

# INVESTIGATIONS

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## THE TWITS

Read *The Twits* by Roald Dahl, and invite your students to engage with these mathematical problems (Year 4 and above).

### WORMY SPAGHETTI (PROBABILITY, PAGES 9-17)

Mr Twit's 'squiggly spaghetti' had regular spaghetti mixed with worms. His bowl had 15 strands of spaghetti and five big, long worms. When Mr Twit twirled his first forkful of squiggly spaghetti, he got one big strand - or was it a worm?! What is the chance Mr Twit ate a worm on his first forkful? What is the chance his first forkful had real spaghetti?

#### EXTENSION

If there were two strands of 'spaghetti' on his next forkful, what are the chances they were both worms? When Mr Twit made the horrible discovery that he was actually eating worms, he had eaten three-quarters of his bowl. How many worms could there have been left in his bowl? In your opinion, what is the most likely number of worms left in his bowl? Explain why you think this.

### FUNNY WALKING STICK (LENGTH MEASUREMENT AND MULTIPLICATION, PAGES 18-23)

Every night Mr Twit added a small piece of wood, no thicker than a penny, to the bottom of Mrs Twit's walking stick. If a penny is about 2mm thick, how long do you think it took for Mrs Twit's walking stick to go from waist height to past her shoulder?

#### EXTENSION

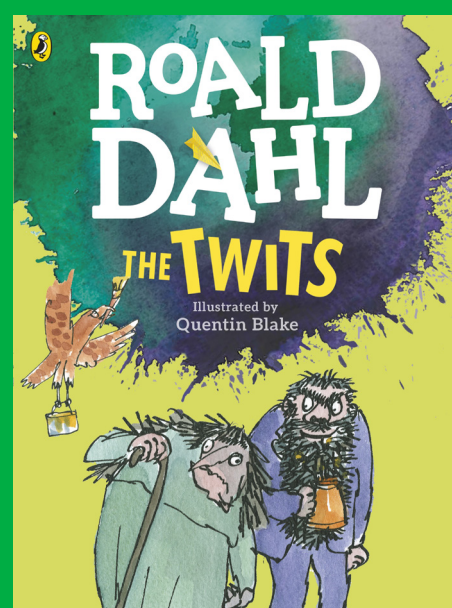
Mr Twit did exactly the same thing to the legs of Mrs Twit's stool, as he did to her walking stick. If Mr Twit used 10c coins instead of pennies, how much might his prank have cost him? If he was willing to spend \$300 on his prank, how tall could he have made the walking stick?

### MRS TWIT AND THE BALLOONS (PROPORTIONAL REASONING, PAGES 24-31)

Mr Twit had tied 60 balloons to Mrs Twit's arms and legs when he had his wicked idea to cut through the strings and release his wife, who went floating skyward. However, once Mrs Twit had bitten through 20 balloons, she stopped going up and just floated in the air. If Mrs Twit weighed 60kg, then how many balloons do you think it would take to keep Mr Twit floating in the air if he weighed 90kg? How many balloons do you think it would take to lift you off the ground? Explain your thinking.

#### EXTENSION

Imagine all the teachers in your school were tied up outside. What is the minimum number of balloons you estimate you and your classmates might need to send them flying into the sky?



### DREADED SHRINKS (NUMBER PATTERNS AND DECIMALS, LAST CHAPTER)

So it turns out that Mr Twit was right - The Shrinks are a real disease (at least in the story). Once you've caught the dreaded Shrinks, it works very quickly. For every hour that passes, your height halves. Mrs Twit is exactly 160cm at the beginning of the story, whereas Mr Twit is 180cm. How long will it take for Mrs Twit to be shorter than you? What about Mr Twit? How long will it take them to be shorter than a newborn baby? Shorter than a mouse? Shorter than an ant? So short, you could no longer see them with the naked eye?

How did students in your class approach the above investigation? Share your class' experience with the *Prime Number* editorial team ([primenumber@mav.vic.edu.au](mailto:primenumber@mav.vic.edu.au)), 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, as well as students engaging in the task.