



Every prime number bigger than 3 is next to a multiple of 6

News

Welcome to the Christmas edition of the maths newsletter! Last time I accidentally told you to expect a ton of new stuff in this issue. What I meant to say was 'expect some Newton stuff' because Isaac Newton¹ was born on Christmas



day in 1642. Did you know that the biggest Christmas present ever given was the Statue of Liberty? It was given by France to the USA in 1886. It is 46.5 metres tall and it weighs 225 tons. Those are old tons, not new tonnes – not to be

confused with Isaac Newton, who was a person, not a mass, even though weight can be measured in Newtons, which is a unit of force named after Isaac Newton. Is this getting confusing? By the way, which is heavier; an imperial ton or a metric tonne? Why not find out?

Maths Quote

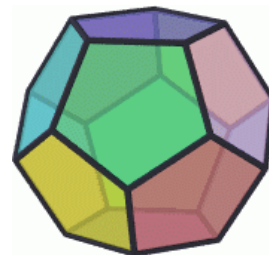
Isaac Newton said, "We may imagine things that are false, but we can only understand things that are true, for if the things be false, the apprehension of them is not understanding."

If you think you might be imagining things about maths that are false and not understanding things that are true, why not make a new year's resolution to come to Maths Workshop?

1. It's not true that he was called Newton because he invented tons of new maths... even though he did.
 2. We'd say "Perhaps the old ones got the sack" but that would be a bad joke, so we won't...

Maths Word

A 'dodecahedron' is a 3 dimensional shape with 12 faces that are all regular pentagons. It is one of the 5 Platonic solids. Perhaps you could make one, decorate it and hang it from your Christmas tree, if you have one. It would give you an excuse to talk about interesting maths when people visit your house during the Christmas holidays.



Maths Puzzle

Santa has bought some new reindeer². He put one sixth of them into field A and one fifth of the rest of them into field B. The remaining 20 deer went into field C. How many reindeer did he buy?



Christmas Formulas

According to Sheffield University, the number of baubles on your tree should be $\frac{\sqrt{17}}{20} \times$ tree height in cm, the length of the lights should be $\pi \times$ tree height, and the height of the star on top should be one tenth of the tree height. Now you have no excuse for getting these wrong!

Joke

What did the maths teacher say after finishing her big Christmas dinner?

$$\frac{\sqrt{-1}}{8}$$





Did you know?

In 1693, the famous diary writer Samuel Pepys³ wrote a letter to Isaac Newton, asking him which of these things was most likely: a) to get at least one six when 6 dice are rolled, b) to get at least two sixes when 12 dice are rolled, or c) to get at least three sixes when 18 dice are rolled. Can you work out the answer?



Famous Mathematician

Sir Isaac Newton was born in 1642; the same year that Galileo died. He was one of the greatest mathematicians who ever lived. He is probably best known for mathematically describing the law of gravity, but he also discovered some of the maths we study in school: things like fractional indices, the generalised binomial theorem, and Newton's Laws. He is also famous for discovering Calculus at the same time as Gottfried Leibniz, and then spending the rest of his life arguing with him about who discovered it first. As a person, Newton was not always very nice. It is said that he deliberately made his book *The Principia* difficult to understand so that normal non-genius people would not keep pestering him with questions about it. He was also a bit odd. He once stuck a long needle behind his eye, between his eyeball and eye socket, and wiggled it around, just to see what would happen. Fortunately nothing did.⁴ He also decided to stare at the sun for a while to see what would happen.⁵ He was alright, although he had to spend a few days in a dark room before his eyesight went back to normal. Newton died in 1727 and is buried in Westminster Abbey. You can walk on his grave but you are not allowed to take a photo of it. I tried, and there are people watching you who will tell you off.



Competition Winners

The winner of the *Alice's Cakes* competition was Neha Yechuri from 7Z. Runners up were Shree Kumaresan from 7X, Millie Flynn from 7Y, and Jessica and Katherine Li from 7W and 7V. The year 7 *Mathematical Art* competition was won by Leila Rahmati in 7W. In 2nd place was Mushkan Pradhan from 7V, and in 3rd place was Ellen Colleran from 7Z. The winners will receive a book and 5 house points, and runners up will each receive 5 house points. Well done to all of you! Here are two of the winning pictures...



by Leila Rahmati 7W



by Mushkan Pradhan 7V

The Next Newsletter

If anything mathematical happens to you over Christmas, let us know. Meanwhile, have a Happy Christmas! 😊



3. Pronounced 'Peeps'... but you probably knew that.

4. Except that the needle got a bit sticky.

5. Do not try this. If you are bored, why not do the maths puzzle instead?