INVESTIGATIONS

Toby Russo, Bell Primary School

CHILDREN'S LITERATURE INSPIRED INVESTIGATION: WHERE IS THE GREEN SHEEP?

Read *Where is the Green Sheep*, by Mem Fox and Judy Horacek and tackle the investigation (Foundation - Year 6).
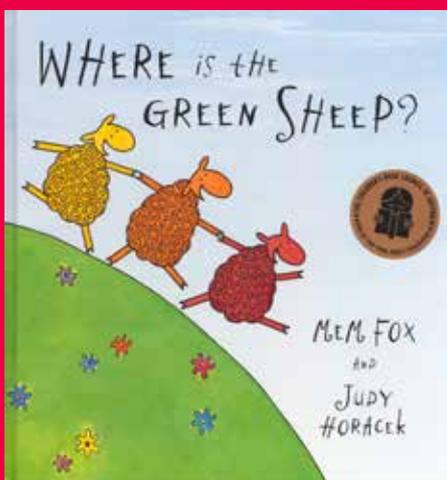
This much loved children's storybook has a simple and repetitive rhythm that appeals to younger children, but has the potential to be used to prompt mathematical learning for children of all ages. The story is about the search for a missing green sheep, with different sheep appearing on each page (e.g. 'the wind sheep, the wave sheep, the scared sheep, the brave sheep'). It introduces a range of simple vocabulary, including opposites, while touching on the themes of individuality and diversity, but could also be used to explore counting and probability.

These activities are increasingly challenging and encourage students to draw on a range of mathematical skills and understandings. Ideally you use several copies of this book to support the following activities, or view an online reading of the book.

COUNTING

How many sheep appear in this book in total, beginning with the blue sheep on the first page?

Find another two students and ask how many sheep they counted. If your answer is different, discuss how you each got your answer and see if you can agree on a total.

MULTIPLICATION

If there are six copies of the book in the library, how many sheep are there? How many green sheep? How many colourful sheep? You may want to use a picture to explain your answer.

THEORETICAL PROBABILITY

If you randomly choose a sheep from this book, what is the probability (chance) it would be colourful (not white)? Express your answer as a fraction and a percentage.

What is the probability it would be white? What is the probability it would be surfing? What is the probability it would be drinking?

SUBTRACTION

Incredibly some of the sheep in this book aren't white! How many colourful sheep did you count? How many sheep are white? How many more sheep are white than colourful?

INTRODUCING CHANCE

Imagine the sheep play a game of hide and seek and their order is all mixed up in the book. Is it more likely there would be a colourful sheep or a white sheep on the new first page? Explain how you know this.

Is it more likely that on the last page there would be a sheep eating cake or a sheep drinking tea? Explain how you know this.

EXPERIMENTAL PROBABILITY

Create a chance experiment about the colourful, green and white sheep in the book, based on the same probabilities. Conduct this experiment 50 times and compare the results to what you expected. Combine your results with those of three classmates. What can you say now about your results? See if you can now combine your results with more classmates and investigate your shared findings.

SHARE YOUR EXPERIENCE

How did students in your class approach the above investigation? Share your class's experience with the *Prime Number* editorial team (james.russo@monash.edu), for the opportunity to have it published in *Prime Number* as a resource to share with other teachers and students. If possible, try and include photographs of work samples and as well as of students engaging in the task.