

October 17th

Memory Verse

**Go ye therefore,
and teach all nations,**

baptizing them in the name of the Father,
and of the Son,
and of the Holy Ghost. Matthew 28:19

Younger children could learn the words in **bold** and understand that what we are to teach is the truth of the Bible: that Jesus came to save sinners. More about today's memory verse in tomorrow's lesson.

Something to read from history

In front of a house in the Bakkerstraat, Arnhem in the Netherlands is an inscription on the ground. It reads:

IN THIS HOUSE DIED ON THE **17 OCTOBER** 1586 SIR PHILIP SIDNEY ENGLISH POET, DIPLOMAT AND SOLDIER, FROM HIS WOUNDS SUFFERED AT THE BATTLE OF ZUTPHEN. HE GAVE HIS LIFE FOR OUR FREEDOM.

The inscription was unveiled on **17 October** 2011, in the presence of Philip Sidney, 2nd Viscount De L'Isle, a descendant of the brother of Philip Sidney.



Who was Sir Philip Sydney, what was he doing in the Netherlands and how did he die?

Sir Philip Sydney (1554-1586) was a poet. You can find his metric version of Psalm 19 in today's Optional Resources files. He was also a soldier and a courtier of Queen Elizabeth I. At the time the Netherlands were fighting against their Spanish rulers for independence. We have already looked at part of this story on 16th April. To start with, the Dutch only wanted an end to the oppressive behaviour of the Spanish army, relief from burdensome taxation, and toleration for Protestants whom the Catholic Spaniards called “heretics” and condemned to death. As time went on the Dutch began to yearn for

complete freedom from Spain.

The Dutch sought for allies to help them in their struggle and they turned to Elizabeth I of England, even offering to become her subjects. Elizabeth turned down this offer but she did send some aid to the Dutch. Later, Sir Philip Sydney was sent by the Queen to be governor of the town of Dutch town of Flushing. Sir Philip was an enthusiastic supporter of the Protestant cause in Europe and had tried without success to promote an attack on Spain herself.

Things did not always go well with the English forces in the Netherlands. The Battle of Zutphen between the Spaniards, under Prince Alexander of Parma, and the English, under the Earl of Leicester was a victory for the Spanish. They were trying to get a convoy of provisions into Zutphen, which was being besieged by Leicester. Leicester tried to intercept the convoy but failed and had to retire with heavy losses. Among those who fell on the English side was Sir Philip Sydney.

As H. E. Marshall explains, Sir Philip Sydney was a great soldier:

He was so handsome, and brave and kind that every one loved him. Queen, statesmen and people, soldiers, courtiers and poets, all loved him. He lived well, wrote well, fought well, and died well. He fell fighting for his country. Wounded and groaning with pain, he asked for a cup of water. While it was being brought, he noticed a soldier lying beside him in great agony. "Give it to him," he said, pointing to this poor soldier. The man refused to have it. "Nay, but take it," said Sir Philip, "you need it more than I do."

Sir Philip never recovered from his wound. A fortnight later he died; still young, brave and handsome.¹

A stone marks the spot where he fell. It is inscribed with the words, "Thy necessity is yet greater than mine," which H. E. Marshall has simplified to "you need it more than I do." Under these words is written in Dutch "Sir Philip Sidney. Poet, warrior, courtier, diplomat. Born at Penshurst Place in Kent 30 November 1554. Mortally wounded on this spot on 23rd September 1586."²

Our Dutch friends have not forgotten Sir Philip – and neither should we.



Something to write about

On Friday **17th October** 1096 London suffered from a tornado. William of Malmesbury³ (1095–c. 1143) described the scene:



A tempest of contending winds, from the south-east, on the sixteenth before the kalends of November, destroyed more than six hundred houses in London. Churches were heaped on houses, and walls on partitions. The tempest proceeding yet farther, carried off altogether the roof of the church of St. Mary le Bow, and killed two men. Rafters and beams were whirled through the air, an object of surprise to such as contemplated them from a distance; of alarm, to those who stood nigh, lest they should be crushed by them. For four rafters, six and twenty feet long, were driven with such violence into the ground, that scarcely four feet of them were visible. It was curious to see how they had perforated the solidity of the public street, maintaining there the same position which they had occupied in the roof from the hand of the workman, until, on account of their inconvenience to passengers, they were cut off level with the ground, as they could not be otherwise removed.

Other reports mention that London Bridge, a wooden structure erected by William the Conqueror, was blown down. This is the earliest report of a tornado in England and it may possibly also have been the strongest. From accounts of the damage, meteorologists estimate that this tornado would have rated T8 on the tornado scale, which runs from T1 to T10. If so, winds of up to 240 mph would have struck the city. But what exactly is a tornado?



¹ H E Marshall, *Our Island Story*.

² Emelha, CC BY-SA 3.0 <<https://creativecommons.org/licenses/by-sa/3.0/>>, via Wikimedia Commons

³ Permission for image sought 09/03/22 by email from <https://www.athelstanmuseum.org.uk/malmesbury-history/people/william-of-malmesbury/>

A tornado is a violently rotating column of air, a vortex, that is in contact with both the surface of the Earth and a cumulonimbus cloud, a dense, towering vertical cloud, forming from water vapour carried by powerful upward air currents.⁴ Serious tornados causing significant damage are unusual in Britain but common in certain areas of the United States.

The last tornado which caused significant damage in London was in 1954. It injured six people and tore the roof from Gunnersbury London Underground station.

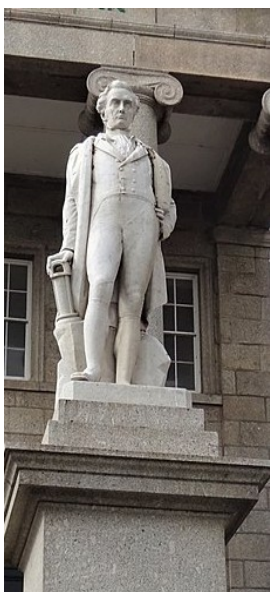
Look again at the dates given for the life of William of Malmesbury. How old was he when the tornado he is describing happened? How do you think he got his information?

Do you know the difference between a cyclone, a hurricane, a typhoon and a tornado? Write down all four words and beside each note what you think they are. Now use your encyclopaedias to see if you got it right.

What is the very worst weather you can remember? Write a short paragraph about it, giving the date as accurately as you can.

See below for a miniature tornado in an unexpected place but first...

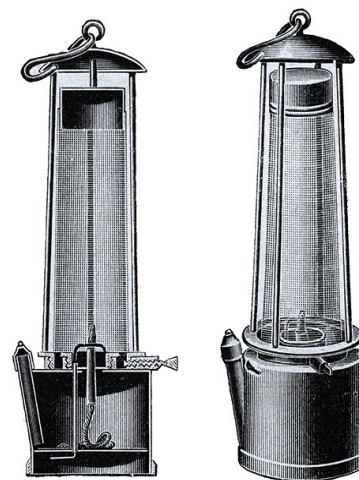
A statue to look at⁵



If you ever visit Penzance in Cornwall, be sure to go and see the statue⁶ at the top of Market Jew Street. In 1872 Penzance was prosperous and the working men of the town paid for the statue to be put up in front of the new Public Building to express their gratitude to the man whose figure stood on top of the pedestal. It was unveiled on **October 17th**. By why did the men pay for the statue? Who was the person to who they were so grateful?

We have already met him in the lesson for 29th August. It was Sir Humphrey Davy (1778-1829), the scientist for whom Michael Faraday worked as an assistant. It was Davy's most famous invention that caused so much gratitude in Cornwall for in Cornwall there were many mines and Davy invented the miner's safety lamp. Look at the statue. Davy is holding his lamp in his right hand.

When the only light a miner had by which he could work was a candle he was in great danger. Methane gas or "fire-damp" was often found in mines and it was highly flammable. When the miners' candles came into contact with the gas there were terrible explosions and fires in which many lives were lost. Several scientists worked on the problem but Davy was the first (just) to produce a workable solution. Davy discovered that although methane itself would pass through a wire gauze, fire would not. If the miners' candles or lamps were encased in a gauze cylinder the methane inside the cylinder might burn but the flames would not spread outside the gauze. In the picture you can see the lamp with its wick enclosed in a metal



⁴ Wikipedia.

⁵ Information from <https://www.penwithlocalhistorygroup.co.uk/on-this-day/?id=248> and other sources.

⁶ Illustration: By Ros ser1954 - Ober honan, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=83354787>

gauze.⁷ Davy never took out a patent⁸ on his design so that it would be freely available for the miners.⁹

Although Davy seems to have been first, George Stephenson (1781-1848) was working on the same issue and produced his “Geordie lamp” at around the same time. This worked on a slightly different principle, giving a better light because glass was used rather than metal gauze. The Davy lamp's metal gauze could rust in the damp conditions of a mine, making it unsafe. Stephenson's lamp did not become unsafe in this way. Stephenson was unknown at the time although he became a great engineer. He had a very poor childhood and he was completely self-taught, unlike Sir Humphrey who though he did not come from a wealthy background at least had a grammar school education. There was considerable friction at first between the two men over the invention.

The introduction of safety lamps protected the miners from a prevalent danger. It also increased production from mines, allowing deeper exploration. This in turn brought prosperity to the mining areas. No wonder they wanted to put up a statue in Penzance!

Something to find – and enjoy!



Every child has enjoyed finding out the time by blowing a dandelion clock. But did you know it was not until quite recently that scientists discovered exactly how the dandelion's little seeds get launched?

A paper published in the journal *Nature* published on 17th October 2018¹⁰ explains that, as we already know, each seed has a tiny parachute. This is actually a bunch of bristles called a pappus. Imagine a chimney sweep's brush – but white not black! There are about 100 little filaments or slender thread like fibres attached to the “handle” of the pappus. This acts

like a parachute slowing down the seed as it descends.

Now comes the new discovery. These bristles are arranged in a very special way. As the pappus falls, air flows between the bristles and a low-pressure vortex, a swirl of air like a sort of miniature tornado, forms. This vortex travels above the pappus, generating lift and slowing down the rate of descent. This effect is created not by the bristles themselves so much as by the space in between them. The bristles only take up 10% of the area of the pappus but the air currents drawn along after each bristle interact with each other to create the maximum drag.

Whenever an object falls through the air, whatever it is and whatever its size and shape, it makes turbulence behind it as it falls. “But” the editorial in *Nature* explains, “it takes a rare combination of size, mass, shape and, crucially, porosity for the pappus to generate this vortex ring as it falls.”¹¹ This is similar to the aerofoil used to spread the “helicopter” seeds of the maple and sycamore but on a smaller scale. What a marvellous piece of engineering design! “It’s an example of how evolution

7 There is an exciting experiment here: <http://physicsexperiments.eu/1947/davy-safety-lamp> which demonstrates exactly how the lamp works. You need to buy some lighter fuel (Swan make a refill canister at about £2 from supermarkets). You will also need two identical small metal sieves or mesh tea strainers, a candle, a big glass beaker and some pliers. Adult help essential!

8 See the lesson for 9th June.

9 A good demonstration can be seen here: <https://www.youtube.com/watch?v=rhavaxv3a40>

10 Cummins, C., Seale, M., Macente, A. *et al.* A separated vortex ring underlies the flight of the dandelion. *Nature* 562, 414–418 (2018). <https://doi.org/10.1038/s41586-018-0604-2>

11 Cummins, C., Seale, M., Macente, A. *et al.*

can produce ingenious solutions to the most finicky problems, such as seed dispersal,” continues the editorial. But this is just a pious hope attached to the discovery without evidence. No mechanism by which such intricacies can arise by chance has ever been discovered.

Even if you are too old to try telling the time by blowing a dandelion, remember what you did in June. Did you note down your first dandelion clock in your diary in that month? If not, you can do it when you get to that time next year; there is a reminder in the lessons for June 1st!

Whenever it is, next time you blow a dandelion clock, marvel at the brilliance of our great Creator God.

When scientists look at some feature of God's creation such as dandelion seeds and try to copy the idea we call it “bio-mimicry”. Scientists hope to be able to use the complex technology found in the dandelion to help them in their own designs. Perhaps it should be called “creator-mimicry!”¹²

12 For younger children this article might be good: <https://answersingenesis.org/kids/plants/fine-dandy-flying/>