

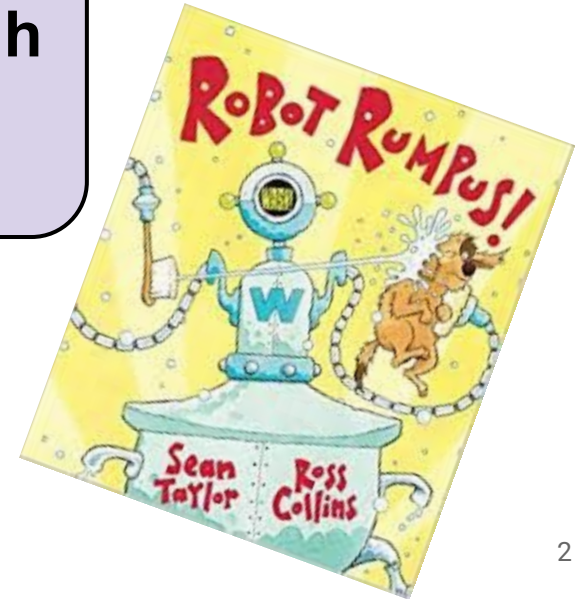


# Highland Numeracy and Mathematics

*Exploring Maths  
Through Stories  
At Home*



## Exploring Maths Through Stories At Home



# Exploring Maths Through Stories at Home



## Quick Links

Click on the text to be taken to the relevant section of the document or just browse through the document:

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◆ Early

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# Exploring Maths Through Stories at Home



## Exploring maths through stories

- Story books are predominately used for literacy related activities. *Every story can be a maths story.*
- Here we'll show you a few ways that stories could be used for exploring concepts in maths.
- Watch the two videos to get ideas about how you could talk with your children about some of the ideas in the stories. Although the activities are based in a classroom, similar things could be done at home for example setting up a mini obstacle course.



# Exploring Maths Through Stories At Home



## Read, Write, Count

Here we have a selection of ideas for activities that could be explored after reading books that were gifted to P1, P2 and P3 pupils through the Read, Write, Count Programme.

[Early Level - P1](#)

[First Level - P2/P3](#)

# Exploring Maths Through Stories At Home



## Read, Write, Count: Early

The stories below were gifted to P1s in 2020 as part of the Bookbug Programme. Click on each book title to be taken to a page about that book including the book being read by the author and a maths related activity to try.

[The Station Mouse](#)

[The Prince and the Witch and the Thief and The Bears](#)

[Sophie Johnson Unicorn Expert](#)

Click [here](#) to be taken to a link with more detail about these three books if you want to explore them further.

# Exploring Maths Through Stories At Home



## Read, Write, Count: Early

### The Station Mouse



On the inside cover you can see an outline of Maurice's' day. Being nocturnal, Maurice wakes up at 10pm (as this is when the station begins to empty) and goes to bed at 6am.

Draw a timeline of Maurice's day on a large piece of paper.

Ask your child to compare this day to their own. When do they get up and go to bed? What activities do they do during the day and at what time?

Create your own daily routine map/plan and display it in the house.

# Exploring Maths Through Stories At Home



## Read, Write, Count: Early

### The Prince and the Witch and the Thief and The Bears



In **The Prince and the Witch and the Thief and the Bears**, the prince travels through the faraway kingdom to **Mount ReeliReeliTol**.

You child could draw a map of the kingdom and include as much detail as possible, such as where the bears live, the cliff and **Castle Broccoli**.

Before starting the map, look at maps of your local area and discuss key features and symbols.

For an extension activity, you could create a map of your home, or you could map your local playground or outdoor space. You can measure the distance between objects and the size of the space and record this to help you create a map.



# Exploring Maths Through Stories At Home



## Read, Write, Count: Early

### Sophie Johnson: Unicorn Expert



There are a number of different everyday objects visible in Sophie's kitchen which could be used to explore size and volume.

Collect items visible in the picture, such as a washing up bottle, mugs, biscuit tin, milk bottle, cereal packet, a pan and a kettle.

Investigate the items further: What size is it? How much does it hold? Ask pupils to measure and record. Move the objects around the groups until they have investigated a few different items. Now have a discussion about the objects. Which was the biggest? Which could hold the most and which the least? Did they notice anything about the items?

# Exploring Maths Through Stories At Home



## Read, Write, Count: First

The stories below were gifted to P2 and P3s in the past as part of the Read, Write Count Programme. Click on each book title to be taken to a page about that book including the book being read by the author and some maths related activity to try.

[Never Tickle A Tiger](#)

[Wanted](#)

[Robot Rumpus](#)

Click [here](#) to be taken to a link with more detail about the books gifted to P2s in 2020.

Click [here](#) to be taken to a link with more detail about the books gifted to P3s in 2020

# Exploring Maths Through Stories At Home



## Read, Write, Count: First

### Never Tickle A Tiger



#### Data Handling:

- Find out about people's favourite animals.
  - Create a graph from the information and pose questions about this.
- Create fact files about different animals e.g. weight, height etc.
  - Use the information to create a graph from the information and pose questions about this.

#### Multiplication and Division

- Count number of feet/eyes etc.
- Alter the questions e.g.
  - If there are 16 eyes, how many animals are there? How do you know?
  - If there are 5 animals with 2 legs and 3 animals with 4 legs. How many legs are there?

#### Spatial Awareness:

- Activities around positional language e.g. create your own obstacle course using positional language from the story.
- Explore/discuss maps of local places (e.g. town centre, Landmark, museum, nature reserve).
- Recreate zoo (or local area) out of blocks with enclosures etc.
- Recreate zoo (or local area) on their own map (complexity will vary).

# Exploring Maths Through Stories At Home



## Read, Write, Count: First

### Wanted



### Numerals ID/Counting/Fractions:

- Carrot ratings.
- Counting animals in each picture.

### Data Handling:

- Pupils give star ratings to books in their book corner in classroom.
- Create a tally and then a graph of how many people have read books.
- Ask questions about the data e.g. was the most read book also the most popular book etc.

### Sorting:

- Organise books at home:
  - Alphabetically
  - By genre
  - By interest etc.

### Data Handling:

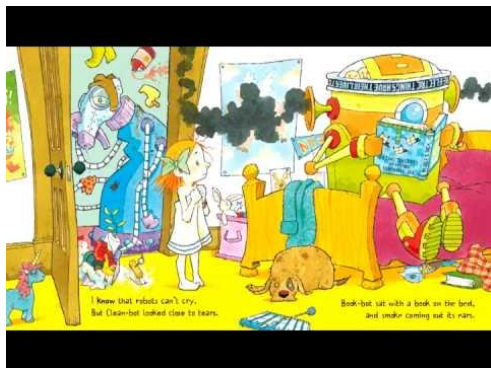
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# Exploring Maths Through Stories At Home



## Read, Write, Count: First

### Robot Rumpus



#### Shape and Space:

- Discuss similarities and differences between the robots and the shapes they are made up from using language of shape e.g. 3D, curved, straight, edge etc., names of 3D shapes (or 2D shapes that are similar). (Or other shapes found within the story)
- Discuss why the shapes have been chosen for each robot.
- Create their own robot and describe the shapes they've used.

#### Density and Floating or Sinking (from bath scene)

- Predict and test a range of items.
- Put in items that challenge thinking
- Orange experiment: <https://www.stemlitleexplorers.com/en/orange-density-experiment/>

#### Forward/Backward Number Word Sequence

- 7 robots in a bed (adapted from 10 in the bed)

#### Patterns and symmetry

- Explore different patterns and come up with their own pattern for their robot.
- Explore symmetry (both reflective and radial/rotational).
- Create their own symmetric patterns when designing their own robot.

# Exploring Maths Through Stories At Home



## Ideas for stories: Early

To access this as a word document, click [HERE](#)

<p><b>Share favourite stories</b></p> <p>Encourage your child to tell you about their favourite story. Ask your child to retell the story to you.</p> <p><b>Skill: Sequencing</b></p>	<p><b>Play I-Spy...</b></p> <p>Look at pictures in the story to help your child learn about positional language e.g. on top, beside, under, over, below, near, far away etc. I spy something <b>beside</b> the lion.</p> <p><b>Skill: Maths Language</b></p>	<p><b>Shape hunt</b></p> <p>Look for different shapes in the story.</p> <p>Create a chart and use tally marks to see how many different shapes you can find.</p> <p><b>Skill: Shapes/Data Handling</b></p>
<p><b>Estimating &amp; Counting</b></p> <p>This is something that can be done as you share stories - you can count things on the pages that are the same colour, size, shape, animal etc.</p> <p>You can also count any household items e.g. socks, toys, leg bricks etc...</p> <p><b>Skill: Counting</b></p>	<p><b>Numbers</b></p> <p>Look at the numbers on the page. Can you find the number after 6? Can you find the number before 5? Read the numbers as you turn the page. Have a go at writing the numbers in the air or on scrap paper.</p> <p><b>Skill: Reading and Writing Numbers</b></p>	<p><b>Time</b></p> <p>Chose a time to read your favourite story - this could be bedtime. Look at the clock together - draw a picture to show your child when you are going to read together.</p> <p><b>Skill: Using a clock</b></p>
<p><b>Money</b></p> <p>Set up a bookshop/toy shop. Encourage your child to make the signs and decide prices.</p> <p><b>Skill: Monday: Role Play</b></p>	<p><b>Measuring</b></p> <p>Choose five different books. Place them in order from smallest to largest. Can you measure them? How many handspans wide/long?</p> <p><b>Skill: Measure</b></p>	<p><b>Maps</b></p> <p>Where does your story take place? Draw a map. What will you need to include? Trees, houses, people, hills, rivers etc.</p> <p><b>Skill: Interpreting Maps</b></p>

# Exploring Maths Through Stories At Home



## Ideas for stories: First

To access this as a word document, click [HERE](#)

<p><b>Measure/Data</b></p> <p>If you have any stories about animals (for example) you could create a fact file about that animal using the internet to find facts. Weight, Diet, Habitat etc. and compare this to other animals.</p> <p><b>Skill: Measure/Data</b></p>	<p><b>Measure</b></p> <p>Choose six different items from your book. Draw them onto scrap paper. Now decide how you could measure these items. E.g. Car - length, height, weight. Think about the units of measure you would use e.g. length: metres, centimetres, millimetres - which would be the most useful?</p> <p><b>Skill: Maths Language</b></p>	<p><b>Shapes</b></p> <p>Look for different shapes in the story. Draw and describe the shapes you can see in the story.</p> <p>Now go on a shape hunt at home. How many different shapes can you find?</p> <p><b>Skill: Identifying Shapes and their properties</b></p>
<p><b>Counting/Data Handling</b></p> <p>Categorise your books by genre (e.g. adventure, fairy-tale, space etc.) or categories items you find in the story (e.g. types of fruit, types of animals, words etc.) Create a chart to show how many there are. What is the most common book type you have?</p> <p><b>Skill: Counting/Data handling</b></p>	<p><b>Numbers - Equal to =, Not Equal to <math>\neq</math>, Less than &lt;, Greater than &gt;</b></p> <p>Choose five random numbers from your book (10, 14, 4, 50, 32) this could be page numbers. Create TRUE Statements e.g. <math>14 = 4 + 10</math>, <math>32 &lt; 14</math>, <math>50 &gt; 32 + 4</math></p> <p><b>Skill: Number - Equations and Inequalities</b></p>	<p><b>Time</b></p> <p>Make a timeline for your story. Imagine how long things would have taken to happen. E.g. 7.15am Harry got up. He had his breakfast at quarter to eight. You can use words, digital times and clocks.</p> <p><b>Skill: Sequencing Time</b></p>
<p><b>Share favourite stories - Book Award Ceremony</b></p> <p>Choose a few of your favourite stories. Now, decide which book is your favourite. E.g. first place, second place, third place etc. Explain why you have rated them like this.</p> <p><b>Skill: Ordinal Numbers</b></p>	<p><b>Symmetry</b></p> <p>Look at the pictures in your book, or on the cover. Can you find any symmetrical images?</p> <p>Create your own symmetrical pattern/picture.</p> <p><b>Skill: Symmetry</b></p>	<p><b>Maps</b></p> <p>Draw a map and describe the route the main character would follow. Add compass points - North, South, East, West</p> <p><b>Skill: Creating/Interpreting Maps</b></p>

# Exploring Maths Through Stories At Home



## Ideas for stories: Second+

There are lots of mathematical books that are suitable for children working at

- Second,
- Third,
- Fourth Level and beyond.

These include books that:

- Have puzzles,
- Involve exploring maths concepts
- Explore the history of maths... so something for everyone.

Here are a couple of favourites but if you want to explore a wider range, click on the link [HERE](#) for more suggestions:

