

Whickham Maths Department  
proudly present

# Whickham School of Witchcraft and Wizardry



Name: \_\_\_\_\_





## WHICKHAM SCHOOL OF WITCHCRAFT AND WIZARDRY

This booklet is intended to help you get to know your new teachers who you will meet next year. Even if you don't complete a teacher's task, it would be great if you could read a little bit about us all so you know our faces when you arrive in September.

Please complete the tasks from Mrs Orwin and Miss Connell, and then choose at least one more task which you would most like to do. Parts of our tasks marked with a star present an extra challenge.

As we all love maths here at Whickham, we would encourage you to complete as many of the remaining tasks as you like if you would like to do so. There is no expectation for you to do this, but we have put this booklet together for you in case you would like to try some more fun, magical maths!



WHICKHAM SCHOOL OF  
WITCHCRAFT AND WIZARDRY

Dear \_\_\_\_\_

We are pleased to inform you that you have been accepted into Whickham School of Witchcraft and Wizardry. Please find below a list of all necessary equipment.

Term begins on Thursday 2<sup>nd</sup> September. We await your owl with your answers to the enclosed challenges. (You **MUST** remember to bring these back to school on your visit day so we can get to know you too!)

Yours Sincerely,  
The Maths Department



## WHICHAM SCHOOL OF WITCHCRAFT AND WIZARDRY

### Equipment

First year students will require:

- Pen (black)
- Pencil
- Ruler
- Calculator (Casio fx-83GTX Scientific recommended)
- An enthusiastic approach
- A willingness to have a go
- This booklet!



Students may also bring a protractor if they wish.



**Please complete this task**

# Mrs Drwin



**Favourite number:** 7

**I joined Whickham maths department in:** 2015

**Favourite maths topic to teach:** Solving Quadratic Equations

**If I didn't teach maths I would teach:** Business Studies

**An interesting fact about me:** My mam and I have the same birthday

## Wizarding Subject – Magic Maths!

1 Circle all the square numbers.

1      2      10      49      144

2 Tick the cards that are common factors of 12 and 18

6     9     36     2     4

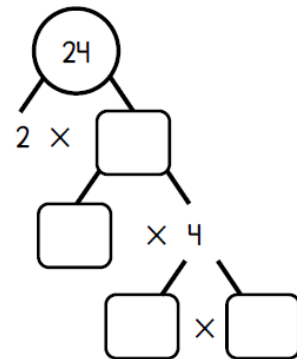
3 Use the fact  $12 \div 4 = 3$  to complete the missing numbers.

$$120 \div 4 = \square$$

$$124 \div 4 = \square$$

$$\square \div 4 = 0.3$$

4 Complete the prime factor tree.



5 Which two calculations give the same answer?

- A  $6 + 4 \times 7$   
B  $(6 + 4) \times 7$   
C  $6 + (4 \times 7)$

\_\_\_\_\_ and \_\_\_\_\_

6 Tick the card that has the greatest value.

$10^2$       $3^3$       $5^3$

7 Dora thinks of a positive whole number.

She says,

- It is an odd number less than 30
- It is one more than a multiple of 11

Is her number prime?

Explain your reasoning.

8 Complete the table by putting the labels in the correct place.

- A Square number    C Multiple of 6  
B Not a square number    D Not a multiple of 6

	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	36 144	6 24 60 18
<input checked="" type="checkbox"/> D	9 16 100 25 49	7 15 31

Please complete  
this task

Mrs Drwin



## Wizarding Subject – Magic Maths!

9 Work out  $89^2$

10 Harry uses these digit cards.



- He makes a 3-digit number and a 1-digit number.
- He multiplies them together.
- His answer is odd.

What could the multiplication be?

$$\square \square \square \times \square$$

11 Alex has 3 boxes of eggs.

There are 6 eggs in each box.

He takes one egg out of each box.

Circle the calculation that shows the total number of eggs in the boxes now.

$$(3 \times 6) - 1 \quad 3 \times (6 - 1) \quad 3 \times 6 - 1$$

12 Work out the missing numbers.

$$2 \times 3 + 4 \times \square = 70$$

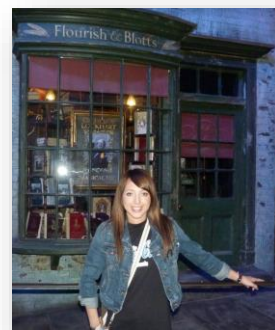
$$2 \times (3 + 4) \times \square = 70$$

Circle how confident you feel with four operations.

1	2	3	4	5
Not confident				Very confident

**Please complete this task**

# Miss Connell



Favourite number: 7

I joined Wickham maths department in: 2012, then again in 2015

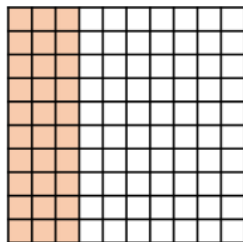
Favourite maths topic to teach: Probability

If I didn't teach maths I would teach: History

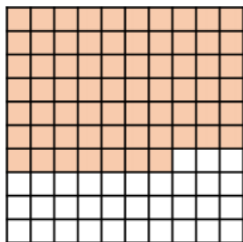
An interesting fact about me: I'm very clumsy

## Wizarding Subject – Magic Maths!

- 1 Here are some hundred grids.  
What percentage of each grid is shaded?

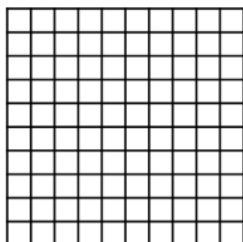


%

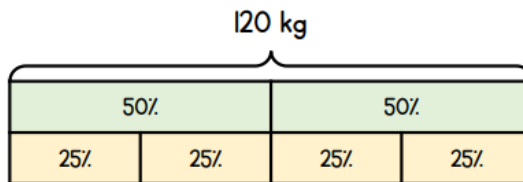


%

- 2 Shade 12% of the hundred grid.



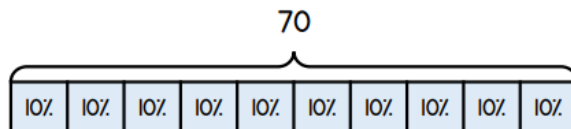
- 3 Use the bar model to help you.



What is 50% of 120 kg? \_\_\_\_\_ kg

What is 25% of 120 kg? \_\_\_\_\_ kg

- 4 Use the bar model to help you.



What is 10% of 70? \_\_\_\_\_

What is 30% of 70? \_\_\_\_\_

What is 90% of 70? \_\_\_\_\_

What is 5% of 70? \_\_\_\_\_

- 5 The percentage bar chart shows the colour of counters in a box.



What percentage of the counters in the box are blue?  
\_\_\_\_\_

What percentage of the counters in the box are yellow?  
\_\_\_\_\_

What percentage of the counters in the box are red?  
\_\_\_\_\_



Please complete  
this task

# Miss Connell



## Wizarding Subject – Magic Maths!

- 6 50% of a number is 32  
What is the number?

\_\_\_\_\_

- 10% of a number is 7.5  
What is the number?

\_\_\_\_\_

- 7 Max has £800 in the bank.  
He spends 3% of his money on a new computer game.  
How much money does he spend on the computer game?

£ \_\_\_\_\_

- 8 Complete the table.

Percentage	Fraction	Decimal
50%	$\frac{1}{2}$	0.5
7%	$\frac{7}{100}$	
	$\frac{1}{5}$	0.2
57%		0.57

- 9 Leona has a large bag of apples.  
There are 180 apples in the bag.  
She uses  $\frac{1}{4}$  of the apples to make some juice.  
She uses 20% of the apples to make some pies.  
How many apples are left?

Circle how confident you feel with percentages.

1      2      3      4      5  
Not      Very  
confident      confident

apples \_\_\_\_\_

## Optional Task

# Miss Ledger



Favourite number: 17

I joined Wickham maths department in: 2013

Favourite maths topic to teach: Solving equations

If I didn't teach maths I would teach: Dance

An interesting fact about me: I am left handed and have green eyes, which according to my mam means I am a witch (and it is very rare!)

## Wizardsing Subject — Problem Solving!



Help me find the value of each item.



The different items stand for eleven of the numbers between 0 and 12. Each item has a different value. The items have the same value all the way through.  
E.g. the cauldron has the same value in every calculation.

$$\text{wand} \times \text{wand} = \text{owl}$$

$$\text{cauldron} \times \text{cauldron} \times \text{cauldron} = 60$$

$$\text{cauldron} \times \text{frog} = \text{potion bottle}$$

$$\text{cauldron} \times \text{scarf} = 60$$

$$\text{wand} \times \text{lightning bolt} = \text{wand}$$

$$\text{wand} \times \text{scarf} = \text{brush}$$

$$\text{lightning bolt} \times \text{potion bottle} = \text{potion bottle}$$

$$\text{wand} \times \text{cauldron} = \text{die}$$

$$\text{cauldron} \times \text{spell book} = \text{spell book}$$

$$\text{die} \times \text{cauldron} = \text{brush}$$

$$\text{spell book} \times 60 = \text{spell book}$$

$$\text{cauldron} \times \text{cauldron} = \text{scarf}$$

### ONLY READ IF YOU NEED SOME HINTS!

- Values can only be between 0 and 12. List the numbers and cross off as you assign them to a item.
- Start with the cauldron.
- Potion bottle - a number multiplied by something that doesn't change the answer?
- The spell book – think about this second number and how the answer is the same as what you multiplied by?



**#EXTENSION** Explain your reasoning. How did you start? Did you go wrong? How did you know? How do you know you are right?

Optional Task

# Miss Ledger



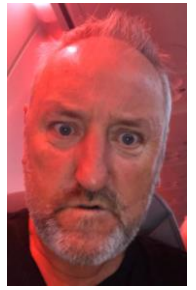
You can use this page for any working out you need to do – don't forget to explain your reasoning if you can!



## Optional Task



# Mr Henderson



Favourite number:  $\sqrt{2}$

I joined Wickham maths department in: 2018

Favourite maths topic to teach: I'm loving Angles instead

If I didn't teach maths I would teach: Drama

An interesting fact about me: I once was cheated on a TV game show

## Wizarding Subject – Magic Maths!

### the Quidditch World Cup

Gryffindor won 50% of their 10 games

Slytherin won 40% of their 20 games

Hufflepuff won 30% of their 30 games

Ravenclaw won 20% of their 40 games

Wickham won 10% of their 50 games

Each win scores 3 points. Put the league in order.

	Team	Points
1		
2		
3		
4		
5		

### Mystical Pets

Professor Jaggawagga has an impressive pet collection.

One third of his collection are bats and the rest are spiders.

He has 12 more spiders than bats.

How many pets does he have in total?

### SpellMaster

Harry has mastered  $\frac{7}{15}$  of the spell book.

Hermione has mastered  $\frac{4}{9}$  of the book.

And Ron has perfected  $\frac{5}{11}$ .

Who has mastered the most?

### Magical Beasts

Follow the steps.

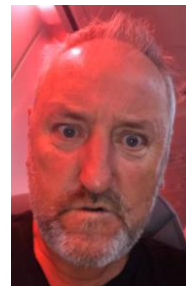
Only those who reach the end will know the magical creature...

1. Write down a number between 1 and 9.
2. Divide by 10 (enter the mysterious world of decimals).
3. Add 0.1.
4. Multiply by 90. ( if you need to use a magical calculation box here use the spell "calculartus").
5. Now add together the digits in your answer ( example if you have 42 add 4 and 2 to get 6).
6. Now it is 5 that must be subtracted.
7. From the alphabet find the letter that is in the position of your answer ( if answer is 3 the letter is C).
8. Write down the very first COUNTRY you think of beginning with this letter.
9. Using the second letter of the country write down the first ANIMAL you think of.
10. Look at the top of the page...

## Optional Task



# Mr Henderson



You can use this page for any working out you need to do and to record your answers!

## The Quidditch World Cup

	Team	Points
1		
2		
3		
4		
5		

Mystical Pets  

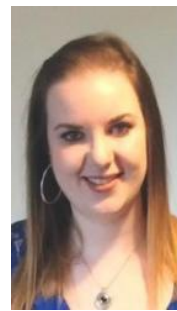
SpellMaster 



## Magical Beasts

## Optional Task

# Miss Johnson



Favourite number: 8

I joined Wickham maths department in: September 2019

Favourite maths topic to teach: Anything involving algebra

If I didn't teach maths I would teach: Business Studies

An interesting fact about me: I love baking and almost applied for GBBO!

## Wizarding Subject – Potions

Warning! Ingredients are listed, but even if Muggles would gather and brew the correct herbs, insects, and other materials (some of which are poisonous), they would not be able to create the potions listed here without the magic of a Wickham School classroom.

### Forgetfulness Potion

(Makes enough for 5 people)

- 10 tablespoons of powdered Dragon scales
- 2.5 tablespoons of Salamander blood
- 30 porcupine quills

How could we make an ingredient list for 10 people? 1 person?

Ingredient	10 people	5 people	1 person
Powdered dragon scales	10 tbsp		
Salamander blood	2.5 tbsp		
Porcupine quills	30		



### Shrinking Potion

(Makes enough for 2 people)

- 5 chopped daisy roots,
- 3 skinned shrivelfig
- 1 sliced caterpillar
- one rat spleen
- dash of leech juice

Ingredient	10 people	1 person	30 people	5 people
Chopped daisy root				
Skinned shrivelfig				
Sliced caterpillar				
Rat spleen				
Leech juice				

### Design your own potion!

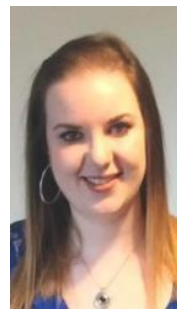
Decide what it is for. It must have 6 ingredients – use your imagination! Record the recipe for 5 people. Show how much of each ingredient you would need for 1, 100 and 200 people.

Name of your potion: \_\_\_\_\_

Ingredient	5 people	1 person	100 people	200 people

## Optional Task

# Miss Johnson



You can use this page for any working out if you need to!



## Optional Task

# Mrs Wheatley



Favourite number: 25

I joined Whickham maths department in: 2014

Favourite maths topic to teach: Quadratic Equations

If I didn't teach maths I would teach: Textiles

An interesting fact about me: I have a song named after me.

## Wizards Subject—Currency!

1 Galleon = 29 Sickles

1 Sickle = 17 Knuts

## Hogswyade Shopping Trip

Use the price list for Honeydukes (sweet shop) on the next page.

1. Neville Longbottom wants to buy some Levitating Sherbet Balls. In his pocket he has 2 sickles and 9 knuts. How many can he buy?
2. Hermione and Ron decide to buy Harry some Bertie Botts Every Flavoured Beans, they have 70 knuts between them. How many packets can they buy? What size packets can they get?
3. Hermione has 2 sickles, how many Chocolate Frogs can she buy? How much change will she have?
4. How much would it cost for 2 Blood Flavoured Lollies, 2 Ice Mice, 1 Large bottle of Acid Pop and a small packet of Bertie Botts Every Flavoured Beans?

## ★ Gringotts Bank Exchange

Today's exchange rate at Gringotts Bank is £1.00 to 5 sickles and 5 knuts

1. ★ At the end of term Harry changes some 'wizards' money into 'muggle' money for his stay with his aunt and uncle. He changes 1 galleon, 8 sickles and 25 knuts, how much would he have in sterling?
2. ★ If Harry was given £ 3.00 at the Exchange how much wizard money had he changed? How many knuts would this give him altogether?
3. ★ Find out how much Harry and his friends would have paid in 'muggle money' for each of the books on Flourish and Blotts first years' price list Handy Hint: find the value of the book in Knuts before trying to calculate the cost in 'muggle money'.



## Optional Task

# Mrs Wheatley



## Wizarding Subject—Currency!

Honeydukes Price List		Sickles	Knuts
Chocolate Frogs			3k
Hot Butter Beer		2s	
Acid pop	small bottle	1s	3k
	large bottle	2s	4k
Tooth flossing string mints		1s	4k
Ice mice	1 costs		2k
Exploding bonbons ( 1 packet)		2s	
Blood flavoured lollies	1 costs		3k
Levitating Sherbet Balls	1 costs		4k
	1 packet of 4	3s	
Bertie Botts every flavoured beans	small packet	1s	2k
	large packet	3s	

## FLOURISH AND BLOTT'S (BOOKSELLERS) FIRST YEARS' PRICE LIST

THE STANDARD BOOK OF SPELLS (GRADE 1)		10S	10K
MAGICAL THEORY	1G	8S	25K
A BEGINNERS' GUIDE TO TRANSFIGURATION		5S	8K
ONE THOUSAND MAGICAL HERBS AND FUNGI	2G	8S	0K
MAGICAL DRAFTS AND POTIONS	4G	9S	14K
FANTASTIC BEASTS AND WHERE TO FIND THEM		6S	6K
THE DARK FORCES: A GUIDE TO SELF PROTECTION		18S	
A HISTORY OF MAGIC	2G	3S	14K

## Optional Task

# Mrs Wheatley

You can use this page for any working out you need to do and to record your answers!



## Hogstyeade Shopping Trip

- 1.
- 2.
- 3.
- 4.

## ★ Gringotts Bank Exchange

- 1.
- 2.
- 3.

## Optional Task

# Miss Neville



Favourite number: 17

I joined Whickham maths department in: 2016


Favourite maths topic to teach: Solving Equations

If I didn't teach maths I would teach: Disney Studies

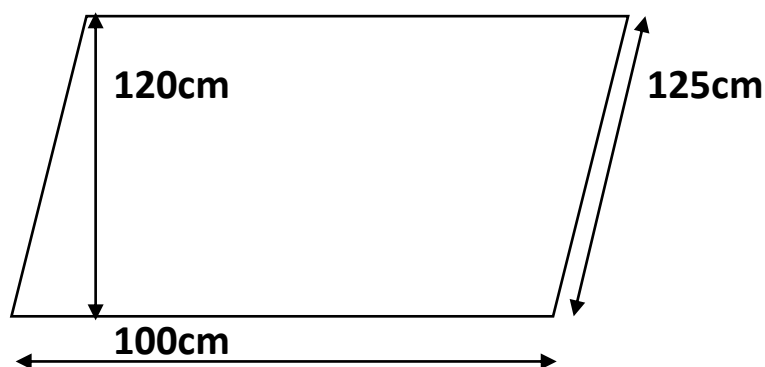
An interesting fact about me: Obsessed with Disney

## Wizarding Subject — Herbology

1. My greenhouse has lots of herbs and fungi in it to make medicine and potions. I have a green house that is the shape of a **triangle**. Along the bottom of the triangle I have 6 Mandrakes that need a 30cm space each. Directly up the right hand side of the greenhouse I have 8 Devil Snare that take up 50cm each. The rest of my greenhouse consists of 3 Gillyweed, 10 Flitterbloom, 7 Fanged Geraniums and 15 Bouncing bulbs. What is the area of my greenhouse?

**#EXTENSION—** How many Mandrake and Devil Snare would I have if the  area of my greenhouse was  $11250\text{cm}^2$

2. Here is a diagram of my magic pumpkin patch. What is the area of it? What is the perimeter of it?



3. Design your own vegetable patch on the next page. It has to have an area of  $500\text{cm}^2$ . You can't draw it to scale so please include your measurements. It can be any shape you like. Include some magical herbs and plants of your choice.

## Optional Task

# Miss Neville



## Wizarding Subject — Herbology

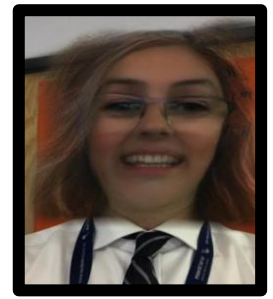
3. Design your own vegetable patch on this page. It has to have an area of  $500\text{cm}^2$ . You can't draw it to scale so please include your measurements. It can be any shape you like. Include some magical herbs and plants of your choice.

A large empty rectangular area for drawing a vegetable patch, bounded by a black line.



## Optional Task

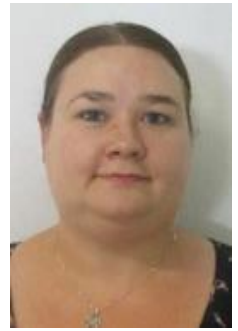
# Mr Sythons



You can use this page for any working out you need to do!

## Optional Task

# Mrs Franklin



Favourite number: 13

I joined Wickham maths department in: 2016

Favourite maths topic to teach: Ratio

If I didn't teach maths I would teach: Law

An interesting fact about me: I have a cat called Sushi

## Wizarding Subject – Quidditch!

Harry flies over following co-ordinates during a quidditch match.

Can you follow each of his flight paths to create a character from the popular series?

### Flight path 1

(4, 1), (4, 2), (2, 1), (0, 4), (-2, 4), (-2, 3), (0, 0), (1, 0), (2, 1), (3, 0), (5, 2), (4, 3), (2, 2), (0, 5), (-1, 5)

### Flight path 2

(4, 3), (3, 6), (4, 7), (1, 7), (4, 7), (4, 8), (3, 9), (3, 10), (3, 9), (4, 8), (8, 8), (7, 9), (4, 10), (3, 11), (1, 11), (-1, 8), (-2, 8)

### Flight path 3

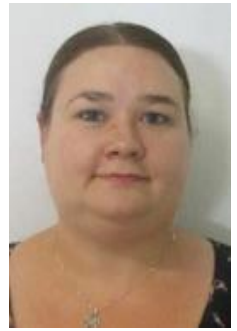
(1, 6), (-1, 7), (-2, 8), (-3, 5), (-4, 4), (-4, 2), (-5, -2), (-6, -3), (-6, -5), (-11, -5), (-12, -6), (-12, -7), (-8, -9), (10, -5), (11, -5), (12, -6), (10, -7), (7, -8), (3, -7)

### ★ Flight path 4

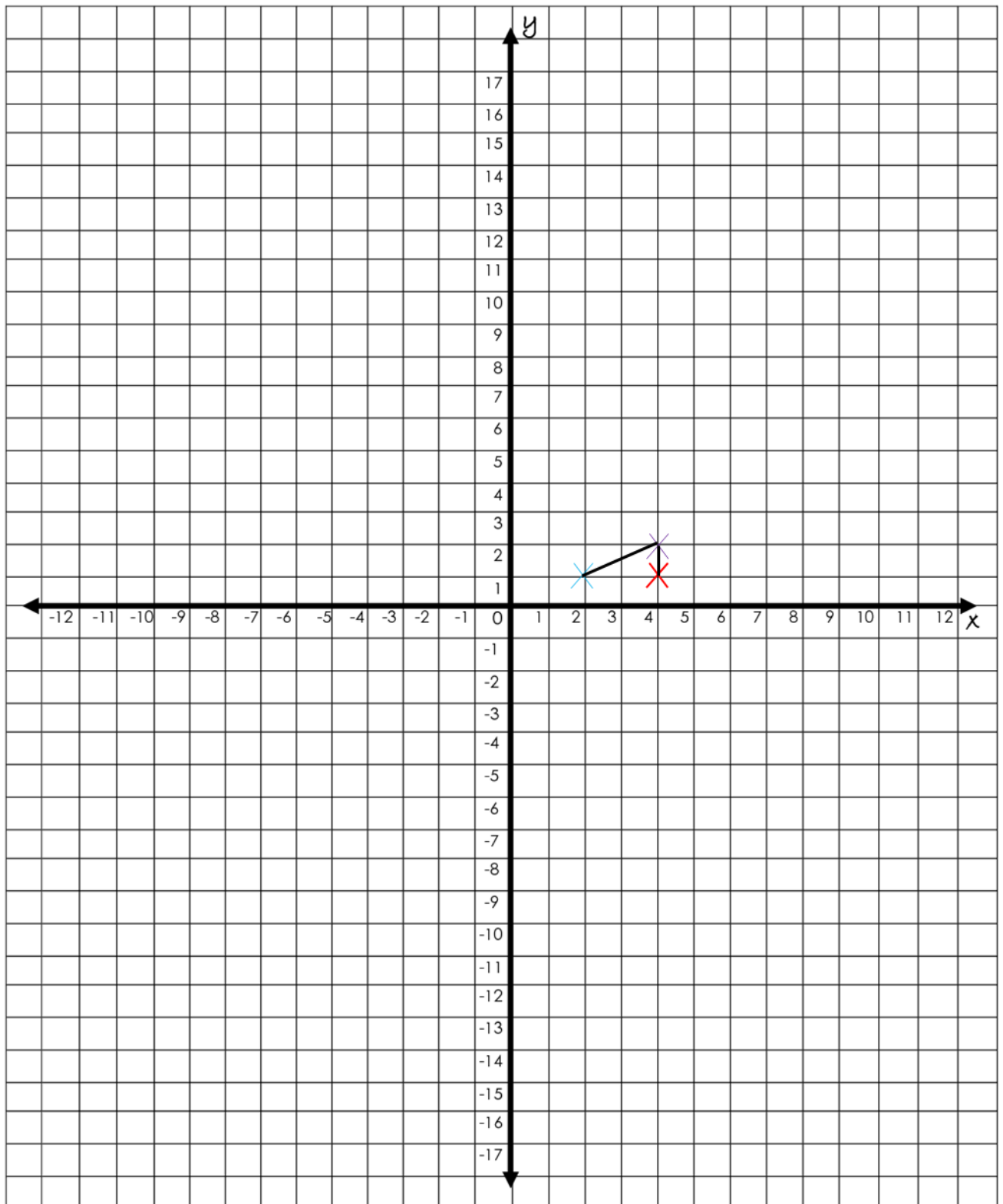
(-6, -4), (6, -5), (-6, -5), (-7, -6), (10, -5), (6, -5), (6, -4), (3, -1), (-1, -1), (-4, -3), (4, -3), (6, -4), (5, -2), (4, 1)

## Optional Task

# Mrs Franklin



Plot the coordinates and join them together with a straight line as you go. The first three have been done for you.





## Optional Task

# Miss Allon



Favourite number: 64

I joined Whickham maths department in: Sept 2020

Favourite maths topic to teach: Algebra

If I didn't teach maths I would teach: English literature or Law

An interesting fact about me: I **love** dance, singing and acting.

## Wizarding Subject — History of Maths-gic!

My challenge to you is to research a famous mathemagician. In the space below can you tell me why they are famous and some interesting facts about the mathematician?

You could write about them or even create a poster. Be as creative as you like!

If you are stuck why not research Pythagoras, Eratosthenes, Ada Lovelace, Rene Descartes or even Rachel Riley!

## Optional Task

# Mr Bezzina



Favourite number: 5

I joined Wickham maths department in: September 2021 (like you!)

Favourite maths topic to teach: Solving equations

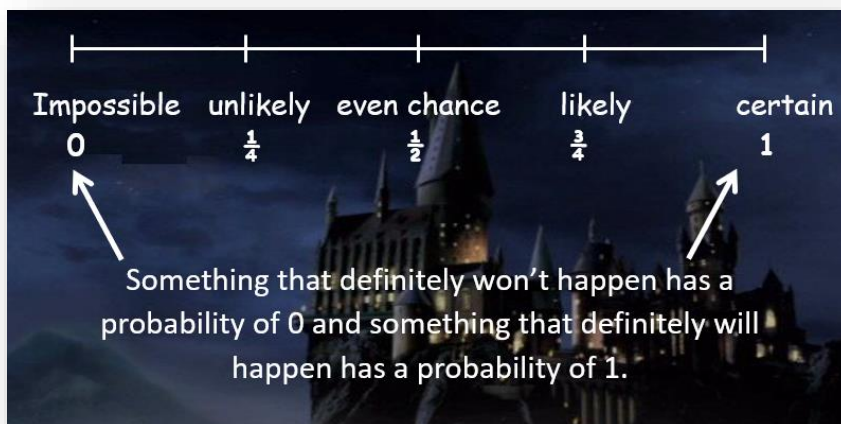
If I didn't teach maths I would teach: History

An interesting fact about me: I have taught maths in Africa

## Wizarding Subject – Divination

It teaches methods of divining the **future**, or gathering insights into **future** events, through various rituals and tools

You can mark probability of an outcome happening on a probability scale



### TASK 1: Where do you think the following would go on the probability scale?

1. Mr Bezzina was an extra in Harry Potter and the Chamber of Secrets?
2. There is a person in Britain called Ronald Weasley
3. Harry tosses a coin and it lands heads up.
4. Someone at Wickham School has watched all 8 films in one day.
5. Someone in your new year 7 class has read all 7 Harry Potter books.

**TASK 2:** The sorting hat is trying to decide which house at Hogwarts to put someone in. There are 4 outcomes, listed below – each one equally likely

Gryffindor  
Ravenclaw  
Slytherin  
Hufflepuff

What is the probability that a new pupil will be placed in Ravenclaw? – answer in words

**#EXTENSION:** What is the probability that a new pupil will be placed in EITHER Ravenclaw OR Hufflepuff? ★

**TASK 3:** The letters of the name **HERMIONE** are placed in a hat.

- a) How many options are there?
- b) What is the probability that the letter **H** will be pulled out of the hat?
- c) What is the probability that the letter **E** will be pulled out?
- d) What letter would be impossible?

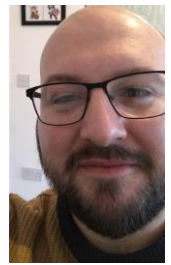
**#EXTENSION** Can you make some questions like this for your own name? ★

**#EXTENSION:**

Where you've answered in words, can you change your answers to fractions? For example, even chance is  $\frac{1}{2}$  ★

## Optional Task

# Mr Bezzina



You can use this page for any working out you need to do and to record your answers!

Impossible

Unlikely

Even Chance

Likely

Certain

0

0.5

1

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## Optional Task

# Mr Finke



Favourite number: 19

I joined Whickham maths department in: 2016

Favourite maths topic to teach: Algebra

If I didn't teach maths I would teach: P.E.

An interesting fact about me: I am from Canada

## Wizarding Subject – Astronomy!



This picture is of a Super Blood Wolf Moon. It occurred on 10<sup>th</sup> January, 2020. Every **29.5 days** there is another full moon and every full moon has a different name. The last full moon for the year 2020 is going to be called The Cold Moon.

Can you work out the date of this last full moon of 2020?  
(You must show all of your work)

## Optional Task

# Ms Wilson



Favourite number: 6

I joined Whickham maths department in: September 2020

Favourite maths topic to teach: Prime factorisation

If I didn't teach maths I would teach: History

An interesting fact about me: I keep hens in my back garden

## Wizardsing Subject — Time Turner!

A time turner is a special device used to turn back time. It is very useful to help you get all of your homework done! The number of times you turn the time turner corresponds to how many hours you go back in time. For example, two turns takes you back two hours.

1. Can you put the following times in order from shortest to longest?

3 hours                      92mins                      1.5 hours  
2 hours                      1 hr 20 mins  
6000 seconds                      600 seconds  
2 <sup>3</sup>/<sub>4</sub> hours                      156 minutes  
125 minutes                      2 <sup>1</sup>/<sub>4</sub> hours

2. Amy is a Year 7 student starting in September. She has to catch the bus at 8:15am, it takes her 15 minutes to shower,  $\frac{1}{4}$  hour to have breakfast, 5 minutes to pack her school bag and 4 minutes to walk to the bus stop. What time does she have to get out of bed?

## Optional Task

# Mr Wood



Favourite number: 24

I joined Whickham maths department in: January 2017

Favourite maths topic to teach: Quadratic Equations

If I didn't teach maths I would teach: Sailing & Mountaineering

An interesting fact about me: I love cooking. My Lamb Bhuna is

World famous in Whickham

## Wizardsing Subject – Magic Maths!

How many different ways can you represent  $9\frac{3}{4}$ ? Be as creative as possible.

Think about words, symbols, diagrams, additions, subtractions, decimals, pictures etc.

e.g. 9.75

