## News

Welcome to this year's Christmas maths newsletter, which just so happens to be our 78th newsletter, which is a bit of a coincidence, as 78 is the answer to quite a popular maths puzzle about Christmas. Can you work out what that puzzle is? Let me know if you work it out! [1]

It was in the news recently that a man named Kieran White married a woman called Tilly Christmas and now they are called Mr and Mrs White-Christmas.[2] But how likely is it that we will have an actual white Christmas this year? A snowflake has fallen somewhere in the UK on Christmas Day 38 times in the last 54 years, so the probability is actually slightly more than 0.7. However, there has only been a widespread covering of snow on the ground (where more than 40% of stations in the UK reported snow on the ground at 9 a.m.) four times in the last 51 years. This means an actual proper white Christmas has a **relative frequency** of 0.078.

If you would like to make mathematical snowflakes, why not have a look at ViHart's YouTube video.[3]
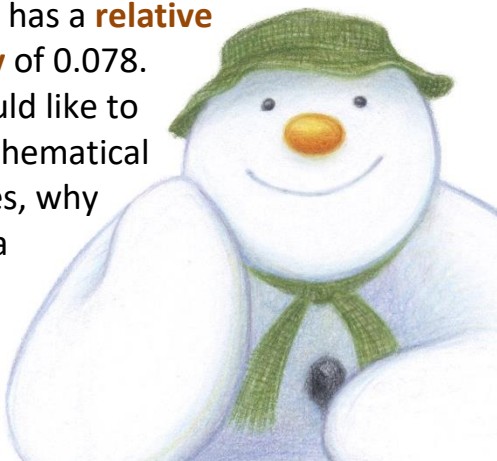
A Probability Puzzle

One of our year 12 students, Maleeha Ahmad, recently won a maths competition by solving the following puzzle. Can you solve it too?

Yesterday I played a computer game many times and won exactly 85% of them. Today I played the same game several times again, winning every time. My overall winning percentage was exactly 94%. What is the minimum number of games I could have played today?
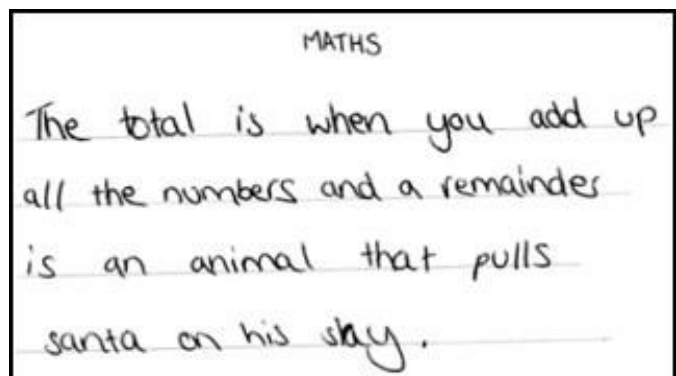
A Fraction Puzzle

The mixed number $91\dfrac{5742}{638}$ is equal to 100 and uses all the digits from 1 to 9 once.
Can you find a similar mixed number that is also equal to 100, but only has one digit before the fractional part?

Joke

MATHS

The total is when you add up all the numbers and a remainder is an animal that pulls santa on his slay.

1. The picture is a clue! So is the fact about the number 78 that I chose to use.
2. I haven't made this up: https://www.bbc.co.uk/news/uk-england-dorset-54822289
3. You can find that video here: https://www.youtube.com/watch?v=8EmhGOQ-DNQ

Virtual Maths Club!

If you would like to join the Camp Hill Virtual Maths Club (because we can't run a real maths club at the moment) where you can access lots more puzzles and videos and competitions, just log onto the Google classroom and enter the code **uoks6uw**.

Did You Know?

Apparently, there is a mathematical formula for making the perfect mince pie. If you would like to read about it, follow the link in the footnote below.[4]

A Puzzle about People Walking in the Snow

Aloysius, Bathsheba, Clifford and Doris live in four houses, with each of their cars parked in a different position. When they wake up on Christmas Day it has snowed but they still need to drive to elderly relatives for lunch so must walk to their cars. How can they all get to their cars without their paths in the snow crossing?[5] Also, is there a way they could have parked their cars that would have made this impossible? Please let us know if you work out the answer!
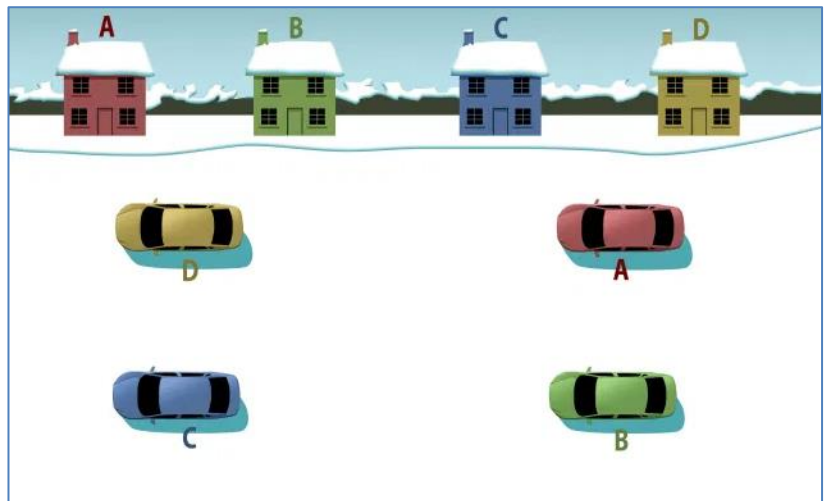
Snow Triangles

I'm sure you have all seen pictures of crop circles in fields before, but have you ever seen mathematical patterns drawn in the snow before? Apparently, unlike crop circles, these patterns were not made by aliens but by actual people who had nothing better to do. This pattern is called a Sierpinski Triangle, after the Polish mathematician Wacław Sierpiński, who invented them. If you would like to see more of these strange designs, click on the link in the footnotes![6]

Meanwhile, we hope you have a great Christmas break and we'll be back in the new year!

4. This one: https://www.conquermaths.com/news/post/index/393/The-Formula-For-The-Perfect-Mince-Pie
5. This puzzle is from Alex Bellos. Don't worry about why they would want to do this, or whether it's even legal under Covid restrictions. It's just a maths puzzle. The solution can be found here:
https://metro.co.uk/2016/12/22/can-you-solve-this-mind-boggling-christmas-puzzle-6339588/
6. https://momath.org/home/math-monday-make-designs-in-the-snow/