult to deal with negative numbers when multiplying and/ or dividing. The best way to know whether an answer will end up positive or negative is:

- Multiplying/ dividing two numbers with the **same sign** gives a **positive** answer
- Multiplying/ dividing two numbers with **different** signs gives a **negative** answer

×	-3	-2	-1	0	1	2	3
-3	9	6	3	0	-3	-6	-9
-2	6	4	2	0	-2	-4	-6
-1	3	2	1	0	-1	-2	-3
0	0	0	0	0	0	0	0
1	-3	-2	-1	0	1	2	3
2	-6	-4	-2	0	2	4	6
3	-9	-6	-3	0	3	6	9

+ × + = +
− × − = +
+ × − = −
− × + = −
+ ÷ + = +
− ÷ − = +
+ ÷ − = −
− ÷ + = −

When working with powers, think carefully about what the power means. For example **$(-5)^2 = -5 \times -5 = 25$** *a negative times a negative makes a positive.*

A more difficult example would be **$(-3)^3 = -3 \times -3 \times -3 = -27$** *in this case, -3 x -3 = 9 therefore 9 x -3 = -27 as a positive times a negative makes a negative.* **If putting these questions in on calculators, make sure you put the brackets in otherwise the answer could be wrong**

Occasionally, you will be asked to find the missing number in a calculation involving negative numbers. For example, -48 ÷ ? = 6 *Using our knowledge of dividing negative numbers, we know that two negatives divided make a positive answer, so we know our missing value will be negative. Once we know that, we can use our multiplication knowledge to know that 8 x 6 = 48 Therefore,* our final answer is -48 ÷ **-8** = 6

A multiplication example would be 3 x ? = -42 *Using similar logic again, we know a positive multiplied by a negative equals a positive therefore our missing value will be negative. The applying prior knowledge, we know that 3 x 14 = 42 Therefore,* our final answer is 3 x **-14** = -42

Concept – what it is

(-6) x 2 = -12
(-20) ÷ 5 = -4
(-3) x 4 = -12
(-10) ÷ 2 = -5
(-5) x 10 = -50
(-15) ÷ 5 = -3
3 x (-6) = -18
16 ÷ (-2) = -8

0 x (-4) = 0
(-27) ÷ (-3) = 9
6 x (-7) = -42
0 ÷ (-6) = 0
(-8) x 11 = -88
(-48) ÷ (-6) = 8
7 x (-8) = -56
(-70) ÷ (-7) = 10

$(-5)^3 = -5 \times -5 \times -5 = -125$ (as 25 x -5 = -125)
$(-7)^2 = -7 \times -7 = 49$

Non-Concept – what it isn't

-3 x -2 = - 6 This is WRONG as a negative multiplied by a negative is a positive
-3 x -2 = 6

$(-9)^2 = -81$ Quite often, students would but -9^2 in their calculator to get an answer of -81. **If using a calculator put the brackets in** $(-9)^2 = 81$

Be careful what order you divide your numbers. For example, -14 ÷ 7 is NOT the same as 7 ÷ 14

Standard Examples

(-2) x (-8) = 16
(-30) ÷ (-3) = 10
(-7) x (-5) = 35
-40) ÷ (-10) = 4
(-11) x (-3) = 33
(-45) ÷ (-5) = 9
7 x (-10) = -70
12 ÷ (-1) = -12

33) (-100) x 8 = -800
34) (-60) ÷ (-30) = 2
35) 9 x (-7) = -63
36) (-84) ÷ 12 = -7
37) 14 x (-10) = -140
38) (-80) ÷ (-20) = 4
39) (-12) x (-9) = 108
40) (-120) ÷ 10 = -12

$(-1)^2 = 1$
$(-2)^2 = 4$
$(-3)^2 = 9$
$(-4)^2 = 16$
$(-5)^2 = 25$
$(-6)^2 = 36$
$(-7)^2 = 49$

$(-1)^3 = -1$
$(-2)^3 = -8$
$(-3)^3 = -27$
$(-4)^3 = -64$
$(-5)^3 = -125$
$(-6)^3 = -216$
$(-7)^3 = -343$

Non-Standard Examples

Question 1: Work out the missing numbers

(a) -6 x □ = -30 (b) -6 x □ = 0
(c) -6 x □ = 18 (d) □ x -6 = -54

Question 2: Work out the missing numbers

(a) -24 ÷ □ = 6 (b) □ ÷ -8 = -2
(c) 32 ÷ □ = -4 (d) □ ÷ -3 = 4

(e) $(-1)^4$ (f) $(-10)^4$

(g) $(-2)^4$ (h) $(-3)^4$

7.04 Multiplying and dividing negative numbers

The learning outcomes for this topic are:

- Multiply a negative and a positive integer
- Divide a negative and a positive integer
- Multiply a pair of negative integers
- Divide a pair of negative integers
- Find missing values given their product
- Solve problems in finding negative with a given sum or product

Useful Formulae and Hints

If the **signs** are the **same** then your answer will be **positive**, if they are **different** then the answer will be **negative**. This is the same for multiplication and division.

If you have a negative number to the power of something (e.g. 9) then there's a quick way to see if the answer is positive or negative.

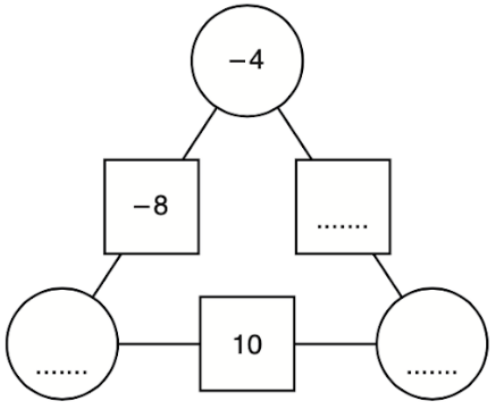
- If your power is an **odd** number (1, 3, 5…) then you answer will be **negative**.
- If your power is an **even** number (2, 4, 6…) then your answer will be **positive**.

$+ \times + \}+$ $\quad - \times - \}+$ $\quad + \div + \}+$ $\quad - \div - \}+$

$+ \times - \}-$ $\quad - \times + \}-$ $\quad + \div - \}-$ $\quad - \div + \}-$

GCSE Questions

5 To find the number in a square, multiply the numbers in the two circles connected to it.



Fill in the missing numbers. **[3]**

(iii) -6×-9

..... **[1]**

10. Fill in the missing numbers

(a) $2 \times \square = -16$ **(1)**

(b) $-1 \times \square = 2$ **(1)**

(c) $\square \times -7 = 42$ **(1)**

(d) $\square \div 3 = -15$ **(1)**

8. Emily has the following cards

-1 $\quad -4$ $\quad 2$ $\quad -6$ $\quad 4$ $\quad 5$

Emily is going to choose two cards and multiply the numbers on them.
What cards should Emily choose to make the largest possible answer?

$\square \times \square$ **(1)**

7.05 Squares, Roots and Order of Operations

The learning outcomes for this topic are:

- Apply the order of operations correctly to simple expressions
- Apply the order of operations to more complex expressions
- Square simple integers
- Square simple integers
- Cube simple integers
- Square root values with integer solutions
- Estimate the value of a root with a decimal solution

Key Word	Definition
Power	A power represents how many times a number should be multiplied by itself e.g. $4^3 = 4 \times 4 \times 4 = 64$
Index	The small little number that represents the power e.g. the index is 2 7^2
Indices	Plural of index
Roots	The opposite of power e.g. $\sqrt{25} = 5$
Order	Another word for indices
Inverse	The opposite of a mathematical action e.g. ÷ and x or + and -
Square	A number multiplied by itself e.g. $3^2 = 3 \times 3$
Cube	A number multiplied by itself three twice e.g. $8^3 = 8 \times 8 \times 8$

Additional Resources

MathsWatch: N20 , N25

Corbett Maths: Video 211 , 212 , 213 , 214 , 226 , 227 , 228 ; Worksheet 211 , 212/3 , 214 , 226/7 , 228

Careers Focus – Where could this take you?

Computer programmers use an order of operations (hierarchy) in order to develop algorithms and software

Curriculum Links - Coherence

Required Knowledge:

- 7.01 Adding and subtracting integers
- 7.02 Multiplying and dividing integers

Applied to:

- 7.14 Using formulae
- 8.16 Solving equations
- 8.17 Linear equations with brackets
- 8.18 Rearranging formulae and changing the subject
- 9F.01 Order of Operations
- 9H.20 Basic algebra with quadratics
- 10H.19 Solving equation algebraically

Links across school:

- Physics calculation (Science)

Key Concepts

The Order of Operations refer to the order we solve expressions when the expressions contain different types of mathematical processes (e.g. addition, multiplication, indices)

The way to remember to order we solve these expressions:
Brackets ()
Indices 2^2
Division ÷
Multiplication X
Addition +
Subtraction -

8 x (4 + 4) – 2^2 = 60
Firstly we solve the brackets (4 + 4) = 8 so we are then left with 8 x 8 - 2^2 = Then, we solve the indices 2^2 = 4 therefore, we have 8 x 8 – 4 = After that, we multiply 8 x 8 = 64 finally we have 64 – 4 = 60

5^2 - 14 + (14 ÷ 7 + 4) = 17
Solve brackets (14 ÷ 7 + 4) = (2 + 4) = 6
Solve indices 5^2 = 25
Now left with 25 – 14 + 6 = 17 *Work left to right*

Squaring a number means you multiply it by itself. For example 3 squared would be written as $3^2 = 3 \times 3 = 9$ Another example would be $12^2 = 12 \times 12 = 144$

Square rooting is the reverse of squaring it is written with a sign like this √. In order to work out the square root of a number, you simply need to develop an understand of your square numbers: 1^2=1 (√1=1), 2^2=4 (√4=2), 3^2=9 (√9=3), 4^2=16 (√16=4), 5^2=25 (√25=5), 6^2=36 (√36=6),7^2=49 (√49=7), 8^2=64 (√64=8), 9^2=81 (√81=9), 10^2=100 (√100=10), 11^2=121 (√121=11), 12^2=144 (√144=12)

Concept – what it is

$7-24\div8\times4+6$
$=7-3\times4+6$
$=7-12+6$
$=-5+6$
$=1$ ✓

$7-24\div8\times4+6$
$=7-3\times4+6$
$=7-12+6$
$=-5+6$
$=1$ ✓

$(22\div2-2\cdot5)^2+(4-6\div6)^2$
$=(11-2\cdot5)^2+(4-1)^2$
$=(11-10)^2+(4-1)^2$
$=(1)^2+(3)^2$
$=1+9$
$=10$ ✓

Non-Concept – what it isn't

5 + 5 x 6 = 60 *Remember don't just work from left to right use the* ***ORDER OF OPERATIONS***
5 + 5 x 6 = 35

5(8 – 4) ÷ 10 = 5 x 4 ÷ 10 = 5 x 0.4 = 2
If you have multiplication and division in the same expression, work left to right, not division then multiplication
5(8 – 4) ÷ 10 = 5 x 4 ÷ 10 = 20 ÷ 10 = 2

5 + 4^3 = 5 x 4 x 3 = 60
Don't forget that 4^3 = 4 x 4 x 4 NOT 4 x 3
5 + 4^3 = 69

Standard Examples

1. $3 \times 5 + 6 = 21$
2. $(2 \times 4) \div 4 = 2$
3. $14 - 5 + 3 = 12$
4. $50 - 5 \times (27 \div 3) = 5$
5. $11^2 - 8 \times 7 + 2 = 67$

$(48 \div 2) - 4^2 + 2 \times 2 = 24 - 4^2 + 2 \times 2$
$24 - 16 + 2 \times 2 = 24 - 16 + 4 =$
$8 + 4 = 12$

Non-Standard Examples

$P = 3a + 2b^2$
(a) Find the value of P when $a = 5$ and $b = -4$

$P = 3(5) + 2(-4)^2$
$= 15 + 2 \times 16$
$= 15 + 32$

Joey thinks the answer to 16 + 4 x 2 is 40.
Albert thinks the answer to 16 + 4 x 2 is 24.

Who is correct?
Explain your answer.

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7.05 Squares, Roots and Order of Operations

The learning outcomes for this topic are:

- Apply the order of operations correctly to simple expressions
- Apply the order of operations to more complex expressions
- Square simple integers
- Square simple integers
- Cube simple integers
- Square root values with integer solutions
- Estimate the value of a root with a decimal solution

Useful Formulae and Hints

Remember the Order of Operations:
Brackets ()
Indices 2^2
Division ÷
Multiplication X
Addition +
Subtraction –

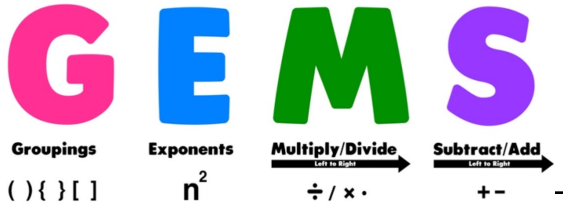
Do not forget that when you are left with **multiplication** and **division** then you do these actions **left to right**

The same happens with **addition** and **subtraction**; work **left to right**

The above points can be remembered using the acronym **GEMS** *(see below)*

Remember that if a number is squared then it is multiplied by itself $8^2 = 8 \times 8 = 64$

Learn your square numbers so you can instantly recognise square numbers and their roots



GCSE Questions

(a) Work out.

(i) 10^3

(a)(i) ..... **[2]**

(ii) $9(8 - 3 \times 2)$

(ii) ..... **[2]**

(b) Put brackets into this sum so that the answer is correct.

$1 + 2 \times 3 + 5 = 17$ **[1]**

(b) Work out.

$(9 - 3 \times 2)^2$

(b) ..... **[2]**

(c) Fill in the power.

$5^{\square} = 125$ **[1]**

(a) Evaluate.

(i) $\sqrt{121}$

..... **[1]**

Insert brackets to make each of these calculations correct.

$5 \times 3 - 1 = 10$

$3 + 6 - 2 \div 2 = 3.5$ **[2]**

Work out.

$5 \times (2 + 4)$

..... **[1]**

Alex has a number game.
He must put down tiles to make two calculations with the same answer.

Here is what Alex put down.

2	–	3	×	2	=	3	–	5

Is he correct?
Show how you decide.

Alex is ..... because .....

..... **[2]**

7.06 Ordering decimals and estimates

The learning outcomes for this topic are:

- Round numbers to a given power of 10
- Round numbers to a given amount of decimal places
- Round numbers to one significant figure
- Put a list of decimals in ascending or descending order
- Estimate simple calculations by rounding to one significant figure
- Order a list of decimals that recur

Key Word	Definition
Decimal	a number that is not an integer, it has decimal places
Place Value	the numerical value that a digit has based on the position in the number
Rounding	When you make a number simpler by choosing a nearby number with fewer significant figures
Approximate	close to the actual answer but not exact
Estimate	doing a rough calculation by rounding all numbers to 1 significant figure
Recurring	when a decimal repeats forever 1/3 = 0.333…
Significant	number of digits in a number that contribute to its degree of accuracy

Additional Resources

MathsWatch: N2a , N2b , N27a , N27b , N38 , N43a , N43b

Corbett Maths: Videos 95 , 215 , 276 , 277a , 277b , 278 , 279a ; Worksheets 95 ,215 , 276 , 277 , 278 , 279a

Careers Focus – Where could this take you?

Plenty of workers such as **accountants** and **auditors** use a range of mathematics skills including simple addition and subtraction

Curriculum Links - Coherence

Required Knowledge:

- 7.02 Multiplying and dividing integers
- 7.05 Squares and roots and Order of Operations

Applied to:

- 7.07 Areas of shapes
- 7.15 Fractions, decimals and percentages
- 7.23 Angles on parallel lines
- 8.09 Rounding and approximation
- 8.26 Pythagoras' Theorem
- 9H.02 Approximation with multiplication and division

Links across school:

- Comparing values (Science)
- Checking calculations (Science)

Key Concepts

When asked to round to a certain degree of a number, you need to have a solid understanding of place value names. For example, if you were asked to round 131.47359 to the nearest **HUNDREDTH,** you would understand that means to 2 decimal places (131.47359 → 131.47)

Also, when asked to round to 1 decimal place for example, if that decimal place rounds to a zero then write it out fully (e.g.7.03 → 7.0 NOT 7)

When asked to round to a number of significant figures (e.g. 3 significant figures) then you would round to the third non-zero number
17895 to 3 significant figures = 17900
95 to 1 significant figure = 100
0.0008954 to 2 significant figures = 0.000090

If a question asks you to estimate an answer, you round all numbers to **1 significant figure** and then answer the question

Work out an estimate for

$$\frac{58.8 \times 20.9}{101.4}$$

58.8 → 60 and 20.9 → 20 and 101.4 → 100
Therefore, 60 x 20 = 1200 and 1200 ÷ 100 = 12

In order to work out the size order of recurring decimals then it can be beneficial to write them out to more decimal places
$0.\dot{4}\dot{6} = 0.46464646\ldots$ or $0.\dot{4}6\dot{4} = 0.464464464\ldots$
As a result of writing them out to more decimal places, we can see that $0.\dot{4}6\dot{4} < 0.\dot{4}\dot{6}$

Concept – what it is

Estimate

$$\frac{31 \times 398}{61}$$

Show clearly how you obtained your answer.

$\approx \frac{30 \times 400}{60} = \frac{12000}{60}$

$= \frac{1200}{6} = \frac{600}{3} = 200$ 200 (3)

Write these numbers in order of size.
Start with the smallest number.

0.417 0.417777 0.4171717 0.417417

0.417, 0.417, 0.417, 0.417

Non-Concept – what it isn't

Round 17.96 to 1 decimal place
18 *Even if the answer ends up with a zero in the first decimal place column you need to wite your answer as* 18.0
Whilst the answers have the **same value** they have a **different degree of accuracy**

Read decimals properly 0.31 **should NOT** be read as zero point thirty-one, it **SHOULD** be read as zero point three one

Standard Examples

Write these numbers in order of size.
Start with the smallest number.

0.24545 0.245555 0.245245 0.245

0.245, 0.245, 0.245, 0.245

Estimate

$$\frac{31 \times 398}{61}$$

Show clearly how you obtained your answer.

$\approx \frac{30 \times 400}{60} = \frac{12000}{60}$

$= \frac{1200}{6} = \frac{600}{3} = 200$ 200 (3)

Round 3925 to the nearest hundred.

3900

Non-Standard Examples

Estimate the cost of 31 televisions at £196.50 each and 19 DVD players at £50.99 each.
Show clearly how you obtained your answer

$\approx 30 \times 200 + 20 \times 50$
$= 6000 + 1000$

7000 (3)

At the football match 2156 hot drinks were sold.

The caters round this number to the nearest hundre

(b) Round 2156 to the nearest hundred.

2200

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7.06 Ordering decimals and estimates

The learning outcomes for this topic are:

- Round numbers to a given power of 10
- Round numbers to a given amount of decimal places
- Round numbers to one significant figure
- Put a list of decimals in ascending or descending order
- Estimate simple calculations by rounding to one significant figure
- Order a list of decimals that recur

Useful Formulae and Hints

Become familiar with place value names (examples at bottom of 9,)

If rounding to a number of significant figures or decimals, look at the number after the desired and see if rounds up or down (1,2,3,4 DOWN 5,6,7,8,9 UP)
For example 26.6789 to 2 decimal places 26.67 89 8 rounds up therefore 26.68 (2d.p.)

When dealing with recurring decimals, it is very beneficial to write them out to a larger number of decimals (6-8 decimal places)
For example, 0.345 = 0.345345

If you have rounded an answer and the final decimal is a zero, KEEP IT THERE
8.99 to 1 d.p. → 9.0 NOT 9

2	6	2	4	3	4	5	.	2	3	4	5
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones	decimal point	tenths	hundredths	thousandths	ten thousandths

GCSE Questions

(b) Round 184 329 to the nearest hundred.

(b) ..... **[1]**

2 **(a)** Write down.

(i) 3091 rounded to the nearest hundred

(a)(i) ..... **[1]**

19 Asha worked out $\frac{326.8 \times (6.94 - 3.4)}{59.4}$.

She got an answer of 19.5, correct to 3 significant figures.

Write each number correct to 1 significant figure to decide if Asha's answer is reasonable.

.....

..... **[3]**

(a) Round 7.306 5 to 2 decimal places.

(a) ..... **[1]**

(b) Round each number to 3 significant figures.

(i) 408 231

(b)(i) ..... **[1]**

(ii) 0.006 137 02

(ii) ..... **[1]**

2 By rounding each value to one significant figure, estimate the cost of 3.9 kg of apples at 87p per kg.

£ ..... **[2]**

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English

Our students will:

- read easily, fluently and with good understanding
- develop the habit of reading widely and often, for both pleasure and information
- acquire a wide vocabulary, an understanding of grammar and knowledge of linguistic conventions for reading, writing and spoken language
- appreciate our rich and varied literary heritage
- write clearly, accurately and coherently, adapting their language and style in and for a
- range of contexts, purposes and audiences
- use discussion in order to learn; they should be able to elaborate and explain clearly their understanding and ideas
- are competent in the arts of speaking and listening, making formal presentations, demonstrating to others and participating in debate.

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Year 7 'Private Peaceful'

The aims of the sequence of learning are to ensure that all students:

- develop a wider range of reading strategies to extract meaning
- explore and explain contextual factors affecting the text/writer
- Identify and analyse use of language to create effects
- Write analytical paragraphs explaining use and impact on the reader.
- Explore and identify how a text is structured
- Use prior knowledge of genre to predict narrative
- Identify and explain writer's purpose in creating the text.

Keyword	Definition
Symbolism	the use of symbols to represent ideas or qualities
Foreshadowing	be a warning or indication of (a future event).
Juxtaposition	the fact of two things being seen or placed close together with contrasting effect.
Insubordination	refusal to obey orders
Desertion	illegally leaving the armed forces
AWOL	(Absence without leave) walking out of barracks without permission
Tied cottage	a cottage owned by your employer that you live in on their land whilst you are employed by them
Class system	a system where social status is decided by which family you were born into

Key Concepts

Context

Michael Morpurgo – Michael Morpurgo is an author, poet and playwright who is predominantly known for his children's novels such as War Horse (1982) and Private Peaceful (2003). His skill in 'magical story-telling' and vivid description has often been commended, most notably his depictions of World War I conditions and the Cornish coastline. Morpurgo served as the Children's Laureate from 2003 until 2005. Morpurgo has revealed that his fireside conversations with World War I veterans in Devon informed his writing of Private Peaceful

World War I – World War I, also known as the 'Great War', was a global war originating in Europe that took place from July 1914 to November 1918. It involved all of the world's major powers, opposing the Allies (including Russia, France, UK, and USA) against the Alliance (Germany, AustroHungary, the Ottoman Empire) Over 9 millions armed forces and 7 million civilians were killed in the war. Many more returned injured. The winter of 1916-17 was so cold that many lost fingers & toes to frostbite - trenches offered no protection.

Trench Warfare – The use of trench warfare significantly influenced the high death toll. Both sides dug deep defensive lines in the soil called trenches. Attacks involved going across No Man's Land (in the middle) where attackers were open to machine gun fire, mines, and shells. Even if successful, casualties were huge – No Man's Land was littered with bodies. Life in the trenches were awful, with disease and exposure rife. Men would often spend weeks at a time on the front line, where they would need to sleep, eat, and defecate close to the trenches.

'Desertion' and 'Cowardice' in WWI - Soliders were expected to stand and follow orders (even die for their country) irrespespective of their own beliefs/ ideas. As the war, however, quickly became the bloodiest in history, for many, the horror proved too much. Shellshock and insanity ran rife, and some abandoned their posts. Throughout World War I, the British military executed 306 of their own soldiers for desertion and cowardice. In 2006, the British government announced that all 306 soldiers will receive posthumous pardons.

Motifs and Themes

Relationships – Despite the cruelties and inequalities that the Peaceful family face, they remain resolute in their togetherness and their care for one another. Tommo quickly learns that he cannot truly trust anyone except his family, and in particular Charlie. In a world that seems determined to divide and break them, the brothers remain sheltered by their relationships with one another. In the end, Charlie pays the ultimate price for this, as he puts his family bonds ahead of military commands. Tommo tries to ensure that his bravery is not forgotten.

The Futility of War– Morpurgo aims to capture the harshness of war and the terror faced by the soldiers. Through Tommo and Charlie's experiences, a generation of young men are pressurised into enlisting, trained inadequately, and sent off to face horrors of which the world had never seen before. Morpurgo makes clear that the reasons for fighting in the war were lost at the front lines, as progressively younger men are wiped out. War continues to divide people, to change them forever, and I write about it both because I want people to understand the absolute futility of war, the "pity of war" as Wilfred Owen called it." (Michael Morpurgo)

Plot in 10 Quotes

- I won't dream it away. I mustn't, because every moment of it will be far too precious…Tonight, more than any other night of my life, I want to feel alive.' - Tommo
- **'then Charlie would be there beside me, and everything would be all right again. Charlie always made things all right again.' Tommo**
- Charlie could have left me there. He could have made a run for it and got clean away, but Charlie's not like that. He never has been.' Tommo
- **I couldn't believe what he was saying. They hadn't told me. They'd been meeting in secret and neither of them had told me.' Tommo**
- 'we both knew enough hurt had been done already, that more would only widen the rift between us and neither of us wanted that.' Tommo
- **'Charlie was stirring Hanley up unnecessarily, and was making things difficult for the rest of us.'**
- 'even if I wanted to, I can't go with you because I'd have to leave Tommo behind, and I can't do that.' Charlie
- **'It wasn't a trial Tommo, they'd made up their minds I was guilty before I even sat down' Charlie**
- 'They tell me he refused the hood and that he was singing when he died..' Tommo
- **'All I know is that I must survive. I have promises to keep.'** Tommo

Theories

Shell-shock - Shell-shock was a reaction to being constantly under bombardment from high explosives. It caused insanity and many physical problems such as being unable to stop shaking.

Gas/chemical weapons - these were first used in WW1 and were seen as immoral by many. However, many did not see a difference between using gas and other forms of weapons.

Propaganda - Propaganda was not new, but due to more efficient printing systems and the need to recruit more soldiers than in any other war, it was used more often. However, anti-war propaganda also increased.

Year 7 'Private Peaceful'

Retrieval Practice - Model Response and Assessment

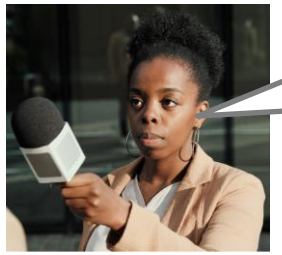
Assessment Questions will be linked to Creative Writing and Paper 1: Q1-4 Skills.
The assessment objectives are as follows:
P1Q1: A01- Inference and comprehension
P1Q2: A02- Methods (language)
P1Q3: A02- Methods (structure)
P1Q4: A04- Look at and explore texts critically. Presenting an argument.
P1Q5: A05- Clear communication and A06- Spelling, punctuation and grammar.

Questions	Answers
P1Q1: List four things you learn about Thomas	a) Thomas is alone. b) Thomas is feeling alive. c) Thomas is led by Charlie. d) Thomas feels nervous.
P1Q2: How does Morpurgo use language to present Thomas' feelings about war?	Morpurgo possibly uses a pattern of adjectives such as 'heavy' and 'strange' to not only present Thomas' feelings of anxiousness about war and his fate but also Thomas' sense that nature is against him.
P1Q3: How does Morpurgo use structure to interest the reader?	The writer possibly uses juxtaposition between the innocence of Thomas in 'my heart is heavy' and the experience of Charlie in 'he's done everything and knows everything' to highlight the sense that Thomas is foregrounded as a character who experiences a feeling of injustice in life.
P1Q4: A student once said 'Thomas Peaceful is a true victim of war in this novel.' To what extent do you agree with the statement?	It can be argued that Thomas Peaceful is constructed by Morpurgo to be a character who is an innocent young man who struggles with war and is a victim because he is seen as isolated during battle and 'huddled in his tent'. This imagery of 'huddled' maybe presents him as oppressed by war and metaphorically trapped as a victim by the battle around him.
P1Q5:	• Write a narrative about a conflict. • Or write a description of a solder's feelings in war.

Character Descriptions

Thomas 'Tommo' Peaceful – Tommo is the young narrator and central character in the novel. As he narrates, he is an underage soldier, fighting in France in WWI. He is scared and alone. He looks back on his earlier childhood memories, in which he has relied on his brother for guidance and protection. They have a joint-love of their childhood friend: Molly. It appears Tommo may have early PTSD or shellshock.
Charlie Peaceful – Charlie is Tommo's older brother, and also acts as his protector. As a child, he has always looked out for his brother, and he now continues to do so as a soldier. By putting family loyalty first, Charlie faces the death sentence through a military court. Charlie is tough, yet strong, brave and righteous, caring for others (such as Molly and Tommo) before himself. He deserves better than the fate he is given.
Big Joe – Big Joe, the eldest Peaceful brother, has learning difficulties which stemmed from early childhood meningitis. He is highly sensitive and unable to adequately communicate his thoughts. His brothers adore him and help to care for him.
Mrs Peaceful – She is the mother to the three sons, and does this job alone (after her husband's death) very well. She stands up for her boys at numerous times in the novel, and takes hard jobs to ensure that they are provided for.
Molly – Molly is the girl with whom Charlie and Tommo have grown up. As a young girl, she is a bit of a tomboy, and engages in all of the activities that the boys do. She is thrown out of her house by her parents when she becomes pregnant by Charlie, which forces her to grow up quickly. She seems to hold strong feelings for both of the Peaceful brothers.
The Colonel-represents upper class attitudes and power. The 'enemy' of working class people like the Peacefuls. Blackmails Charlie into joining up by threatening to throw them out of the cottage.
Sergeant Hanley – Hanley demonstrates all that is wrong with the outlook and attitudes of many people at war. He lacks empathy or sensitivity, and his bullying of Tommo becomes even worse when he realises that Tommo is underage. When Charlie addresses this with him, he is written up for subordination, rather than ceasing his behaviour.

Career Focus - Where could this take you?



*As a **journalist** I investigate, collect and present information as a news story or article featured in a newspapers, magazines, radio, television and the internet.*
I have to research and conduct interviews to find out background information.
I can specialise in an area such as sports, politics, travel etc.

Topic Links

This topic links to:
- Self expression and religious beliefs in RE.
- The World War One focus in History.
- Previous novel study in English in Year 6 and you will cover novels later in Year 8 and onwards.

Additional Resources

To further practise and develop you knowledge see:
- AQA guidance on responses: https://filestore.aqa.org.uk/textbooks/sample/gcse-english/AQA-8700-8702-COLLINS-SAMPLE-CORE.PDF

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Science

Our students will:

- develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics
- develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

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Year 7 Scientific Skills

- The learning outcomes for this topic are
  - to recall scientific knowledge from year 5 and 6
  - to understand how to carry out investigations safely
  - to be able to confidently use the scientific method to get valid results and be able to make conclusions

Keyword	Definition
Prediction	What you think will happen and why.
Hypothesis	An idea that can be tested using experiments.
Independent Variable	The variable that you change.
Dependent Variable	The variable that you measure (your results)
Control Variables	The variables that could influence the results so are kept the same.
Hazard	Is something that can cause harm to someone.
Risk Assessment	Identifies hazards, the harm they can do and how to minimise the risks.
Method	Step by step instructions how to carry out practical.
Conclusion	An explanation of what you found out
Evaluation	When you consider the quality of the data and how the investigation could be improved.
Accurate	When the data is close to the true value.
Precise	When the repeated data is similar (close to the mean).
Reproducible	Same results obtained by different people.
Anomaly	A result that doesn't fit the pattern.

Key Concepts

Laboratory Safety Rules

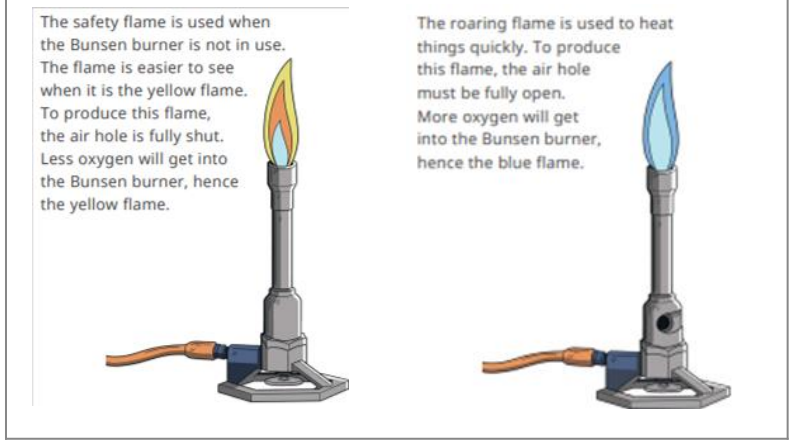
Safety is the number 1 priority when you are carrying out practical work in the science labs so there are some important safety rules to follow:

- Always wear eye protection during a practical.
- Carry out a practical while standing up.
- Do not eat or drink in the laboratory.
- Tie long hair back and tuck loose clothing in during practicals.
- If something is spilled or broken, tell the teacher.
- Ensure that the floor and work space is clear of obstacles.
- Light bunsen with splint on a safety flame.
- Stop immediately when asked to by the teacher.

What is STEM learning?

This year you will be carrying out project based learning that focuses on solving real life problems using Science, Technology, Engineering & Mathematics. You will develop important skills such as problem solving, creativity, team work, innovation, communication and digital literacy. STEM is expected to be one of the largest employers in the near future so this will help prepare you to be successful global citizens.

Using a Bunsen Burner



The Scientific Method

Step 1 - Observe and ask questions
When you ask a question about something that you observe: How, What, When, Who, Why, or Where?

Step 2 - Research
To help you find the best way to do things and ensure that you don't repeat mistakes from the past.

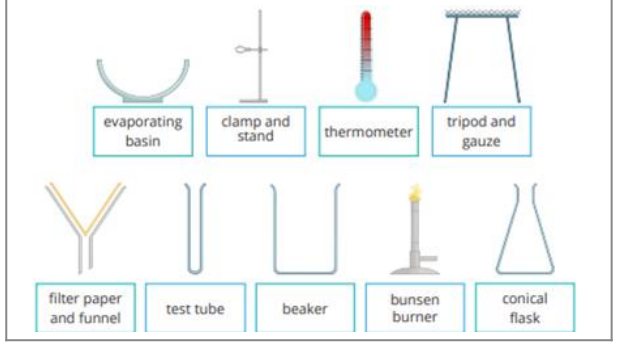
Step 3 - Construct a hypothesis
This a statement that you can test. Your evidence will allow you to either accept or reject the hypothesis.

Step 4 - Test the hypothesis
Plan experiments making sure you have clear independent, dependent and control variables. Then carry out experiment(s) to test the hypothesis and record data.

Step 5 - Analyse data and make conclusions
Organise data in ways to make it easier to understand (e.g. graphs) and check against hypothesis.

Step 6 - Share results
Results from experiments are shared with other scientists so they can evaluate the findings themselves.

Scientific Equipment

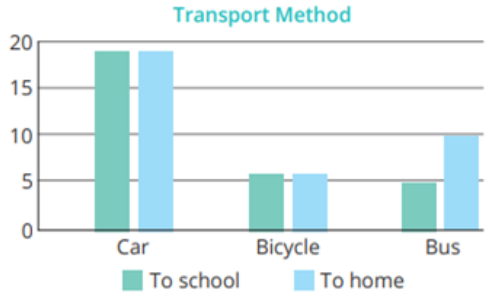


Year 7 Scientific Skills

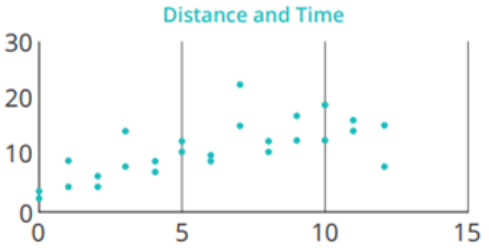
- The learning outcomes for this topic are
  - to recall scientific knowledge from year 5 and 6
  - to understand how to carry out investigations safely
  - to be able to confidently use the scientific method to get valid results and be able to make conclusions

Displaying Data - Graphs

Bar graph – used with categorical data.



Scatter graph – used with continuous data.



Retrieval Practice

Questions	Answers
What is a hypothesis?	A regular structure with no space between particles
Which variable do you change?	The independent variable
Which variable do you measure?	The dependent variable
Which variables do you keep the same?	The control variables
How is data usually displayed?	In tables and graphs (bar graph or scatter graph)
What is an anomalous result?	A result that doesn't fit the pattern of the other results
How is the mean calculated?	Repeat values added together then divided by number of repeats
What should a conclusion include?	A summary of whether your results do or do not support the hypothesis
What should an evaluation include?	An assessment of how the experiment went and how to improve it
What does STEM stand for?	Science, Technology, Engineering & Maths

Career Focus - Where could this take you?

I am a research scientist (life science). My job is mainly to plan experiments, conduct experiments and analyse results.
My main workplace is a laboratory where I can be part of a team researching a variety of areas such as genetics, microbiology, stem cells, biotechnology, neuroscience, physiology, plant science and much more.
To do a good job as a research scientist you need to have an inquisitive mind and enjoy planning and working on experiments.

Challenge Activities

1. Make flashcards for the definitions and retrieval practice questions.
2. Make a safety poster that shows other students how to stay safe in the science lab.
3. Research the different types of research that different research scientists carry out. Which fields do you find the most interesting?
4. Learn the different hazard symbols and what they mean.
5. Find out more about research scientists and what they do. What qualifications would you need for this career? What is the average salary?
6. Construct a fact file about the scientific method.
7. Plan an experiment. Remember to include the hypothesis, variables, method and results table.

Topic Links

This topic links to all scientific topics such as
- Cells
- Substances and particles
- Energy

We will also be practising how to
- Display data in tables and graphs
- Write a research article to communicate your findings

Additional Resources

To further practise and develop you knowledge see:
Educake - https://www.educake.co.uk/
BBC Bitesize - https://www.bbc.co.uk/bitesize/topics/zsg6m39
https://www.bbc.co.uk/bitesize/topics/zsg6m39/articles/z4pjdp3
YouTube - https://www.youtube.com/watch?v=yi0hwFDQTSQ

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MFL

Our students will:

- understand and respond to spoken and written language from a variety of authentic sources
- speak with increasing confidence, fluency and spontaneity, finding ways of communicating what they want to say, including through discussion and asking questions, and continually improving the accuracy of their pronunciation and intonation
- can write at varying length, for different purposes and audiences, using the variety of grammatical structures that they have learnt
- discover and develop an appreciation of a range of writing in the language studied.

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Year 7 Bonjour!

The aims of the sequence of learning are to ensure that all students:

- Can meet and greet in French
- Count to 31
- Give dates in French
- Spell using the French alphabet
- Understand key phonics sounds.
- Ask and answer simple questions in French.

Keywords - Questions

voice 21

French	English
Bonjour! Salut!	Hello! Hi!
Ça va?	How are you?
Comment t'appelles-tu?	What is your name?
Ça s'écrit comment?	How do you spell it?
À plus!	See you later!
Quel âge as-tu?	How old are you?
C'est quelle date aujourd'hui?	What date is it today?
C'est quand ton anniversaire?	When is your birthday/
Qu'est-ce que tu as dans ton sac?	What do you have in your bag?
Tu as une gomme?	Do you have a rubber?
C'est de quelle couleur?	What colour is it?

Key Concepts- Phonics


vélo


bise


Salut!


Ça va?

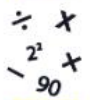

portable


araignée


serpent

intelligent

professeur


maths


fenêtre


musique


numéro un


chaud


eau


poisson

A ah	**B** bay	**C** say	**D** day	**E** ugh!
F eff	**G** zhey	**H** ash	**I** ee	**J** zhee
K ka	**L** el	**M** em	**N** en	**O** oh
P pay	**Q** koo	**R** err	**S** ess	**T** tay
U oo	**V** vay	**W** doo bl vay	**X** iks	**Y** ee-grec
Z zed				

Numbers

1	un	9	neuf	17	dix-sept	25	vingt-cinq
2	deux	10	dix	18	dix-huit	26	vingt-six
3	trois	11	onze	19	dix-neuf	27	vingt sept
4	quatre	12	douze	20	vingt	28	vingt huit
5	cinq	13	treize	21	vingt-et-un	29	vingt neuf
6	six	14	quatorze	22	vingt-deux	30	trente
7	sept	15	quinze	23	vingt-trois	31	trente-et-un
8	huit	16	seize	24	vingt-quatre		

Months and Days

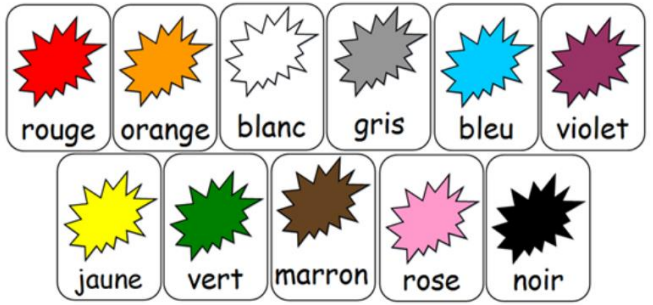
janvier
février
mars
avril
mai
juin

juillet
août
septembre
octobre
novembre
décembre

lundi	Monday
mardi	Tuesday
mercredi	Wednesday
jeudi	Thursday
vendredi	Friday
samedi	Saturday
dimanche	Sunday

Months and days **do not** have a **capital letter** in French!

Colours



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Year 7 Bonjour!

The aims of the sequence of learning are to ensure that all students:

- Can meet and greet in French
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- Give dates in French
- Spell using the French alphabet
- Understand key phonics sounds.
- Ask and answer simple questions in French.

Retrieval Practice

Questions	Answers
Bonjour! Salut!	Bonjour! Salut!
Ça va?	Oui, ça va bien merci. Comme ci comme ça. Non, ça ne vas pas
Comment t'appelles-tu?	Je m'appelle **Clara.**
Ça s'ecrit comment?	**Say- el-ah-air-ah**
À plus!	À plus / au revoir.
Quel âge as-tu?	J'ai **douze** ans.
C'est quelle date aujourd'hui?	Aujourd'hui c'est **lundi** le **six octobre.**
C'est quand ton anniversaire?	Mon anniversaire c'est le **dix janvier.**
Qu'est-ce que tu as dans ton sac?	J'ai **un stylo** et **deux crayons.**
Tu as **une gomme**?	Non, je n'ai pas de **gomme.**
C'est de quelle couleur?	C'est **bleu**!

Career Focus - Where could this take you?

I am a primary school teacher. We teach languages in KS2, so it is very important that I can speak a Language. It doesn't matter which language I speak because learning a language when children are young helps to develop their cognitive skills. This helps to develop their brain and can improve their memory.

Challenge Activities

1. Make flashcards for the questions and answers.
2. Use Languagenut to practise numbers, days, months and key phonic sounds.
3. Research a famous French person. Make a fact file. What do they do? Where do they live? Why are they famous?

Topic Links

This topic links to other French topics such as

- Introducing yourself and your family

This topic also links to :

- Numeracy
- Geography
- Literacy

Additional Resources

Languagenut – www.languagenut.com

Active Learn - www.pearsonactivelearn.com

You will be given your username and password by your teacher.

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Humanities

Our students will:

- know and understand the history of these islands as a coherent, chronological narrative, from the earliest times to the present day: how people's lives have shaped this nation and how Britain has influenced and been influenced by the wider world
- understand historical concepts such as continuity and change, cause and consequence, similarity, difference and significance, and use them to make connections, draw contrasts, analyse trends, frame historically-valid questions and create their own structured accounts, including written narratives and analyses
- understand the methods of historical enquiry, including how evidence is used rigorously to make historical claims, and discern how and why contrasting arguments and interpretations of the past have been constructed
- develop contextual knowledge of the location of globally significant places – both terrestrial and marine – including their defining physical and human characteristics and how these provide a geographical context for understanding the actions of processes
- understand the processes that give rise to key physical and human geographical features of the world, how these are interdependent and how they bring about spatial variation and change over time

Year 7 What is History?

The learning outcomes for this topic are:

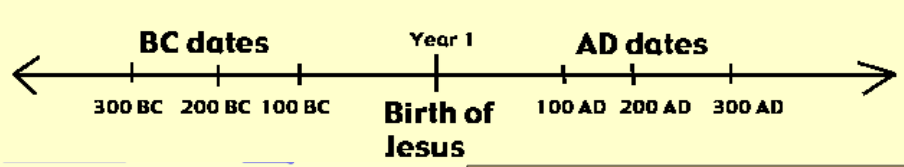
Enquiry Question - What is History?

- To identify some key terminology used by Historians.
- To explore the concept of chronology with a focus on change and continuity.
- To explain how a Historian uses different types of evidence.

Keyword	Definition
History	A study of the past including people and events.
Historian	Someone who writes about or studies History.
Chronology	Arranging events or dates in the order they took place.
Timeline	Represents dates and events in chronological order.
Change	How something changes over a length of time and as a result of an event or action.
Continuity	How something stays the same over a length of time.
Sources	**Primary Source** – document or object created during the time period of study. **Secondary Source** – an account or interpretation of events not written during the time period.
Evidence	Various sources relating to an event, person or period of time to help understand what happened in the past.
Investigation	To research through close examination and questioning.
Analysis	A close study of separate parts of something; examine and explain.
Reliability	Extent we can trust or believe source to tell the truth.
Judgement	To make a decision carefully, after studying and comparing all evidence that is available.
Forensic	A kind of science which looks at evidence like fingerprints, blood, hair and DNA to show the truth about what happened in a situation.
	Unlock the last keyword of our topic through your investigation work in class.

Key Concepts

History: Greek 'historia' – learning or knowing by inquiry; Latin – narrative, story of past events



How do we measure time?
Second, minute, hour, day, week, month, year, decade, century, millennium, BC, AD, period, era:

E.g. Prehistory, Iron Age, Romans, Anglo-Saxons, Normans, Middle Ages.

100 - 199	2nd century
200 - 299	3rd century
300 - 399	4th century

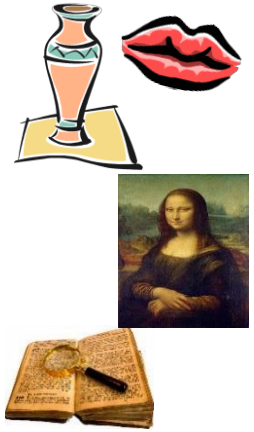
Have you spotted the pattern yet? Have a close look at the numbers that are underlined - what do you notice?

REMEMBER! Look at the first number(s) of the year and ADD ONE to get the century (c)
e.g.
2018 = 21st c **9**68 = 10th c **18**15 = 19th c **19**05 = 20th c 56 = 1st c

CHRONOLOGY – arrangement of anything into time / date order

How do Historians use sources?
What are the limitations of source? - What does the source not tell us?
Can we trust it? - Is it reliable?
Is it useful? - Does it help us understand a topic more?
What is the provenance?
- Nature: What type of source is it?
- Origin: Who made / wrote it and when?
- Purpose: Why was it made / audience?

Types of source can include:
Oral (spoken) Written Pictures Artefacts



A Chronological Timeline of what we will study in Year 7:

Prehistory | Iron Age | Romans | Anglo-Saxons | Vikings | Normans | Middle Ages







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Year 7 Grauballe Man

Enquiry Question - What happened to Grauballe Man?

- To develop investigation skills using sources as evidence.
- To explain how scientific evidence can help in a historical enquiry.
- To distinguish the importance of what Historical evidence can tell us about the past.
- To reach a judgement of what happened to Grauballe Man using evidence to support.

Retrieval Practice

Questions:	Answers:
What is a timeline and why is it useful to a Historian?	
Name **three** types of sources that Historians can use:	
What makes a good detective? Tell me **four** skills	
From the evidence in class: What date was there a body found on Nebelgard Fen?	
What were your first impressions of the body?	
What is the name of the Police Officer leading our investigation?	
Who did Birgit Svenson think the body was and why?	
What did we discover about Grauballe Man from the forensic evidence?	
What did the Historians tell us about people in the Iron Age?	
What happened to Grauballe Man? Support with evidence.	

Career Focus - Where could this take you?

I am a Detective: My job is to collect intelligence and evidence from a range of sources, including crime reports, victims, witnesses and suspects. I am responsible for recording and retaining evidence in a way that makes it useful in places like Court, so that it helps bring offenders to justice. I often deal with serious and complex investigations and crimes, uncovering the truth and analysing evidence on cases.

Challenge Activities

1. Create a timeline of your life: You may include pictures and photographs. The timeline MUST be in CHRONOLOGICAL order. Remember, it is your personal history so include events that are important to you.
2. Create a personal history fact-file detailing important events within your past. Try and complete it in CHRONOLOGICAL order.
3. Design a board game based around investigating a crime. This should include clues, questions for players to ask, evidence to gather along the way and then a puzzle to solve to find the winner.

Topic Links

This topic links to other humanities topics such as:

- The Romans
- Different religions

We will also be practicing how to

- Make inferences from sources
- Extended writing

Additional Resources

Personal Timeline Example:
https://www.pinterest.com/pin/463941199105531878/

History:
https://www.historytoday.com/archive/head-head/what-history

Year 7 - About the UK

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The learning outcomes for this topic are

- Which countries and nations make up the British Isles
- The UK has several mountain ranges. Where? And what are their names?
- Name at least six of the UK's main rivers, and describe where they are.
- The climate of the UK Describe the patterns.

Keyword	Definition
Asylum seeker	A person who flees to another country for safety and asks for permission to stay there Economic migrant – people who move to a new place to find work and improve their standard of living
Emigrant	A person who leaves his or her country to settle in another country
Immigrant	A person who moves here from another country, to live
Leeward	Sheltered from the wind
North Atlantic Drift	A warm current in the Atlantic Ocean; it keeps the weather on the west coast of Britain mild in winter
Population	The number of people living in a place
Population Density	The average number of people living in a place, per square kilometer.
Rain Shadow	The dry area on the leeward side of a hill
Refugee	A person who has been forced to flee from danger (for example war)
Region	An area of the world or a country having definable characteristics but not always fixed boundaries
Rural area	Countryside, where people live on farms and in small villages
Urban area	A built up area (town or city)
Windward	Facing into the wind

Key Concepts

The UK

The UK is divided into 2 countries the UK and the Republic of Ireland.

The UK is made up of 4 nations:
England
Scotland
Wales
Northern Ireland

UK Population

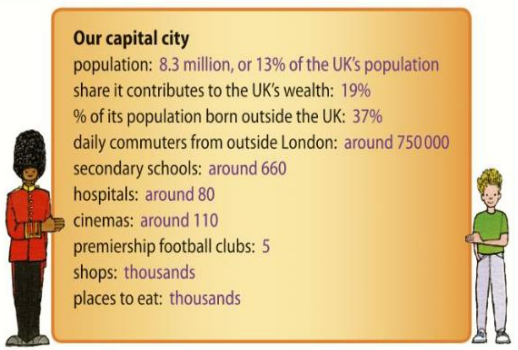
19% of the UK population live in rural areas while 81% live in urban area

The UK's 10 largest cities

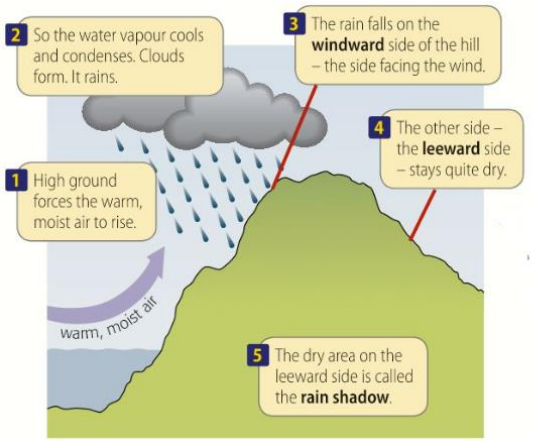
	Name	Population (millions)
1	London	8.84
2	Birmingham	1.14
3	Leeds	0.78
4	Glasgow	0.62
5	Sheffield	0.58
6	Manchester	0.55
7	Bradford	0.54
8	Edinburgh	0.50
9	Liverpool	0.49
10	Bristol	0.46

London

South West of the UK, developed and named Londinium by the Romans



Why is it wetter in the west of the UK?



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Year 7 - About the UK

The learning outcomes for this topic are

- Which parts of the UK are the most and least crowded?
- The UK's largest cities and their location.
- To be able to give at least four facts about the UK's economy.
- Give at least four geographical facts about London, the UK's capital city.

Retrieval Practice

Questions
How many countries are in the British Isles? Name them
Which parts of the UK receive the most rainfall and why?
Why is colder as you go up a mountain?
What is an immigrant?
Why might people move to the UK from other countries?
What is meant by the term population density?
Which areas of the UK are most populated and why?
How did London get its name?
What is the population of London?
Why is London a multicultural and diverse city?
Name and locate 2 upland areas of the Uk
Name and locate 2 rivers in the UK

Career Focus - Where could this take you?

I am a meteorologist. My job is to study weather patterns and climate change, improve computer forecasting models, use research to predict floods and droughts and study how the weather affects the spread of pollution or disease. As a forecaster I collect data from satellite images, radar, remote sensors and weather stations, measure air pressure, wind, temperature and humidity forecast the weather by analysing information and using computer programmes and then give weather information and reports to customers!

Challenge Activities

1. Create a collage which highlights some of the UK's physical features
2. Find out in the news, in the UK, a topic which is to do with geography. Write your own report on this subject and set it out like a newspaper front page
3. Design a mascot to represent the UK. Write a paragraph to explain why you have chosen that design. Focus on historical figures or traditions from the UK
4. Design a quiz based on the UK. Include at least 10 questions plus their answers
5. Create top trumps cards for 6 cities in the UK - include size, population, age, height above sea level and distance from London
6. Create an advert (on paper or online) encouraging people to visit London. You must include at least 4 tourist destinations

Topic Links

This topic links to other humanities topics such as:

- The Romans
- Population
- Weather and climate

We will also be practising how to

- Analyse data from maps and graphs

Additional Resources

BBC Bitesize:
https://www.bbc.co.uk/bitesize/topics/zyhp34j/articles/z4v3jhv

YouTube:
https://www.youtube.com/watch?v=V3oDgoM4bpM
https://www.youtube.com/watch?v=oOvm4c8O73E

Year 7 What is Religion?

The learning outcomes for this topic are:

- Explain the link between religion and spirituality
- Explain how learning about religion and other worldviews can help individuals and society
- Assess the value of religious belief and teaching

Keyword	Definition
Religion	A set of beliefs about the cause and purpose of the universe.
Spirituality	An individual practice giving a person a sense of peace and purpose.
Community	A group of people in a place or a group of people who share the same beliefs, interests and practices
Values	The things that are important to us
Multicultural Societies	People of different races, ethnicities, and nationalities living together in the same community
The Golden Rule	A common belief in all religious to treat one another with respect, as you would like to be treated yourself
Media	The main means of mass communication (broadcasting, publishing, and the internet)
Stereotyping	The act of judging a person or group of people because of the actions or behaviours of others that are similar.
Qur'an	Muslim Holy Book
Islamophobia	The fear of, hatred of, or prejudice against the religion of Islam or Muslims in general

Key Concepts - Why do we do RE?

There are more than 7 billion people in the world. More than 6 billion of them say they belong to a religion.

RE teaches you how to think about your own beliefs for yourself. It provokes you to be reasonable about beliefs.

RE helps people know why they are atheist

Different faiths give interesting ideas about the meaning of life. I'm open minded.

If you don't know anything about religion, then you won't be able to understand literature, or politics, or history, or art. They are all connected in some ways.

There are six great world religions with hundreds or thousands or millions of followers in the UK. We need to know about these for pretty much any job I do.

Loads of young people can't make up their minds about God, life, death, beliefs and what they all mean. RE can help you do that.

Religious leaders and prophets – Jesus, or Buddha – are some of the greatest people ever. We can learn lots from them today.

In this country, nearly three quarters of the population say they belong to a religion. These are the people I live with and will work with. I need to know what makes them tick.

The Six World Religions

Christianity (2.2 billion followers)

Islam (1.6 billion followers)

Hinduism (1 billion followers)

Buddhism (376 million followers)

Sikhism (23 million followers)

Judaism (14 million followers)

The 6 main reasons why Britain has become a multi-cultural Society:

- Invasion
- Citizenship of a country that was formerly part of the British Empire, allowing them the freedom to settle in Britain
- Escape from political persecution in their native country
- Freedom to practise their religion
- Economic opportunities e.g. jobs
- Encouragement from the UK government, for example after WWII

What are some of the things that Luqman taught?

- Respect others
- Don't shout
- Tell others to be good
- Be polite
  Be peaceful with everyone
- Don't show off
  Be calm
- Be patient

Year 7 What is Religion?

The learning outcomes for this topic are:

- Identify the Golden Rule of all religions
- Explain why respect is important in society
- Determine what Islamophobia is and how Muslims responded to 9/11 Terror Attacks.
- Explain how Luqmaan's advice guides Muslims to lead a good life

Retrieval Practice

Questions
Why do we study RE?
There isn't a true British race because centuries of immigration means that all Britons are of mixed blood" Do you agree? Why/why not?
How can we reduce prejudice?
What did Luqmaan teach?
Why does Islamophobia exist?
How can we be better people?
Why is Britain Multicultural?

Career Focus - Where could this take you?

I am a police officer. The RE skills I developed include tolerance and respect; important qualities in police work

Challenge Activities

Create a charter for religious respect. Write ten points that will build up harmony between people from different religions.
If all the religious life of your community was banned (e.g. festivals, worship, charitable activity), then how would people feel? What would happen? Write down your ideas.
If you were elected Mayor... what would you do for the city if they were in charge, to promote good relations between different communities. Write out a speech.
Visit a place of worship of you can. If there are 2 or more places of worship that you can visit, do so. Take photos of the places of worship. These photos could be of the whole building, a part which puzzles you or a detail such as a notice board.
If a visit is not possible, then a virtual tour of some buildings in Yorkshire are possible here.

- A Synagogue in Leeds: http://www.uhcleeds.com/
- A Leeds Gurdwara: http://www.gnnsjleeds.com/
- Mosque in Huddersfield or Bradford: http://www.hanfia.org/

Screen shot pictures. These pictures could be of the whole building, a part which puzzles you or a detail such as a notice board.

Topic Links

This topic links to other RE topics such as

- Christian Practices
- Judaism
- Islam

We will also be practising how to

- Argue a point and practise our Voice 21
- Participate a debate
- Write PEE sentences

Additional Resources

http://www.youtube.com/watch?v=sbcmPe0z3Sc
https://census.gov.uk/

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Computing

Our students will:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology

Year 7 : 7.1 : E-Safety

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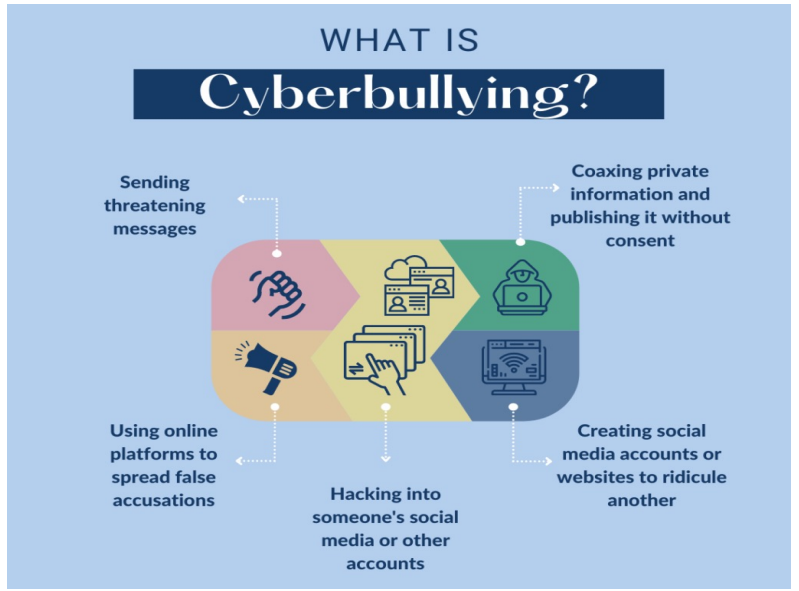
The aims of the sequence of learning are to ensure that all students:

- Describe what cyber bullying is and how to deal with it
- Describe how to safely deal with a some different situations that you may experience when using the internet
- Describe the dangers of using technology
- Evaluate an e-safety resource aimed at primary school students

Keyword	Definition
E-Safety	The safe and responsible use of technology
Cyber bullying	The use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature
Pop-up message	A message that appears on your browser or desktop designed to grab the users attention
Password	A combination of characters that allows access to a computer system or service
Error Message	Information displayed on a computer system when an unexpected problem occurs
Smart Devices	An electronic gadget that is able to connect, share and interact with its user and other smart devices
Hacking	The gaining of unauthorised access to data in a system or computer system

Key Concepts



STOP

- Take time out before getting involved, and don't share or like negative comments
- Try and get an overview of what's really going on
- Check the community guidelines for the site you're on

SUPPORT

- Give the person being bullied a supportive message to let them know they're not alone
- Encourage them to talk to someone they can trust
- Give the person being bullied a positive distraction from the situation

SPEAK

- Ask an adult or friend that you can trust for advice
- Use the report button on the social platform it's happening on
- Speak to one of the charities set up to help with situations like this, such as Childline

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Year 7 : 7.1 : E-Safety

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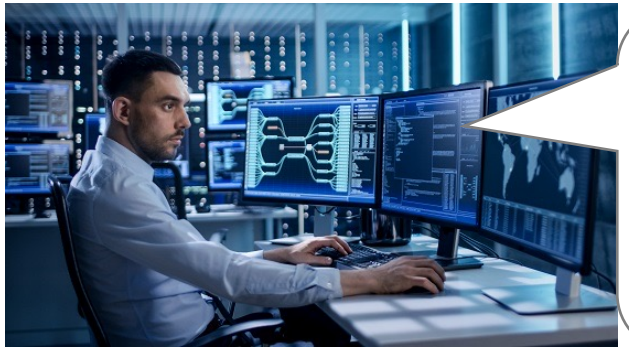
- **Describe the dangers of using technology**
- **Evaluate an e-safety resource aimed at primary school students**

Retrieval Practice

Questions	Answers
What does the term 'Cyberbullying' mean?	The use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature.
Why should you not post your real name online?	It becomes possible to find out some personal details about you, such as, your home address, age and telephone number.
Why should you always update your virus checker when asked to do so?	Your computer will not be protected against the newest threats. This will leave your computer vulnerable to attacks.
What are the dangers of using free public Wi-Fi?	As you are connecting to an unsecure internet connection, your computer will be easier to hack. Hackers can access every piece of information your sending out on the internet and also access the files on that computer, and any other connected devices.
What would you do in the following situation? You click on a link that loads up a website with unsuitable and inappropriate content.	Switch my monitor off and tell my parent or carer – they help you to block the website to stop it from loading up again.
What advice would you give to somebody to stay safe when playing online games?	Disable the chat feature, if that's not possible, only play and talk to people you know in real life and play where your parents can hear the conversations.
What are the dangers of using technology in our everyday life?	Although technology can be used to help make our lives easier, it can result in a lack of privacy, increased chances of your devices being hacked and an over-reliance of technology making it difficult to do things that have become automated or not required to do manually.

Career Focus - Where could this take you?



I am a **cyber security engineer** and it is my job to identify any threats or vulnerabilities in systems or software. I have to be confident in trouble shooting problems and testing systems.

Challenge Activities

1. Create a poster on MS PowerPoint that includes the following details: definition of cyberbullying, advice on what you should do if somebody was being cyberbullied and what you think we can do in the future to help stop cyberbullying in our school.
2. Do you agree or disagree with the following statement? You must back up your answer with reasons and examples. "People under the age of 14 should not be allowed to use the internet without adult supervision".
3. Create a short vlog about which new technologies you think could create safety issues for children in the future? Give advice on how you could tackle these problems.

Topic Links

This topic links to:

- Computing Curriculum: Understand a range of ways to use technology safely, respectfully, responsibly and securely
- English and RSE (being a responsible citizen and using language appropriately)

Additional Resources

To further practise and develop your knowledge see:

- www.childline.org.uk
- www.thinkuknow.co.uk
- stopcyberbullying.org

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CAPE

Our students will:

- produce creative work, exploring their ideas and recording their experiences
- become proficient in drawing, painting, sculpture and other art, craft and design techniques
- evaluate and analyse creative works using the language of art, craft and design
- know about great artists, craft makers and designers, and understand the historical and
- cultural development of their art forms.

- develop competence to excel in a broad range of physical activities
  are physically active for sustained periods of time
  engage in competitive sports and activities
- lead healthy, active lives.

Year 7 Art Basic Skills

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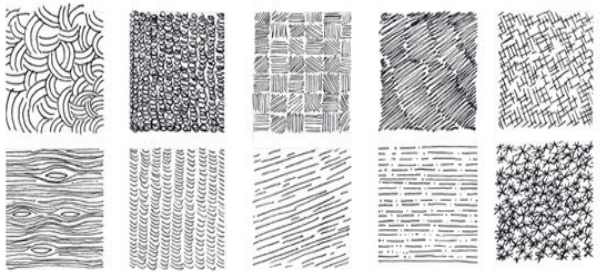
The aims of the sequence of learning are to ensure that all students:

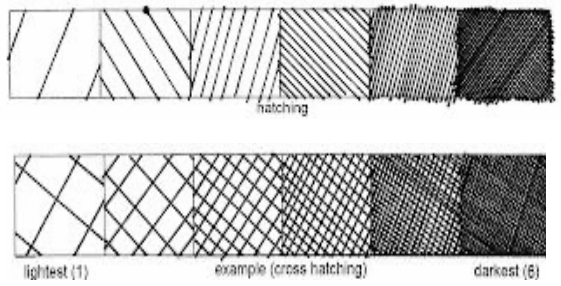
- Describe multiple methods for mark making
- Describe complementary colours
- Synthesise a 3D drawing by employing mark making techniques

Keyword	Definition
Colour	What you see when light reflects off something. Red, yellow and blue are primary colours
Line	A mark which can be long, short, wiggly, straight etc
Tone	How light or dark something is
Texture	How something looks or feels, e.g. rough or smooth
Pattern	A symbol or shape that is repeated
Shape	A 2D area which is enclosed by a line, e.g. a triangle
Form	Something which has 3 dimensions, e.g. a cube, sphere or sculpture

Key Concepts

Mark Making describes the different lines, dots, marks, patters we create in an artwork. It can be loose and gestural or controlled and neat. **Mark Making** can be used to create texture in an artwork.



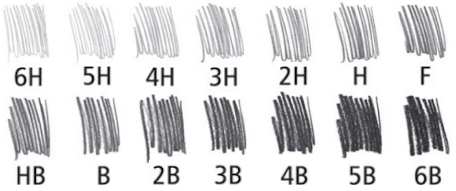


Grades of Pencils

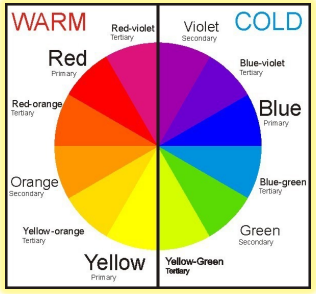
Pencils come in different grades, the

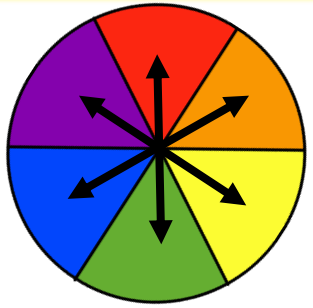
softer the pencil, the darker the tone.

H = Hard B = Black



In art the most useful pencils for shading are B, 2B and 4B. If your pencil has no grade it is likely to be HB.



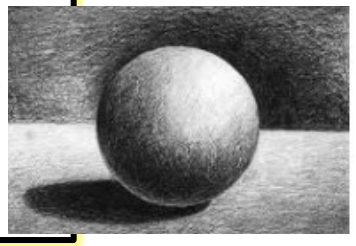


Making something look 3D

To prevent objects looking flat, a range of tonal shading is essential to make them appear 3D.

Shading straight across a surface will make an item appear flat.

Shading with the form will help to enhance the 3D surface.



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Year 7 Art Basic Skills

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- **Describe multiple methods for mark making**
- **Describe complementary colours**
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Retrieval Practice

Questions	Answers
What are complementary colours	These are colours that are found opposite each other on the colour wheel. Complementary colours are pairs of colours that contrast with each other more than any other colour, and when placed side-by-side make each other look brighter.
What are primary colours?	Red, blue and tallow. These are colours that cannot be made by mixing other colours together but are used to make all other colours.
What are secondary colours?	Green, orange and purple. Secondary colours are made by mixing two primary colours together.
What are tertiary colours?	These are colours created by mixing a primary and a secondary colour together.
What are harmonious colours?	These are colours that are next to each other on the colour wheel.
What is tint?	When you add white to a colour to make it lighter
What is shade?	When you add black to a colour to make it darker.
What is a primary source?	Observational drawing: drawing something directly from first-hand experience. Drawing from something real that is in front of you.
What is a secondary source?	Observational drawing: drawing from something that was produced by another person

Career Focus - Where could this take you?

I am a **magazine art director** and my job is to put together the illustrations and photographs for my magazine to ensure that the articles look interesting and people purchase our magazine

Challenge Activities

1. Draw an object using your mark making techniques to make it appear to be 3D.

2. Create a complementary colour wheel

Topic Links

This topic links to:

- Maths – ratios of mixing paints to make various colours
- Science – accurate observation skills

Additional Resources

To further practise and develop you knowledge see:

Here you will find why art education is important from artists, young people and major cultural figures.

Year 7 Basic Skills Dance by Chance Cunningham and Cage

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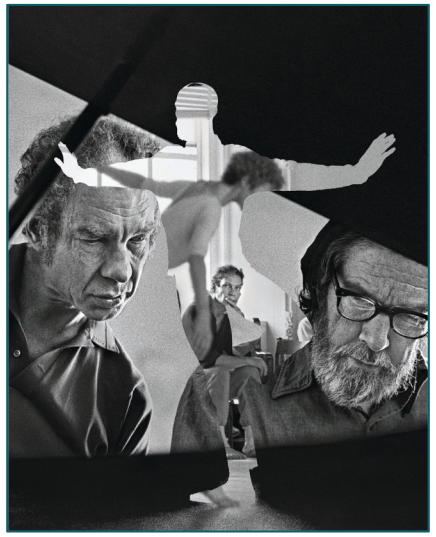
The aims of the sequence of learning are to ensure that all students:

- Define and spell key elements apply key elements in performance
- Describe elements in a performance
- Apply dance skills and techniques
- perform with timing, extension and fluency.
- develop dance by using choreographic devices.
- Demonstrate leadership skills

Keyword	Definition
Timing	Moving to the beat of the movement
Choreographic Intention	What it makes the audience think, see and feel.
Gesture	A movement that doesn't transfer weight.
Dynamics	The quality of the movement.
Unison	All together at the same time
Cannon	One after the other.
Speed	How fast or slow a movement is.
Confidence	Showing you know what you are doing and where you should be
Stamina	The ability to keep energy going over time
Flexibility	The range of movement around a joint
Strength	A combination of maximum speed and power
Coordination	The ability to move two or more body parts at the same time to create a movement
Energy	Performing all movements with as much effort as possible
Power	Is a combination of using speed and strength
Reaction time	The time it takes for you to respond to a stimulus
Accuracy	Making sure movements are the way they were taught
Facial Expression	Showing the mood of the character
Dynamics	The quality of a movement
Speed	How fast or slow a movement is

Key Concepts



Merce Cunningham

Cunningham technique focuses on the 5 movements of the back; tilt, twist, curve, arch and straight. He also invented chance choreography which used random methods to determine the movements, staging and music.

- mirroring – this technique requires dancers to do the same travel, jump, shape or balance at exactly the same time
- leading and following – these movements require one dancer to lead and the other partners to follow
- meeting, avoiding or passing by – these movements require dancers to travel towards each other and then move right or left to avoid and pass
- meeting and parting – these movements require dancers to meet, turn and travel away
- canon – this technique requires dancers to take it in turns to perform a movement that is then identically copied and performed by others
- unison – this technique requires dancers to move at the same time as each other
- contrasting – this technique requires dance partners to perform contrasting movements to each other

Year 7 Basic Skills Dance by Chance Cunningham and Cage

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- perform with timing, extension and fluency.
- develop dance by using choreographic devices.
- Demonstrate leadership skills

Retrieval Practice

Questions	Answers
What are performance skills?	Performance skills are those used during a performance they set dancing apart from mechanical movement they draw the audience's attention and helps to show mood and meaning.
What are physical skills?	A Physical skill is a skill that can be developed over time
What is balance?	The ability to maintain a centre of mass over a base whilst stationary (Static) or during movement (dynamic)
What are the six basic actions?	Travel, Turn, Jump, Stillness, Transfer of weight and Gesture.
What is focus?	Where the dancer looks: into space; at the audience; at another dancer or a body part

Career Focus - Where could this take you?

I am a **Personal Trainer** and it is my job to work with people on their physical skills and abilities. I designed workout routines and support clients in achieving their goals and improving their performance.

Challenge Activities

Interview and examples of work

An interview with Cunningham and Cage.

Topic Links

This topic links to:

- Drama Performance skills
- PE - Physical skills
- English - Understanding terminology and verbs.
- Maths - Problem solving

Additional Resources

To further practise and develop you knowledge see:

- https://www.bgsperformingarts.com/drama.html
- http://www.kneehigh.co.uk/page/about_kneehigh.php
- https://www.bbc.com/bitesize/subjects/zbckjxs

Year 7 Drama and Storytelling

The aims of the sequence of learning are to ensure that all students:

- **develop knowledge of what Drama Elements mean.**
- **develop drama technique and skills.**
- **Identify and perform drama**

Keyword	
Storytelling	Gesture
Still image	Projection
Narration	Performance
Body Language	Volume
Facial expression	Timing
Characterisation	Pause
Space	Pace
Levels	Posture
Improvisation	Hot-Seating

Key Concepts

Thinking Questions

- How am I showing my character?
- What is my body language?
- How is it different to my normal?
- What is my character feeling?
- Do my facial expressions match this?
- What is my posture like?
- How do I walk? What is my gait like?
- How do I react to the other characters?
- How close do I stand next to others

Techniques:

Projection (Speaking loud enough for the audience to hear you)
Characterisation (Making and being in character that is different to yourself)
Posture (How you stand and how that is different to you normally)
Narration (Used in the art of storytelling. Its purpose is to tell stories. Narration can be factual or fictional)

A good devised performance ...

Will have a range of different believable characters. It will use a set scenario or one you have made up. The audience will be able to understand what is happening and will be engaged by the action and the storyline.

STORYTELLING DRAMA

You will be developing your knowledge and understanding of DRAMA, STORYTELLING, DEVISING and CHARACTERISATION. These are key drama skills that you will need. We will be creating MYTHICAL characters and creating improvised performances where good characters overpower evil forces to right wrongs.

Assessment

You will take part in several peer and self assessment tasks over the project, as well as your teacher assessment. receiving feedback from your teacher.
Your assessment for this Topic will be based on creating characters and devising performances, before evaluating them.

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Year 7 Drama and Storytelling

The aims of the sequence of learning are to ensure that all students:

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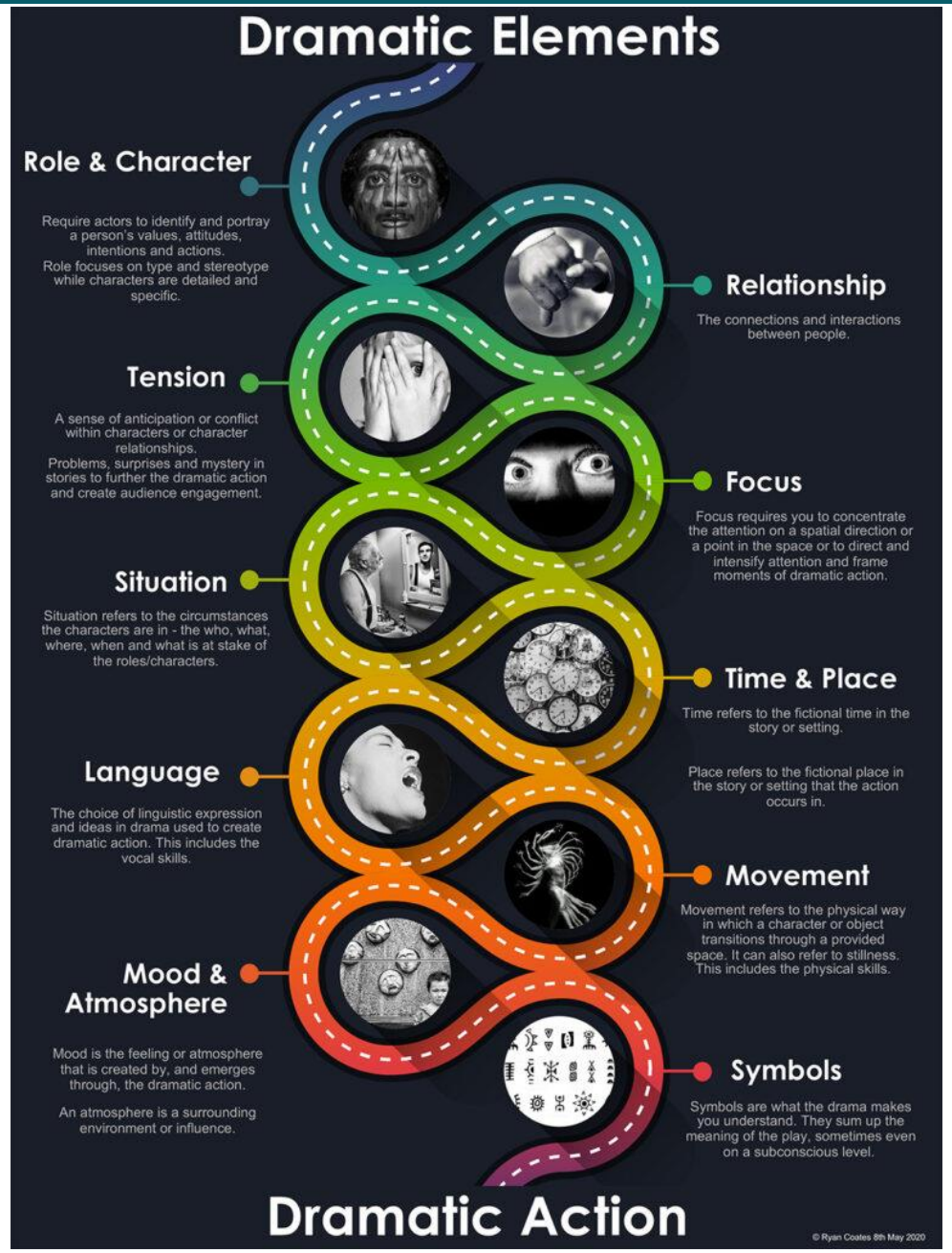
- **Identify and perform drama**



Career Focus - Where could this take you?

I am a Physical theatre performer. Knowledge of different movement traditions, such as mime and clowning is very important. Being able to utilize your facial expressions, body language, posture, spatial awareness, and physicality to tell a story is key to engaging the audience.

Challenge Activities

Write a short 50-100 word description of a lesson or Drama activity you are doing in school. Are you learning a new skill? What is it? How will you learn this skill? Or are you developing a skill you already have to make it better? Which one? How?

Prove that you took part in this activity. You could film yourself doing a version at home, or write up a step-by-step list of all of the things you did.

Write 200 words which explain what you have learnt by taking part in and doing the lesson and how your interests, knowledge and skills have developed. Be specific about your skills.

Topic Links

Dance
Music
English
History

Additional Resources

If you want to do more and extend yourself in Drama…Explore the Arts as a participant

Watch to learn more about tableau/still-image

https://youtu.be/YfNmlY1-t5k

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Year 7 Food Tech

The aims of the sequence of learning are to ensure that all students:

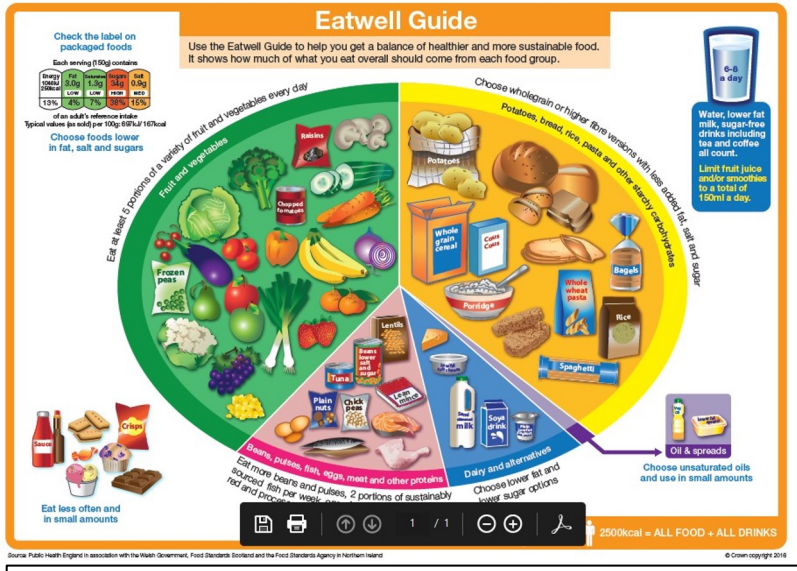
- to be able to name the key nutrients, sources and functions
- to acquire and demonstrate a range of food skills and techniques
- to be able to acquire and demonstrate the principles of food hygiene and safety
- to be able to identify how and why people make different food and drink choices
- to acquire and apply a knowledge and understanding of food science;

Keyword	Definition
Weighing scales	A tool used to accurately measure the weight/mass of ingredients
Knife	A sharp tool used for cutting food. Different types of knives have different uses, e.g. bread knife, fish knife
Chopping board	Board used for cutting food on to protect work surfaces. Generally made from glass, plastic or wood
Saucepan	A larger pan used for boiling water or making sauces
Wooden spoon	Used for stirring hot food as the material insulates the heat well
Tablespoon	A measure of 15 millilitres
Teaspoon	A measure of 5 millilitres
Dessert spoon	A spoon midway in size between a teaspoon and a tablespoon
Grater	A metal tool used for grating food into much smaller pieces
Baking tray	A metal or Pyrex tray used in the oven to cook food on
Cooling rack	A wire rack used to cool food, often baking
Peeler	Tool used for removing the skin/peel from a food item, usually a fruit or vegetable
Spatula	A broad, flat tool used for mixing or spreading
Nutrient	a substance that provides nourishment essential for the maintenance of life and for growth.
Healthy	in a good physical or mental condition; in good health.

Key Concepts

Food skill	Food skill	Food skill
Bake	Fry and sauté	Portion / divide
Beat	Glaze and coat	Prove
Blitz, puree and blend	Grate	Roast
Casserole	Grill	Roll-out
Chill	Juice	Rub-in

Core		Knead		Sift	
Cream		Layer		Snip	
Crush		Mash		Spread	
Cut out		Measure		Stir-try	
Cut, chop, slice, dice and trim		Melt, simmer and boil		Weigh	
Decorate and garnish		Microwave		Whisk	
Drain		Mix, stir and combine		Zest	



The 4C's Concept

By practicing the four Cs of food hygiene **cross-contamination, cleaning, cooking and chilling** those working with food can avoid food poisoning and other illnesses.

COOKING CONVERSION CHART

Measurement

CUP	ONCES	MILLILITERS	TABLESPOONS
8 cup	64 oz	1895 ml	128
6 cup	48 oz	1420 ml	96
5 cup	40 oz	1180 ml	80
4 cup	32 oz	960 ml	64
2 cup	16 oz	480 ml	32
1 cup	8 oz	240 ml	16
3/4 cup	6 oz	177 ml	12
2/3 cup	5 oz	158 ml	11
1/2 cup	4 oz	118 ml	8
3/8 cup	3 oz	90 ml	6
1/3 cup	2.5 oz	79 ml	5.5
1/4 cup	2 oz	59 ml	4
1/8 cup	1 oz	30 ml	3
1/16 cup	1/2 oz	15 ml	1

Temperature

FAHRENHEIT	CELSIUS
100 °F	37 °C
150 °F	65 °C
200 °F	93 °C
250 °F	121 °C
300 °F	150 °C
325 °F	160 °C
350 °F	180 °C
375 °F	190 °C
400 °F	200 °C
425 °F	220 °C
450 °F	230 °C
500 °F	260 °C
525 °F	274 °C
550 °F	288 °C

Weight

IMPERIAL	METRIC
1/2 oz	15 g
1 oz	29 g
2 oz	57 g
3 oz	85 g
4 oz	113 g
5 oz	141 g
6 oz	170 g
8 oz	227 g
10 oz	283 g
12 oz	340 g
13 oz	369 g
14 oz	397 g
15 oz	425 g
1 lb	453 g

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Year 7 Food Tech

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- to acquire and apply a knowledge and understanding of food science;

Retrieval Practice

Questions	Answers
What are 8 tipcs for healthy eating?	Base your meals on higher fibre starchy carbohydrates. Eat lots of fruit and veg. Eat more fish, including a portion of oily fish. Cut down on saturated fat and sugar. Eat less salt: no more than 6g a day for adults. Get active and be a healthy weight. Do not get thirsty. Do not skip breakfast
Why is weighing and measuring important?	Weighing and Measuring For good results in most recipes, accurate weighing and measuring is essential. When you are baking with flour, sugar and liquids, you must measure accurately or your cooking will be spoiled. If you weigh out too much sugar or too little raising agent, your cakes would not rise or you could spoil the taste and/or texture. Food can be weighed in Grams (g) and there are 1000g in a Kilogram (kg). Liquid is measured in Millilitres (ml) or litres
What are the most important health and safety and personal hygiene rules?	Be aware of sharp equipment such as knives, peelers and graters- store them carefully and use the bridge hold and claw grip when chopping. Take care with hot equipment and food/ liquids- turn pan handles in, always use oven gloves and avoid splashes when stirring or draining foods. Wipe up spills quickly so you do not slip over Be aware of others in the kitchen Report any accidents to the teacher Tie hair back Wash your hands

Career Focus - Where could this take you?

My job is **food technologist** and I study foods and their nutritional content. I use laboratory skills and techniques to identify nutrients and calorie content of foods.

Challenge Activities

Try some of these recipes at home
Follow the links

Energy Bar

Home made burgers

Chapatti recipe

For Further 30 minute recipes

Food skills are acquired, developed and secured over time

.

Bridge hold

Claw grip

Topic Links

This topic links to:

- English - relating explicitly to known vocabulary and understanding it with the help of context
- Mathematics - use standard units of mass, length, time, other measures
- Science: Nutrition and digestion RSE - What constitutes a healthy diet
- Physical health and fitness - The characteristics and mental and physical benefits of an active lifestyle.

Additional Resources

To further practise and develop you knowledge see:

Eat well guide Quiz

Eat well guide

Eat well video resource

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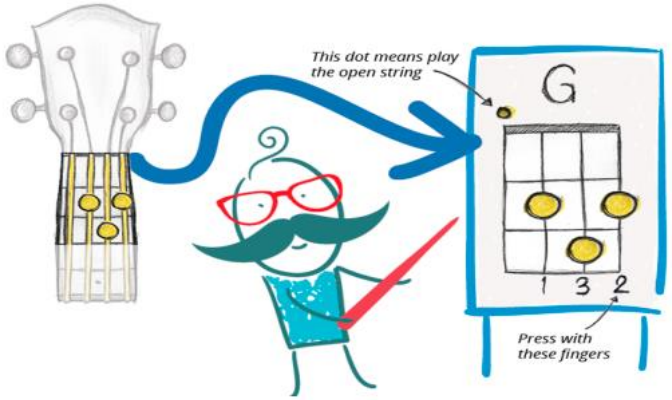
Year 7 Ukulele

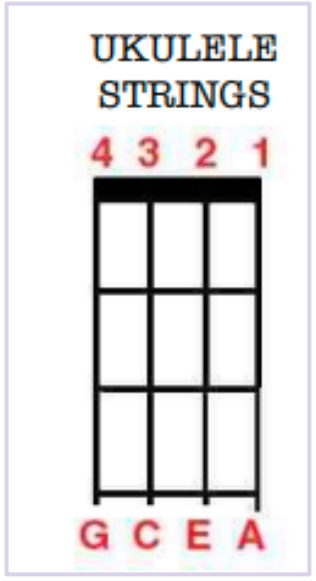
The learning outcomes for this topic are:

- What musical elements are, how and why we use them in music, and how to use them within your singing and playing
- How to play a range of chords on the ukulele, including C, Am, F and G
- How to recognise the musical elements when listening to music and how to use them when playing and singing music
- How to use correct technique when holding and playing the ukulele

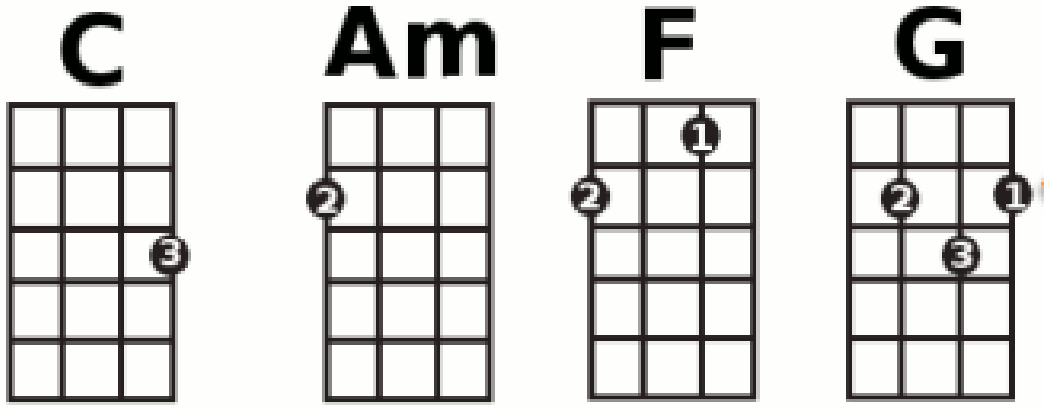
Keyword	Definition
Dynamics	How loud or soft the music is and how this changes
Tempo	How fast or slow the music is and how this changes
Texture	The layers within the music - how thick or thin the music is
Pitch	how high or low the music is
Timbre	The tone of the instrument
Attack & Decay	How sounds start and stop - suddenly or gradually
Silence	When no sound is used
Ukulele	The ukulele is a four stringed instrument which looks more or less like a miniature classical guitar.
Strumming	To play all 4 strings by sweeping down with your hand or a plectrum
Picking	To play or 'pick individual strings to create a melody
Technique	The correct was to play the instrument
Chord	Multiple notes played at the same time

Key Concepts





These are the main chords we will be using



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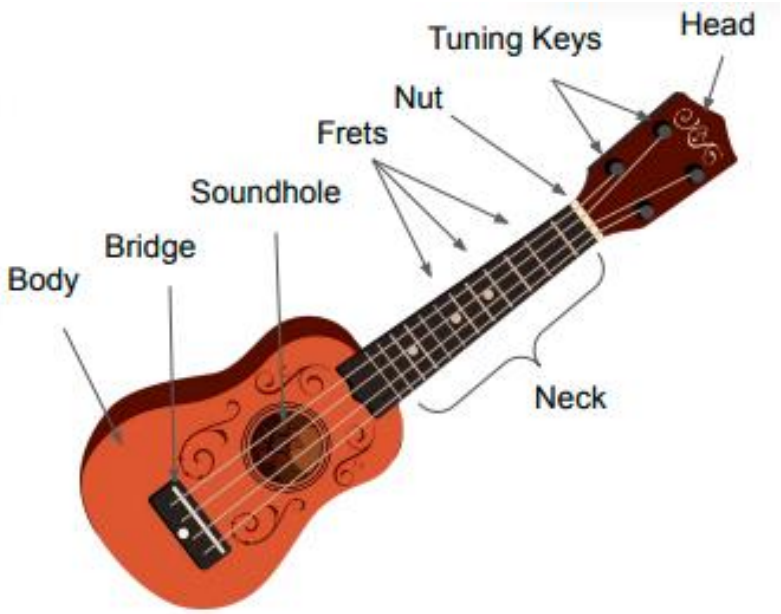
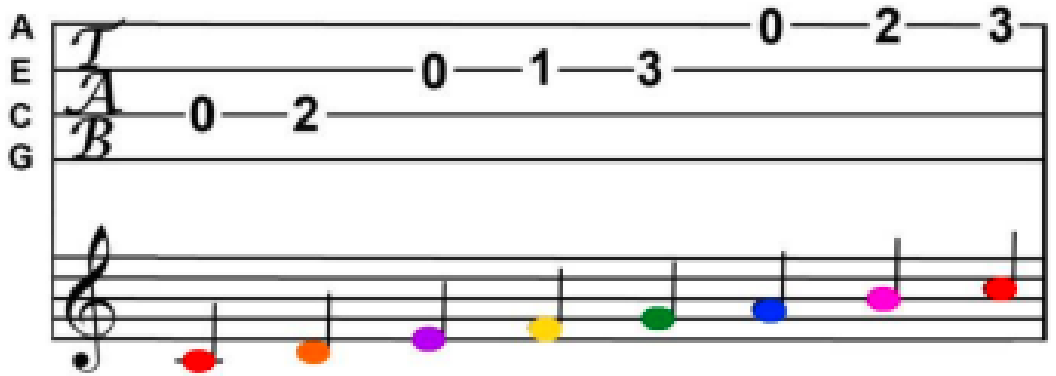
- How to recognise the musical elements when listening to music and how to use them when playing and singing music
- How to use correct technique when holding and playing the ukulele



STRUMMING SYMBOLS

D = Down
U = Up
X = Tap/Hit

C MAJOR SCALE ON UKULELE



Career Focus - what skills are you learning?

I am a ukulele player and I have to use lots of **skills** to play this instrument. I have to use **coordination** as my left hand is always doing something different to my right. I have to **listen** very carefully so I know what I am playing is correct. This also helps when I am playing in a group and demonstrating good **teamwork**. I also have to **read** the chords as I play. **Coordination** and **teamwork** are skills needed in many other jobs and careers.

Challenge Activities

How well do you know your musical elements? Take this quiz to find out.
Elements Quiz Link

Here is a more indepth quiz to really test yourself:
Challenge Elements Quiz

Listen (and watch) the following piece of music by clicking here "Thunderstorm" a graphic notation composition by Alex Chorley, age 12and describe the musical elements within it.

Topic Links

Band Skills
Rhythm & Pulse
Geography and culture
Literacy - keywords and spellings
Numeracy - Counting, rhythm, understanding patterns

Further Listening

Ukulele Orchestra of Great Britain

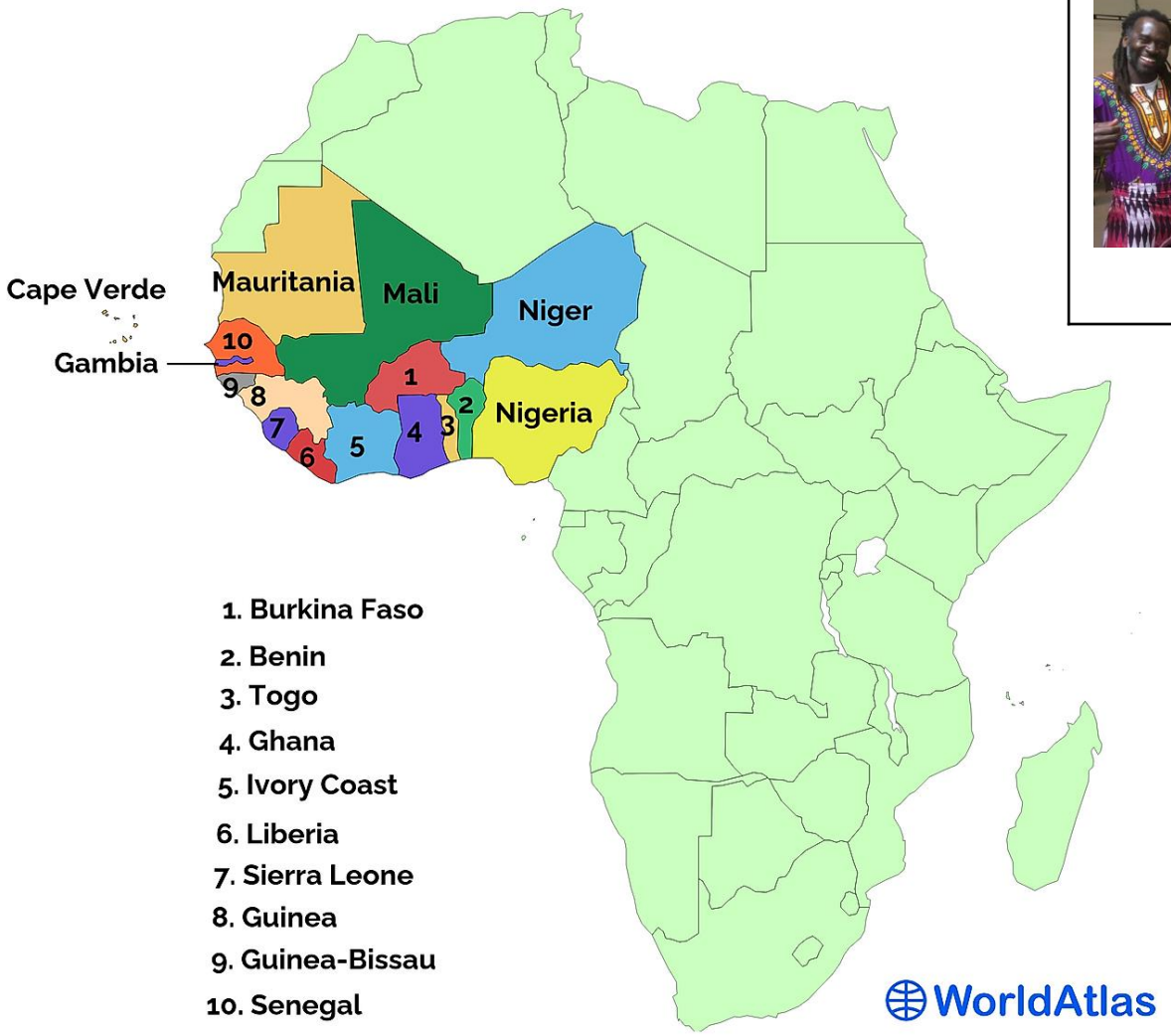
George Formby

Year 7 West African Djembe Rhythms

The learning outcomes for this topic are:

- To understand the importance of rhythm in West African culture
- To be able to play the djembe using correct technique
- To be able to improvise rhythms
- To develop ability to compose in groups

Map of West Africa



Career Focus - Where could this take you?

We are djembe drummers. Group composition requires us to respect the ideas and contributions of others in the group. It also builds teamworking skills as we have to work creatively with other musicians.
It is important to learn about music from all over the world to understand different backgrounds and cultures. Tolerance is one of the core British values. Teamwork, creativity and respecting others are important in most jobs and careers

Challenge Activities

1. Here's a rhythm quiz to really test your knowledge:
   https://www.macprovideo.com/course/musictheory103-rhythm/quiz

2. Here is an online djembe lesson. See if you can learn this rhythm:
   https://www.youtube.com/watch?v=jfNs0Z2duPs&ab_channel=DjembeGuru

Further Listening:

- Jalikunda African Drums' on YouTube
- 'Kasiva Mutua: How I use the drum to tell my story' on YouTube
- Famoudou Konate - Spotify

Topic Links

This topic links to other music topics such as:

- Rhythm, pulse and tempo
- Group composition
- Performance skills
- Geography and culture
- Literacy – Keywords and spelling
- Oracy – singing/chanting

Additional Resources

To further practise and develop your knowledge see:

BBC Bitesize – Music of Africa:
https://www.bbc.co.uk/bitesize/guides/zhsny4j/revision/1

Free online djembe lessons and information:
https://afrodrumming.com/

Year 7 West African Djembe Rhythms

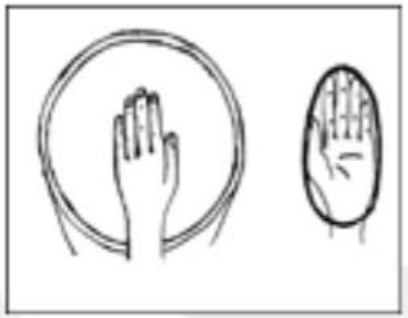
The learning outcomes for this topic are:

- To understand the importance of rhythm in West African culture
- To be able to play the djembe using correct technique
- To be able to improvise rhythms
- To develop ability to compose in groups

Keyword	Definition
Rhythm	a strong, regular repeated pattern of movement or sound
Dynamics	The volume of a note or sound
Duration	The length of a note or sound
Pulse	A steady beat like a ticking clock or your heartbeat. It can be measured in time by counting the number of beats per minute (BPM).
Tempo	The speed of the pulse.
Ostinato	A short, repeating pattern.
Polyrhythm	When two or more rhythms are being played at the same time.
Improvisation	To make music up in the moment, without planning or rehearsing what you will play.
Imitation Call and Response	One drummer plays a rhythm and the rest of the group repeat it exactly
Master drummer/ griot	The master drummer is the leader of the group. They give the cues and lead the call and response. Griots are the wise leaders and musicians of West African villages.

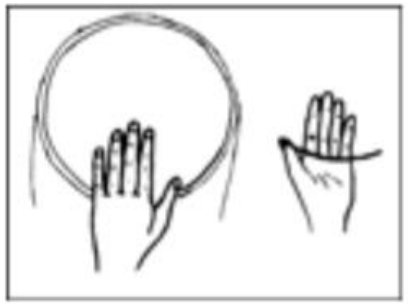
Key Concepts

Djembe Hand Techniques



Bass is played in the center of the head with your fingers closed and your hand flat.

Tone is played on the edge of the djembe with your fingers closed and your hand cupped.



Slap is played near the edge of the head with your fingers open.

Djembe Parts

Head - traditionally made of goat skin. Mass-produced djembe heads are made of plastic that is textured to look like animal skin.

Tuning ropes - These ropes are tied tight to apply pressure to the head. This means the drum has a higher pitched sound when we hit it.

Body - The main part of the djembe is traditionally made from wood. Some modern djembes are made from metal.

The body of the djembe is hollow. This allows the air to escape, giving the instrument more volume.

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Year 7 Invasion Games

The aims of the sequence of learning are to ensure that all students:

- Can identify at least four core skills required for invasion games
- Demonstrate basic core skills such as a chest pass
- Demonstrate basic core skills in a game situation
- Lead a small group of peers in a warmup

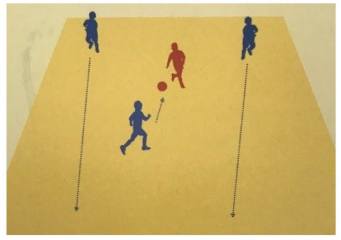
Keyword	Definition
Pass	keep possession of the ball by maneuvering it between different players with the objective of advancing it up the playing field
Catch	to receive the ball from another player and keep possession
Defend	to resist the attack of the opposing team
Attack	the action of attacking or engaging an opposing team with the objective of scoring points or goals
Tackle	trying to take the ball from an opponent
Intercept	Obstruct someone/something from getting to their desired position/destination

Key Concepts

Defending

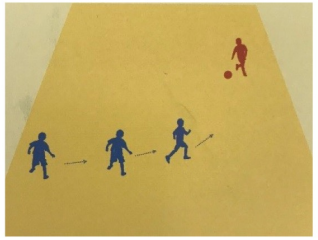
Delay

If possession is lost quickly—a defender should try to slow the attacker down so other players can get back in position (goal side).

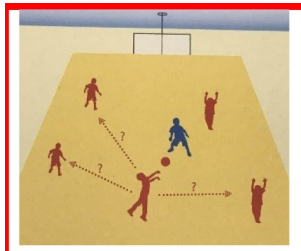


Balance

Defenders need to move into an appropriate formation in relation to where the ball is.



Attacking



Support

To give the player in possession as many options as possible team-mates move into different positions to receive the ball. This could be to the side / behind / in front of the ball.

Improvisation

Players need to become creative to get past an organised defence e.g. one-twos, fake passes, outwit defenders with the ball

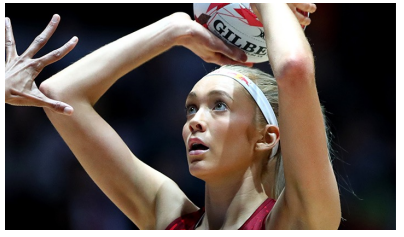
You should already know:
- The aim of an invasion game
- The name of at least 2 invasion games

You will be assessed on:
- Understanding
- Technique in isolation
- Technique in game
- Leadership
- Attitude to learning

Athletes to research further:

Harry Kane

Helen Housby



Lewis Ludlam

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Year 7 Invasion Games

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- Lead a small group of peers in a warmup

Retrieval Practice

Questions	Answers
What are the core Netball skills?	Chest pass, Bounce pass, Shoulder pass, Overhead pass, Two-footed landing, Shooting, Pivot, Defending and Attacking
What are the Netball positions?	Goal keeper, Goal defence, Wind defence, Centre, Wing attack, Goal attack and Goal shooter
What are the core football skills?	Dribbling close to feet, Dribbling changing direction, Passing side foot, Passing close distance, Defending and Attacking
What are the core Rugby skills?	Target with hands out, Push pass, Catching, Protecting, Side-stepping, Attacking, Defending

Career Focus - Where could this take you?

I am a **human biologist** an it is my job to study the human skeleton and muscular systems to understand how it works and moves.

Challenge Activities

1. Design a new rule for either football, netball or rugby. Explain how your rule will impact the game.

2. Create a mind map of all of the equipment needed to play an invasion game of your choice.

Topic Links

This topic links to:

- Science – movement of the body and muscles; the physics of sports
- English – understanding and defining key terminology
- Mathematics – problem solving, recording figures and analysing performance

Additional Resources

To further practise and develop you knowledge see:

- https://tgfu.weebly.com/invasion-games.html
- https://en.wikipedia.org/wiki/Association_football
- https://www.youtube.com/watch?v=aBuxsRnU50A
- https://www.world.rugby/the-game/laws/home

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PI and HI Department

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Year 7 Religion: An introduction to faith in the UK

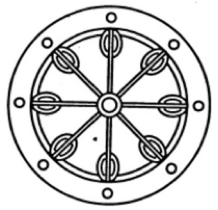
The aims of the sequence of learning are to ensure that all students:

- Describe different things which influence our lives
- Know the different faiths practiced in Britain
- Discuss why religion is important to people
- Describe what RE is and why we study it

Keyword	Definition
influence	something that has changed the way people think or behave
multi	means more than one, usually a lot more than one
faith	if you have faith in something, you trust it or believe in it.
religion	a set of ideas people have about a god or gods
RE	Religious Education. A subject where students learn about religions and what people believe
festival	a special time when people celebrate something
tradition	people have done it in the same way for a very long time

Key Concepts

Can you identify the six world religions by their symbols?



BUDDHISM

JUDAISM

CHRISTIANITY

ISLAM

HINDUISM

SIKHISM

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- Describe what RE is and why we study it

Retrieval Practice

Questions	Answers
Who/ what influences our lives?	Family Friends Schools Clubs Media (TV, radio, news) Village, town or city we live in
What does multi-faith Britain mean?	Britain is a county which has many different faiths. Many people follow the six world religions of Christianity, Islam, Hinduism, Judaism, Buddism and Sikhism. There are others as well!
What is Religion?	This is a set of ideas people have about a god or gods.
Give some reasons why we study RE at school?	To understand and discuss your own and other people's beliefs To learn from others
How can we show respect for people's different beliefs?	Show an interest in people's faith. Ask about the festivals people are celebrating. Share food and presents with them at festival times. Find out more by talking are reading.

Career Focus - Where could this take you?

In any job you do in the future and wherever you go you will meet people from different faiths and religions. If you understand why a person behaves how they do and what they believe in the better you will all work together.

Challenge Activities

1. Have a chat with a friend or family member about who are their biggest influences.

2. Find out how many people follow a faith in the UK? Can you write down how many people are of which faith?

3. Design a webpage that promotes RE at Newsome

Topic Links

This topic links to:

- PSHE
- Geography
- History

Additional Resources

To further practise and develop you knowledge see:

A great website to find out about different religions. You can keep returning to this throughout your time at Newsome Academy
https://www.bbc.co.uk/bitesize/subjects/z7hs34j

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Year 7 Looking after yourself

The aims of the sequence of learning are to ensure that all students:

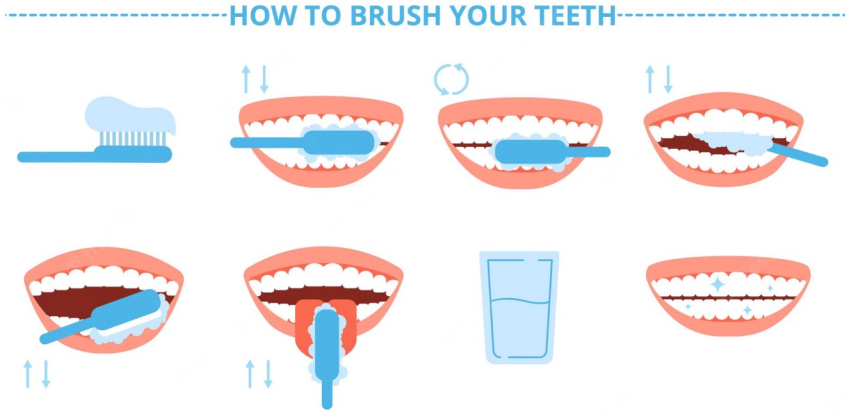
- Understand the importance of cleaning and looking after your teeth
- Know why it is important to keep your body and clothes clean

Keyword	Definition
Tooth	Used to cut, tear and grind food into small pieces
Teeth	More than 1 tooth.
Mouth	The place where food is chewed
Gum	Where your tooth sits
Clean	To get rid of food and “bits”
Brush	Clean your teeth with a toothbrush
Toothpaste	A cream for cleaning teeth
Dentist	A person who checks your teeth are ok (healthy)
Wash	To use water to get clean
Shower	A spray of water
Soap	Use with water for washing
Shampoo	A mix used to clean hair

Key Concepts

Clean or Dirty?

1. Toothpaste on brush
2. Brush up and down
3. Brush around
4. Brush behind
5. Brush sides of teeth
6. Brush tongue
7. Do not rinse
8. Clean teeth!!!



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Year 7 Looking after yourself

The aims of the sequence of learning are to ensure that all students:

- **Understand the importance of cleaning and looking after your teeth**
- **Know why it is important to keep your body and clothes clean**

Retrieval Practice

Questions	Answers
1. What do you use to wash your hair?	Shampoo
2. How many minutes should you brush your teeth for?	About 2 minutes
3. Why is it important to have a wash or shower every day?	To stay clean and not get smelly
4. Name 5 items (products) that you can use to keep you clean.	eg Soap Shower gel Shampoo Hand gel Toothpaste

Career Focus - Where could this take you?

I am a dental assistant. My job is to help the dentist. I make sure the equipment is ready for the dentist to use.
I meet lots of people every day. I talk to the patients to try make them feel happy.

Challenge Activities

Why is it important to brush your teeth?

2. Use a laptop to find the names of these types of teeth. What is their function (job)?

Topic Links

This topic links to:

Literacy - verbs, scientific words

French - teeth = les dents

Additional Resources

To further practise and develop you knowledge see:

- BBC bitesize KS2 - How to keep your teeth healthy

Year 7 Movement (HT1 ii)

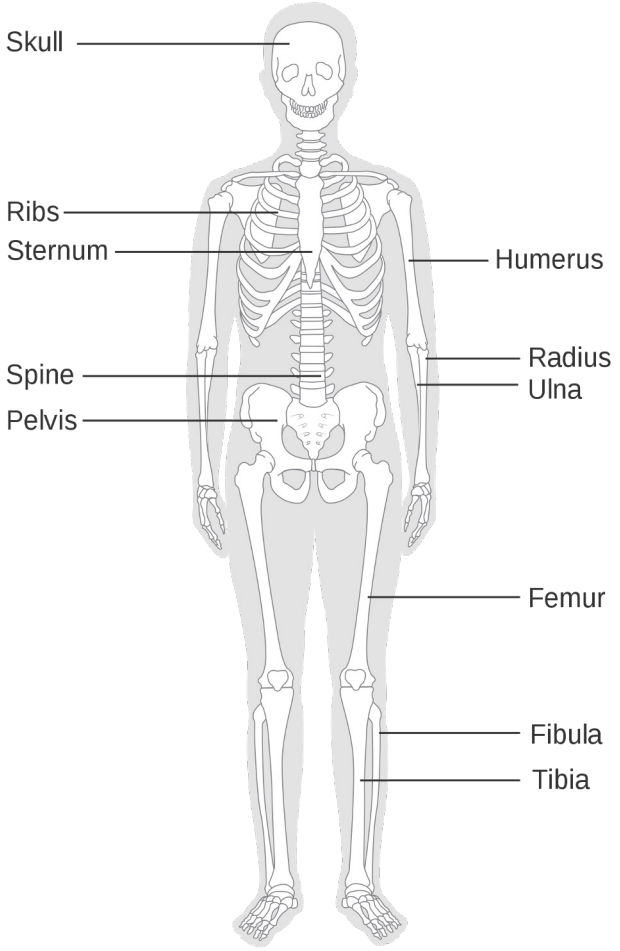
The aims of the sequence of learning are to ensure that all students:

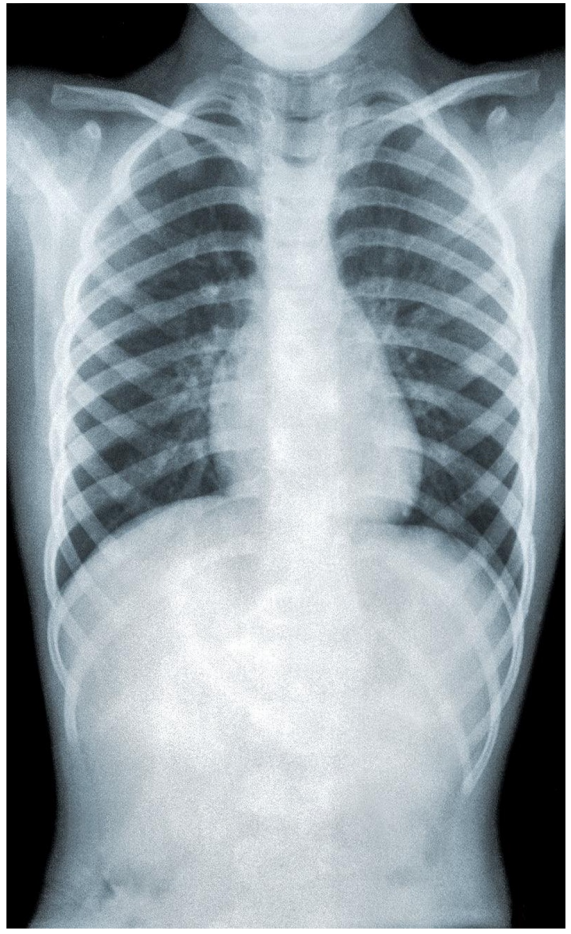
- Name the bones of the skeleton
- Understand the functions (jobs) of the skeleton
- Understand that muscles work in pairs to move bones

Keyword	Definition
bone	Bones are strong and support your weight
muscle	Muscles let us move
skeleton	A skeleton is made up of lots of different bones.
support	Lets you stand up, sit down
protect (look after)	Looks after your heart, brain etc
move	Change position

Key Concepts

Bones of the skeleton





The rib cage protects the heart and lungs

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Year 7 Movement (HT1 ii)

The aims of the sequence of learning are to ensure that all students:

- **Name the bones of the skeleton**
- **Understand the functions (jobs) of the skeleton**
- **Understand that muscles work in pairs to move bones**

Retrieval Practice

Questions	Answers
1. What are the 3 jobs (functions) of the skeleton?	Protect the organs Lets you move Supports your body
2. What is the job (function) of the skull?	To look after (protect) the brain
3. Name 5 bones in your body	eg skull, jaw, ribs, spine, thigh bone
4. Why is your rib cage important?	It looks after (protects) the heart and the lungs
5. Where in your body are your hamstrings and quads (quadriceps)?	In the top (upper) part of your leg

Career Focus - Where could this take you?

I am an X-ray nurse (radiologist). I use a machine to make x-ray pictures of the inside of your body. The pictures show the parts of your body in black, white and grey. X-ray pictures can tell us if you have a broken bone.

Challenge Activities

1. How do your biceps and triceps work together to move your arm?
2. Use a laptop to find the name of the substance that is around the ends of bones to makes your bones move smoothly.
3. Find the scientific names for the skull, the thigh bone and the kneecap
4. Which muscles work in pairs to move your arm?
5. Which muscles work in pairs to move your upper leg?

Topic Links

This topic links to:

PE

Physiotherapy sessions

Additional Resources

To further practise and develop you knowledge see:

- BBC bitesize video - how does the human skeleton work?
- Fred - our model skeleton
- Torso model - showing where organ fit together in the chest