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Using Books: The Doorbell Rang

Solving problems involving sharing and talking about numbers

Children often enjoy sharing a book with an adult and talking about it.

Adults could provide suitable books with matching props to act them out. Here we focus on using The Doorbell Rang by Pat Hutchins, which is suitable for Reception children.

The Activity
Read and enjoy The Doorbell Rang a number of times with the group. Acting out the story involves children in sharing a number of cookies between different numbers of people (using salt dough cookies and paper plates).

Encouraging mathematical thinking and reasoning:

Describing
Tell me about this picture (showing children who are about to take cookies from the plate). What do you notice? What do you wonder?
Have you ever shared any cookies? Tell me about what happened. How many people were there?
Here are two (or three, or more) toys. Tell us how you could share the cookies out so that they all have the same number.

Reasoning
What will happen if another person turns up now? Can you explain why you think that?
How do Sam and Victoria know that there will be three cookies each? Shall we act it out?
Have they all got the same? How do you know? Can you prove it? Can you show me?

Opening Out
What do you think the children should/might do now? (Especially at the last doorbell.)
I wonder what would happen if there were a smaller number of cookies? An odd number of people at the door? Or a number giving remainders? E.g. ten shared between three or four.

Recording
Would you like to do a drawing/picture to show how Sam and Victoria could share out the cookies fairly? To show how you have shared them?

The Mathematical Journey

Counting:
  cardinality - the last number tells you how many there are

  counting for a purpose - to see if everyone has the same number

Comparing:
  saying who has more or not as many

  saying which numbers are more or less than others

Number symbols:
  matching numerals to amounts, or recording amounts informally
Dividing:
  sharing practically, using one-to-one and many-to-one

  understanding how 'dealing' results in equal shares and the same number each

  knowing 'halves' mean two equal parts of a whole
Problem solving:
  changing strategies, e.g. starting again and redistributing

  using adding and subtracting to make it fair

Development and Variation
Children could be invited to create their own version of the story, which an adult could
scribe for them to illustrate as a group book.

Instead of changing the number of children, you could change the number of cookies to
share, and explore which numbers 'work'.

A similar story about Pirate Panda is presented in Maths Story Time /9718 .
Another activity based on a book is Maisy Goes Camping https://nrich.maths.org/13533
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Other books which lend themselves to mathematical discussions include:
Jim and the Beanstalk by Raymond Briggs, about measuring the giant for glasses.
Mouse Count by Ellen Stowe Walsh, about a snake collecting mice to eat.

Resources
The Doorbell Rang by Pat
Hutchins: https://www.youtube.com/watch?
v=BXtu90JnDkM
https://www.youtube.com/watch?
v=BXtu90JnDkM
Twelve salt dough or playdough biscuits and
twelve paper plates.
Laminated pictures of biscuits and children
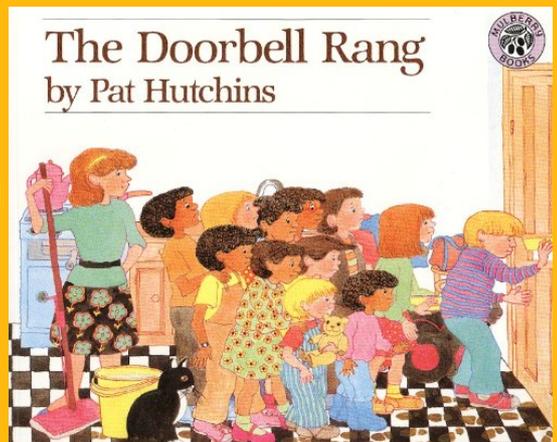from the book to arrange on a magnet
board.
A battery doorbell (a bike bell also works).
A range of materials for children to record.

This problem featured in an NRICH
Primary webinar
https://nrich.maths.org/nrich-live-apr-2021 in April 2021.

The Doorbell Rang
by Pat Hutchins

Download a PDF of this resource.

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