

Them's the rules buddy! Is everyone always telling you what to do and what the rules are? Well, here's your chance to make the rules for a change. Often when we see a pattern in maths, we can describe it with a short rule that works no matter how big (or small) the pattern gets.

For example, if you offer lollies to your little sister, you always make sure you eat 2 for every 1 she gets. So if she ate 3, you would take 6. Your 'rule' is 1 for her, 2 for me. If you were to write that in maths language you might say 'm' = the amount of lollies I get, 's' is the amount your sister gets. So **m = (s x 2)**. In algebra you don't even need to put 'x 2' – just put the s right next to the 2 and it means that same thing. So, **m = 2s**. If you always sneak an **extra** lolly before she even sees the bag, you can

even put that in the rule! Look: **m = 2s + 1**



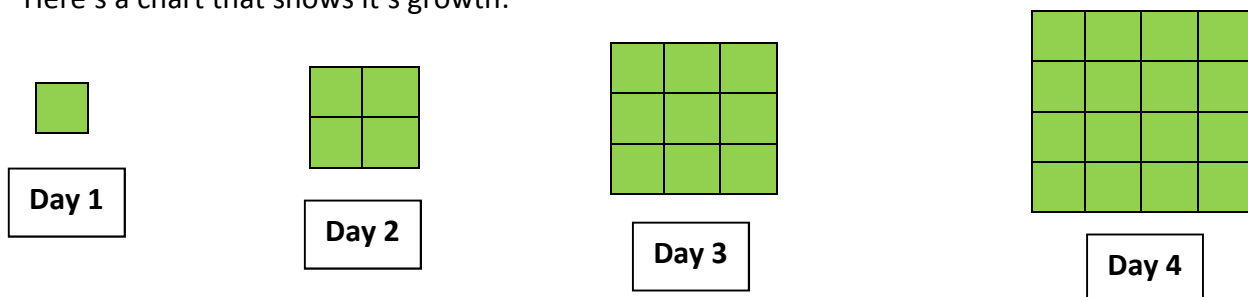
Let's try the rule:

- You find out that yesterday your sister ate 4 lollies while you were washing the dog. – How many will you grab to keep your rule? Hmm. Well, to find 'm' go 2×4 (sister's lollies) + 1 = _____
- Ok, by yourself this time: Your sister snuck into the pantry and gobbled 6 lollies! How many will you scarf to keep the rule? _____
- OK, slow down there cowboy/girl – if your sister eats any more sweets, you may have to change your rule – imagine if she ate 10 lollies! You'd chomp back _____ in response. The other results would be wicked sore guts and a trip to the dentist!

Alright, see if you can make a rule for these stories: (Don't worry about writing in 'maths code' though)

- My sister is 3 years younger than me. I am 11 now, so she is $(11 - 3)$ 8 years old. What rule can I use to figure out her age, no matter what my age is? _____
- Your friend Rupert is mad into science. He's been busy growing disgusting bacteria in some plastic dishes.

Here's a chart that shows it's growth:



How many squares would there be on Day 5? _____. How about Day 9? _____

So, what is the rule for this bacteria growth? _____

- Your mum insists that you always have at least \$15.00 in your bank account. You also get \$5.00 every week for pocket money put into your account. How much money is in the bank after **3 weeks**?

What is the rule you can use to figure the money for any week? _____