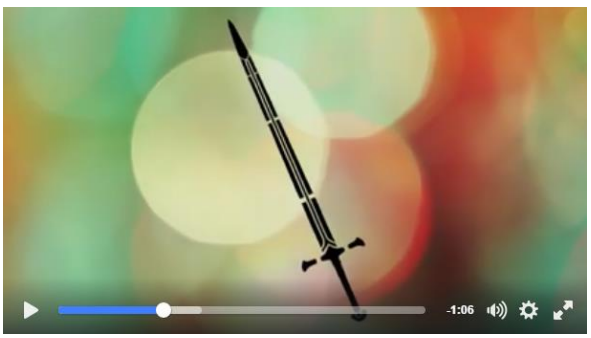
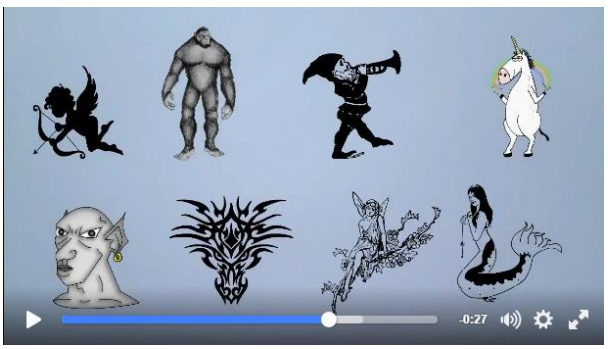
VIDEO “HOOK”





A one and half minute video which can be used to hook your students into the math activity!

PREVIEW

THANKS FOR LOOKING!

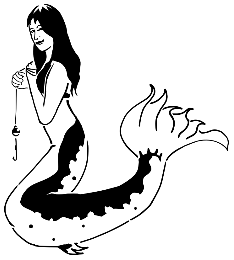
CRIME SCENE INVESTIGATION

King Arthur is Furious!

Someone has taken his magic sword Excalibur. It has been foretold that without his magic sword King Arthur will no longer be able to rule. Camelot and the entire kingdom will fall into ruin unless we can help find who took his sword. …..

Only a magical creature or person can touch the sword. This means that whoever stole the sword must be a magical being. The kingdom has been searched and all the magical beings have been questioned.

The most likely suspects were gathered up an[illegible]re shown below. One of these suspects is thought to have stole[illegible]Excal[illegible]ur. Use the evidence on the following pages to find out which [illegible]or[illegible]itted this terrible act. The King needs you – the wh[illegible]ingd[illegible]ending on you finding that sword so pe[illegible]can b[illegible]ed t[illegible]the region.

			
Suspect 1 **Gary the Unicorn**	**Susp[illegible]** **Gnom[illegible]**	**Suspect 3** **B[illegible]t**	**Suspect 4** **Fairy Princess**
			
Suspect 5 **The Orc Lord**	**S[illegible]pect 6** **Cupid**	**Suspect 7** **Dragon King**	**Suspect 8** **Mermaid**

FIVE CLUES HAVE BEEN FOUND WHICH ARE ON THE FOLLOWING PAGES.

AFTER YOU HAVE SOLVED EACH CLUE COME BACK HERE TO CROSS PEOPLE OFF THE SUSPECT LIST UNTIL YOU HAVE FOUND WHO STOLE THE SWORD

HIDDEN MESSAGE

A scroll was found attached to the rock which Excalibur was once stuck in. On it is a coded message, which once cracked will allow us to eliminate one person from the suspect list.

Solve the problems, then fill in the message spaces with the letters that match the correct answers to read the secret message.
This will let you cross off one person from the suspect list.

Hint. When a number is not known it can be replaced with a letter.

For example. There where 3 lollies, now there is only one.
In an equation it looks like this: 1+L = 3 → 1+2 =3 → L=2
L can be used to show the unknown number lollies that have gone.

Another example. 2xC = 10 → 2x5 =10 → C=5

A 10-A = 2 A = _____	**B** 3xB = 18 B = _____	**C** C+11 =22 C = _____	**D** 11–D = 9 D = _____	**E** 6x[illegible] E = _____	**F** F[illegible]0 [illegible] = _____	**G** 12+13 =G G = _____
H 4xH = 16 H = _____	**I** 25-I = 15 I = _____	**J** 9x3 = J J = _____	**K** 1[illegible]+17 [illegible] = _____	**L** 3[illegible] [illegible] = _____	**M** 6x8 = M M = _____	**N** [illegible] = N N = _____
O 5x6 = O O = _____	**P** Px6 = 54 P = _____	**Q** [illegible] =53 Q = _____	**R** 10[illegible]23 R = _____	**S** 3x7 = S S = _____	**T** [illegible] = 28 T = _____	**U** 9x9 = U U = _____
V 34+42 =V V = _____	**W** 8x7 = [illegible] W = _____	**X** [illegible] =X [illegible] = _____	**Y** 4x7 = Y Y = _____	**Z** [illegible] = 61 Z = _____		

7 4 10 21 48 [illegible] 21 21 8 25 36 56 8 21

3 36 5 7 [illegible] 11 8 81 21 36 10 4 8 7 36

7 30 21 36 36 7 4 10 21 30 63 36 8 21

8 21 81 21 9 36 11 7 . 10 7 56 8 21

63 30 7 25 8 13 28 .

CROSS THIS PERSON OFF YOUR SUSPECT LIST.

THE TREASURER HAS FLED!

The city of Camelot and Arthurs Kingdom are starting to fail. There are enemies starting to appear on all sides and riots have started in the streets. The kings treasurer has run away due to being frightened about the state of the kingdom. Before he ran way he was calculating how much gold each suspect had because whoever took Excalibur would of needed at least 40 gold bars to do so. All that the treasurer left were these equations on pieces of paper. Find the answers to these equations to find out how many gold bars each suspect has.

When calculating the answers remember these following tips:

P Parentheses / Brackets
E Exponents: e.g. 3^2
M Multiplication
D Division
A Addition
S Subtraction

Use PEMDAS to make sure you calculate the right part of the equation first. Parentheses (Brackets) are always calculated first, multiplication and division are done before addition and subtraction.

1, The *Par*ntheses (*Brackets*) always g[illegible]alculated first
S[illegible] 2x2[illegible]2+3) → 2x2 + 5 = 9
A[illegible]nce they are inside he[illegible]ren[illegible](bracket). 2+3 = 5.

[illegible]ltiplicati[illegible]nd division alway[illegible]
es before addition and su[illegible]tra[illegible]tio[illegible]!
[illegible]+2x5 → 4[illegible]10[illegible]1
Always do the [illegible]ul[illegible]plication before th[illegible]a[illegible]ditio[illegible]. 2x5 =10.

Any suspect who has a to[illegible]ss than 40 gold bars c[illegible]e crossed off the list.

(6+3) x 7	[illegible]0 +[illegible]	100[illegible]5x8	(50+45) - (3x8)
Gary the unicorn	Gnom[illegible]	Bigfoot	Fairy Princess
(30-22) x 9	[illegible]x1[illegible]-(3x5)	2x4 x(4+4)	(60 - 50) x 6
The Orc Lord	Cupid	Dragon King	Mermaid

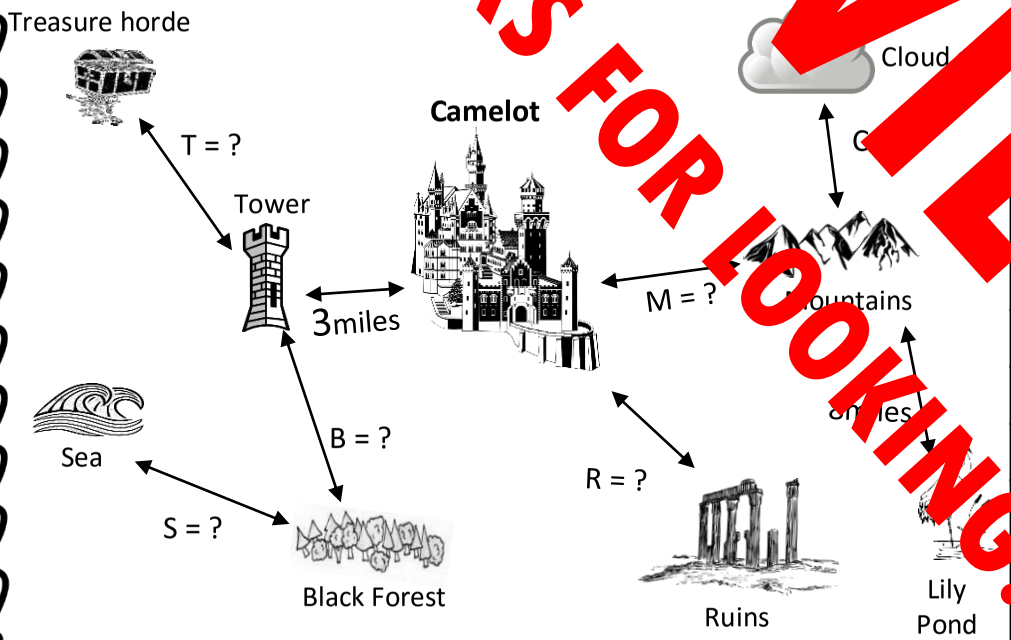
Cross off any suspect who has a total of less than 40 off the suspect list.

Journey of the creatures

One day after Excalibur was taken the location of all the suspects was known. It is thought that no one could of travelled more than 12 miles in a day. This means that anyone who was more than 12 miles away from Camelot can be crossed off the suspect list.
Arthur got out his map, but many of the dist[illegible]s where missing.

t[illegible]clues below to work out the missing distances.

It is the same distance from the ru[illegible]as it is from the tower to Camelot.	**Distance of R =**
It is double the distance from the black forest to t[illegible]r as it is to go from the ruins to Camelot.	**Distance of B =**
To go from the sea to[illegible]he black forest to the [illegible]elot is a total distance of 13 miles.	**Distance of S =**
To go from the lily po[illegible]d t[illegible]the mountains to Ca[illegible]ot is a t[illegible]nce of 14 miles.	**Distance of M =**
It is half the distance from t[illegible]clo[illegible]d city to the mount[illegible]is from[illegible]e sea to the black forest.	**Distance of C =**
It is half the distance from the t[illegible]sur[illegible]horde to Cam[illegible]as it is t[illegible]from the lily pond to Camelot.	**Distance of T =**



Work out how far away each suspect was and cross anyone who more than 12 miles away off the suspect list.

SUSPECT	Where they were	Distance from Camelot
Gary	Tower	
Gnor[illegible]	[illegible]ack Forest	
B[illegible]	M[illegible]ns	
Fairy Pr[illegible]	[illegible]ily Pond	
The Orc Lord	Ruins	
[illegible]upid	Cloud City	
D[illegible]gon King	Treasure Horde	
Mermaid	Sea	

WHO HAS THE POWER

All magical creatures can enhance their magical powers by using gemstones. To use Excalibur a creature needs to have enough gemstones to raise them to a magic level of above 40. Any suspect who doesn't have enough stones to give them a magic level of above 40 can be crossed off the list.

All of the gemstones from each suspect have been gathered. Different gemstones have different amounts of power. The amount of power that each gemstone has is in the table below.

Calculate the total magic level each suspect has.
Cross any suspect who has a total of magic level of less than 40 off the suspect list.

Jade	Topaz	Pearl	Moon Stone	Emerald
2 Magic Levels	4 Magic Levels	5 Magic Levels	6 Magic Levels	7 Magic Levels

Hint: To calculate amount of magic multiply number of stones by their power level.
e.g. Three Jade stones = 3 x 2 = 6 magic.

Gary the Unicorn: 9J + 3T + 2E

9J = 9 Jade, = 9x2= _____magic

2T= 3 Topaz = 3x4= _____ magic

2E= 1 Emerald = 2x7 = _____ magic

Total amount of magic = _____

Gn[illegible]: 4[illegible]5P + 2M

4T = 4 Top[illegible] = _____ magic

5P = 5 Pear[illegible] _____ magic

2M = Moonsto[illegible]__x___= _____magic

[illegible]tal a[illegible]t[illegible] magic _____

BigFoot: 4J + 2P + 1M + 2E

4J = _____ mag

2P = _____ agic

1M = _____

2E = _____ m

Total amount of mag[illegible]

Fa[illegible]Princess: 3T + 1P + 4[illegible] + [illegible]E

3T = _____ magic

1P = _____ magic

4M = _____ magic

3E = _____ magic

To[illegible]al [illegible]mber of magic = _____

The Orc[illegible]: [illegible]7T + 2[illegible]3M

Total amount of magic = _____

C[illegible]pid: 7J + 1T + 2E

Total amount of magic = _____

Dragon King: 1P + 6M + 4E =

Total amount of magic _____

Mermaid: 4T + 6P + 3E =

Total amount of magic _____

THE SOLDIERS ARE MARCHING!

Whoever stole Excalibur must be planning to attack Camelot soon. However the sword alone would not be enough to conquer Camelot, an army would also be needed. It is known that an attack is planned in 6 weeks time and even with Excalibur it would still take at least 100 soldiers to conquer Camelot.
The current amount of soldiers each suspect has is known. It is also know how many soldiers each suspects gains (or loses) in a week.
Calculate how many soldiers each suspect will have at the end of week 5.

Cross off any suspect who will have under 100 soldiers at the end of week 5.

Suspect	Staring number of soldiers	End of Week 1	End of Week 2	End of Week 3	End of Week 4	End of Week 5
Gary Gains 10 a week	60	**70**				
Gnome Gains 5 a week	80					
Bigfoot Doubles every week	4					
Fairy Gains 2 a week	9					
Orc Loses 5 a week	1					
Cupid Gains 3	86					
D n Gains 9	65					
Mermaid Loses half every week	4000					

Bonus Question:
Do you notice any patterns above for each suspect? A formula can be created to show how many soldiers each will have.
For example Gary's formula looks like this: Soldiers = (Week number x 10) + 60
So at the end of 10 weeks he will have (10 x 10) + 60 = 160 soldiers.
How many will he have at the end of 20 weeks?

See if you can work out a formula for the other patterns, on a separate bit of paper see if you can calculate how many soldiers they will have after 10weeks and 20 weeks!

MY LIFE...

Choose one of the suspects and pretend you are them. Write a story from their life – it could be short story about something that has happened to them, or perhaps a tale of how they grew up. Maybe they weren't always a magical creature, or maybe they are really a good being inside but have been rejected by others because they were different. It's up to you – be as imaginative as you can!

Draw a picture here.

CREATE YOUR OWN MESSAGE

Create your own hidden message!

Write an equation for each letter to give it a number.
For example, A has been done for you 4+A = 2 ⟶ A must then = 2

Then fill in the message space with the number that match the letters you want the message to say.
For example if you want to write an A, put this ⟶ ___ 2

A **4+A=6** A = _____	**B** B = _____	**C** C = _____	**D** D = _____	**E** E = _____	**F** F = _____	**G** G = _____
H H = _____	**I** I = _____	**J** J = _____	**K** K = _____	**L** L = _____	**M** M = _____	**N** N = _____
O O = _____	**P** P = _____	**Q** Q = _____	**R** R = _____	**S** S = _____	**T** T = _____	**U** U = _____
V V = _____	**W** W = _____	**X** X = _____	**Y** Y = _____	**Z** Z = _____		

MESSAGE

___

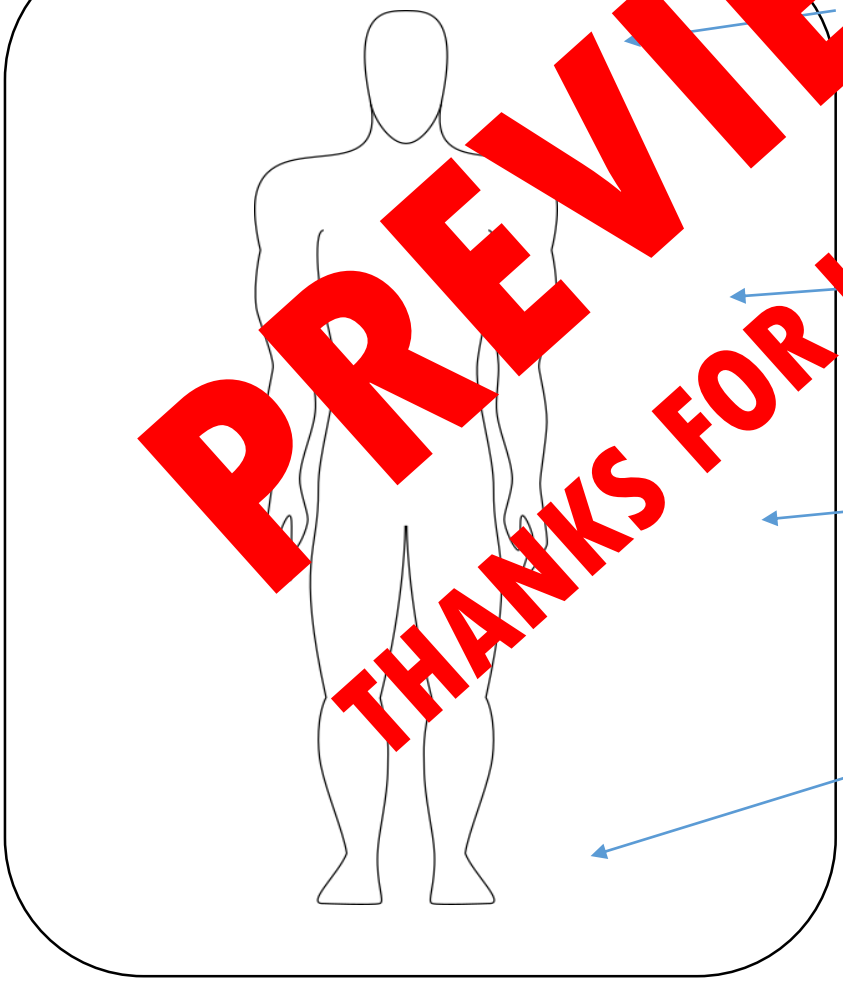
Put line with numbers underneath here to write your hidden message

DESIGN A KNIGHT

King Arthur had a circle of knights who helped him rule his kingdom. Design one of these knights. Draw and write about what he is wearing, create shield and design a motto for him (saying).

Design a shield

Write a motto for your gladiator



te about what
ght is wearing

HEADWEAR: _____

CLOTHES OR ARMOR: ____

WEAPON: _____

FOOT/LEG WEAR: _____

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