INVESTIGATIONS

Toby Russo, North Fitzroy Primary School and James Russo, Monash University

THE MAGIC LOLLIPOP TREE

Mathematical investigations are wonderful opportunities to immerse all students in rich mathematical learning experiences, connect mathematical ideas and different representations, and provide opportunities for students to show and explain their thinking. This triangular number investigation, The Magic Lollipop Tree, is appropriate for students from Year 3 and above as a context for engaging with the associative property of addition (i.e., changing the order in which we add numbers), exploring growing patterns and forming algebraic generalisations. The investigation could be easily modified for younger students.

One day James woke up and saw a new tree growing in his backyard. Strangely, on that first day, one lollipop had grown on the tree! (Strawberry flavoured).

On the second day another two lollipops popped up on the tree (making three in total - this time they were cola and watermelon flavoured).

On the third day another three lollipops appeared! This wasn't any ordinary tree… it was a Magic Lollipop Tree!

This was very exciting for James. He had a birthday party very soon and he wouldn't have to buy any lollipops for his guests!

James' birthday is on day 13 and the whole class is coming (20 students and James)! How many lollipops will he have? How many will everyone get if he shares them fairly? How many will he have left over?

ENABLING PROMPT

After one day, James had one lollipop. After two days, he had two more lollipops; so a total of three (1 + 2 = 3). How many lollipops were on the tree after a week? Use Unifix (see image) or counters to represent the lollipops, to help you work it out.
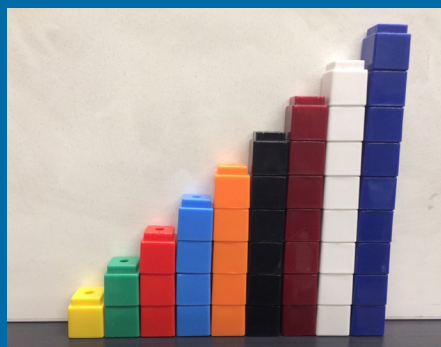
EXTENDING PROMPTS

How many days would it take for James to have enough lollipops for everyone at his school (250 students and teachers)?

Is there a more efficient way to work out how many lollipops there would be after 30 days? What about 50 days? Or even 100 days?! (See if you can find a pattern, rather than add up **all** the numbers!)

What kinds of investigations have you used in your classroom as a launch for mathematical exploration? Our readers would love to hear your experiences. You can share your ideas with us at primenumber@mav.vic.edu.au.