

University of Warwick institutional repository: <http://go.warwick.ac.uk/wrap>

This paper is made available online in accordance with publisher policies. Please scroll down to view the document itself. Please refer to the repository record for this item and our policy information available from the repository home page for further information.

To see the final version of this paper please visit the publisher's website. Access to the published version may require a subscription.

Author(s): Mary Briggs, Jane Daniell, Jane Farncombe, Nicky Lenton and Alan Stonehouse

Article Title: Wizarding Maths

Year of publication: 2002

Link to published version:

<http://www.atm.org.uk/mt/archive/mt180files/ATM-MT180-23-27.pdf>

Publisher statement: None

Some small editing changes to your intro, Mary – are they OK?

(overall title) WIZARDING MATHS

Mary Briggs, Jane Farncombe, Jane Daniell, Nicky Lenton and Alan Stonehouse

The following investigation into maths from a story started almost by chance with a conversation in a seminar with final year primary ITE (2) students. This took place just before the release of the film of the first of the Harry Potter books (3) that have found international favour among children and grown-ups. The conversation also centred on making maths motivating for children in school by drawing upon interests from outside school. The Harry Potter books were an example of a good stimulus for ideas.

It was refreshing to hear students thinking in a cross-curricular way about mathematics. **Could you please clarify, Mary?** as a contrast to the discussion about numeracy hours. This kind of starting point, which was so familiar to teachers who trained at a similar time to myself, has ceased to play the same role in our training of students. Yet, when looking at curriculum 2000 and the emphasis on numeracy across the curriculum, it would appear to be a good way of getting students to think about the links between subjects.

Deleted: in **this way**

I started the ball rolling by producing a good old-fashioned topic web brainstorm (see figure 1). The group of students then worked on specific ideas to produce resources for use in the classroom.

They were working in their own time, before their final teaching placement and I was impressed by their creativity. There is clearly a lot more that could be worked on from this particular starting point and we hope this article will provide food for thought to students and teachers alike.

Mary – have I changed the sense of what you wanted to say too much here? For **both long-standing teachers and those** about to join the profession, it is reassuring to see that creative approaches are still **alive and kicking** in the classrooms of the future, and from non-maths specialists! Fine

Mary Briggs lectures at the University of Warwick

At the time of writing (OK?) Jane Farncombe, Jane Daniell, Nicky Lenton and Alan Stonehouse were Year 4 BA QTS students (1)

Fine

Footnotes:

(1) Qualified Teacher Status (2) Initial Teacher Education (3) J.K. Rowling, *Harry Potter and the philosopher's stone*,

Figure 1 ('Maths from Harry Potter' topic web in separate file – this can be reduced)

[Ok presumably you will be able to do that your end?](#)

COLLECTING CANDY BOARD GAME

devised by Nicky Lenten

The aim of the game is to roll a dice to travel from start to finish on the board (see page xx). On the way, players to collect as many sweets as possible whilst faced with challenges from the fat lady and the basilisks. It is not all doom and gloom however, it is possible to overcome their challenges with the help of the moving staircases. Sweets collected must be recorded onto a tally table, which can be used to create a simple bar chart.

Good luck!

HERE IS SMALLER VERSION OF COLLECTING CANDY DATA SHEET

(below)



Name..... Date.....

Complete the following tally table

Type of sweet	Tally	Total

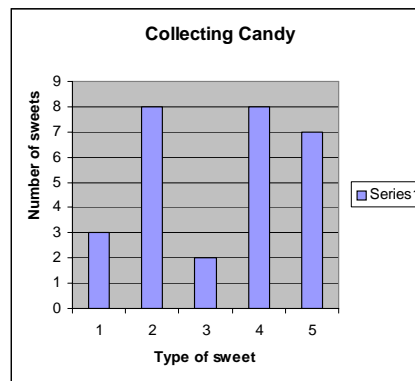
Now create a bar chart using the information from your tally table

The tally table and bar chart that result from the board game can be varied to suit different children and to include different information, e.g.

- intervals on the graph can increase by more than one
- children can be asked to label and choose the appropriate scale on a blank graph
- the range of sweets to be collected can be extended e.g. ice mice, creamy chunks of nougat and black pepperimps

Type of sweet	Tally	Total
Fizzing whizzbees		3
Cockroach cluster		8
Exploding bonbons		2
Levitating sherbert balls		8
Toothflossing string mints		7

(Might not need/be room for these bar & tally charts)



The completed graphs can be used to generate and answer questions to encourage the children to interpret the graphs.

Children can also compare and contrast different representations of data e.g. pie charts and bar charts.

PAGE TWO OF 4-page-spread (full colour)

COLLECTING CANDY GAME- BOARD

(hard copy/separate file)

WIZARDING MONEY

Currency at Hogmeads consists of galleons (g), sickles (s) and knuts (k)
 In the novel 'Harry Potter and the Philosopher's Stone',
 1 gold galleon is equal to 17 silver sickles
 1 silver sickle is equal to 29 knuts.

You might decide to alter this according to the abilities of the children.

HONEYDUKES PRICE LIST

1 galleon is worth 5 sickles. 1 sickle is worth 5 knuts

Chocolate frogs		3k
Hot butter beer	2s	
Acid pop	small bottle	1s 3k
	Large bottle	2s 4k
Droobles best blowing gum	1s	
Tooth flossing string mints	1s	4k
Ice mice each		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

FLORISH AND BLOTTS (Booksellers) FIRST YEARS' PRICE LIST

<i>The standard Book of Spells (grade 1)</i>	<i>10s 10k</i>
<i>A History of Magic</i>	<i>2g 3s 14k</i>
<i>Magical Theory</i>	<i>1g 8s 25k</i>
<i>A Beginners' Guide to Transfiguration</i>	<i>5s 8k</i>
<i>One Thousand Magical Herbs and Fungi</i>	<i>2g 8s 0k</i>
<i>Magical Drafts and Potions</i>	<i>4g 9s 14k</i>
<i>Fantastic Beasts and Where to Find Them</i>	<i>6s 6k</i>
<i>The Dark Forces: A Guide to Self Protection</i>	<i>18s</i>

Hogmeades Shopping Trip

The following questions were devised for KS2 pupils by Jane Farncombe can we lose this name here, mary?, fine to accompany the 'Honeydukes price list' (PAGE XX). They are designed to meet the national numeracy strategy and national curriculum requirements for pupils to solve word problems involving money.

Each question in a 'bubble'/cloud/box please.

Hermione has 2 sickles, how many chocolate frogs can she buy? How much change will she have?

Neville Longbottom wants to buy some Levitating Sherbet Balls. In his pocket he has 2 sickles and 9 knuts. How many can he buy?

How much change would you have from a Galleon if you bought 2 bottles of hot butter beer?

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?

Draco Malfoy needs 10 packets of Exploding Bonbons to disrupt the next quidditch match between Gryffindor and Slytherin. How many galleons will he need to spend to achieve his sly plans?

Hermione and Ron decide to buy Harry some Bertie Botts Every flavoured Beans, they have 13 knuts between them, which packet size can they buy?

How many packets of Droobles Best Blowing Gum can you buy with 17 knuts?

Gringotts Bank Exchange

This has been changed for readability – please check it is OK

Converting money

When Harry Potter starts at Hogwarts is the school's name Hogsmeade is the name of the village with the shops nearest the school, he has to convert his 'muggle' currency to wizard money.

Deleted: Hogsmeade

An exchange rate can be given, for example;
£1.00 is worth 1 galleon and 2 sickles

Children could be asked to find £3 and £5 worth of 'wizarding' money
The exchange rate could be changed or the Galleon devalued.

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

*If Harry was given £ 3.00 at the exchange how much had changed – **unclear?**[how much has he in sickles and knuckles?](#) How many knuts would this be altogether?

*At the end of term Harry changes some 'wizarding' 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?

* Find out how much Harry and his friends would have paid in sterling for each of the books on Florish and Blotts first years' price list. If you use a calculator please round your answers to 2 decimal points. (Answers given on page xx – **please confirm which exchange rate these are for**).[Not sure?](#)

Answers to final problem –to go in margin somewhere

Solutions : £1 = 150 knuts

Book 1 costs £2

Book 2 costs £7.25

Book 3 costs £5.00

Book 4 costs £1.02

Book 5 costs £8.12

Book 6 costs £14.98

Book 7 costs £1.20

Book 8 costs £3.48.

Other 'Wizard' Ideas

If these don't fit here – perhaps squeeze some in a gap somewhere in journal

- 3 times table using 'Fluffy, the three headed dog' e.g. each head has 2 eyes, $3 \times 2 =$, each mouth has twelve teeth, $3 \times 12 =$

 - How old is Professor Dumbledore?
Mr Flamel was 665 years old last birthday. Dumbledore is 10% older. When was he born? How old is he? When was Mr Flamel born? What are their ages added together? How old was Mr Flamel when Dumbledore was 597? In 1945, Dumbledore discovered 12 uses for dragons' droppings, how old was he then? What other questions can you ask?

 - Explore ratio using different sized books from 'Flourish and Blotts'. Some are the size of postage stamps others are the size of paving slabs ... and many sizes in-between.
- If it takes the Hogwart's Express $3 \frac{1}{2}$ hours to reach Hogsmeade station, at what time will it need to leave platform 9 $\frac{3}{4}$ in order to get there at –
 1. 10:30 p m
 2. 9:45 p m
 3. 7:15 p m
 4. 22:30
 5. 17:00

 - If Harry's Nimbus 2000 is travelling at 10 metres per second, how long will it take him to catch the snitch? If it is
 1. 200m away
 2. 100m away
 3. 325m away

 - If each owl can carry up to 5kg of post, how many owls will be needed to carry the Christmas presents from Mrs. Weasley to Harry, Hermione and Ron ? If the presents weigh ... 50kg ... 65 kg ...

- Use the 'Mirror of Erised' to explore reflection

