

April 30<sup>th</sup>

### Memory Verse

If we confess our sins **he is faithful and just** to forgive us our sins and to cleanse us from all unrighteousness. I John 1:9.

Don't forget to pass on the good news of this verse to a friend or relative by phone. They will enjoy listening to you demonstrating what you have learned this week.

### Investigate history

On 30<sup>th</sup> April 1883 Beatrix Potter (1866-1943) wrote in her diary:

“...I went to the dentist (Mr Cartwright, 12 Old Burlington Street), for the first time in my life. He stopped a little hole in one of my top left double teeth. It was a simpler business than I expected. He had a little instrument with a head about as big as a pin's head, which he whirled round and round to get out the bad [decayed material], wiped it with cottonwool and rammed in gold as if he meant to push the tooth out through the top of my head. He did not hurt me in the least, only he had only just come in when *we* did, and his fingers tasted muchly of kid glove.”

Professor of dental surgery and surgeon dentist at King's College London, Samuel Cartwright (1842-1907) was a top dentist, as his father had been before him. The Cartwrights were dentists to many famous people including King George IV and Charles Dickens. There are a number of interesting things to notice about this extract from Beatrix Potter's diary which will tell us about the differences between dentistry in the 1880s and dentistry as we know it today. Look at the entry again and consider these questions. I have put some answers to the questions in footnotes. Cover them up before you make your own answers and look at them afterwards.

How old was Beatrix Potter when she made this **first** visit to the dentist?<sup>1</sup>

Why did she go?<sup>2</sup>

What can we deduce from these pieces of evidence?<sup>3</sup>

What do you think the “little instrument with a head about as big as a pin's head” was?<sup>4</sup>

How was it powered?<sup>5</sup>

What did Samuel Cartwright do to the drill head before using it to ram in the gold?<sup>6</sup>

What did he **not** do to it that you might expect?<sup>7</sup>

People who could afford it were able to have gold fillings. “[G]old leaf was built up in the cavity, layer on layer. Each layer had to be literally hammered into position to make it coalesce with the previous layer.”<sup>8</sup> How does Beatrix Potter describe this process?<sup>9</sup>

Samuel Cartwright had entered his surgery from the street at the same time as his patient. When outside he had been wearing kid gloves. He had taken them off when he came in. What can we deduce he had **not** done from Beatrix Potter's remark that “his fingers tasted muchly of kid glove”?<sup>10</sup>

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1 17

2 To have a hole filled.

3 She did not go for regular check-ups.

4 A dentist's drill.

5 By hand - “he whirled [it] round and round”. Clockwork drills were also available and a foot operated drill had been invented in 1871.

6 Wiped it with cotton wool.

7 He did not wash, disinfect or sterilize it to ensure that no microbes (from decayed material perhaps) would remain under the new filling. What Beatrix Potter writes is not quite clear here, to be fair, perhaps she means he wiped the tooth cavity with cotton wool and, who knows, the cottonwool could have had some disinfectant on it.

8 Cambridge, Nicholas and Gelbier, Stanley, “Charles Dickens his teeth and his dentist, Samuel Cartwright Junior” in *Dental Historian* 2019 64 (1) pp.12-17

9 He “rammed in gold as if he meant to push the tooth out through the top of my head.”

10 He had not washed his hands before starting work on his patient.

We read on 20<sup>th</sup> April about Pasteur's experiments in the 1860s and earlier. We can see from this diary extract that the lessons from these and similar experiments were quite slow to catch on in medical practice and that a top dentist in the 1880s was still putting his hands in people's mouths without washing them first. I hope he washed them between patients!

### Something to draw

Later in life Beatrix Potter became famous for her delightful children's books. She not only wrote the enchanting whimsical animal stories but illustrated them with beautiful coloured pictures carefully observed and often drawn from life. Here is her picture of Mrs Tigglywinkle's bucket catching water for doing the washing. What flowers has she included in her picture?<sup>11</sup> If you have a garden pick a few daisies, dandelions and some leaves to go with them. If you have no garden you might have an indoor plant or even something from the vegetable rack you could use such as lettuce or even carrots. Make a pencil sketch and perhaps experiment with the water colour wash technique we tried on 27<sup>th</sup> March. If you prefer you can do pencil shading with coloured pencils. The Optional Resources Files today contain an example of how to do this with leaves which you could adapt to use for flowers also.



### Something to read aloud

I have included *The Tale Of Peter Rabbit* in today's optional resources files. Beatrix Potter wrote this story for young children and an older child could read it aloud for younger ones. Older children will appreciate how well the story is told in a very few words and yet vividly.

### Something to write

Some of us love writing stories and turn them out all the time. Others find it difficult. If you are one of those who finds story writing hard the Optional Resources files today also contain a sheet called *How to write a story for a small child*. This is a foolproof step by step method – have a go!

### Keep a Diary

What a useful thing a diary is! You can see from the example we looked at above that just recording everyday things can provide fascinating reading for people in the future. You do not have to have any special book to write a diary. Beatrix Potter used whatever old exercise books and scrap material she could find. You do not have to write an entry *every* day either, although you can if you wish. Beatrix Potter's diary was secret. She never intended anyone to read it (see below) except herself. If you make a note of your experiences as you go through life it will help you remember all the things that you have seen and done, all the things that have happened to you. Best of all, if you love the Lord, it will help you see how His hand has led you and His providence has worked in your life.

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<sup>11</sup> Daisies and forget-me-nots.

### Write something in code<sup>12</sup>

Beatrix Potter wrote her diary in code as other famous diarists, Samuel Pepys for instance, have done in the past. Constant practice made her very fluent at writing it. Her tiny handwriting made the code difficult to read and it was not until the 1960s that it was cracked. The code she used was quite a simple one which is sometimes called a shuffled alphabet code. This means every letter of the alphabet is switched with a different one randomly. The substituted letters never change. If *a* is substituted by *j* it is always *j* never any other letter and so on. To start with she probably had a key – a list of which letter was substituted by which – but after a while she had it off by heart and the key was no longer needed. Substitution codes like this are great fun to play with and not only for diaries. Try writing notes and messages for instance. I'm sure grandparents, aunts, uncles or cousins would all enjoy getting a coded message through the post and you might even get a coded message back. Don't forget to send a key though – perhaps in a separate letter for safety!

### Something to think about

The purpose of a coded message is to transmit information. We have a code inside all of us – DNA – a code that carries information. That information is the set of instructions that builds and grows our bodies and maintains our physical existence.



“The sequence of DNA ‘letters’ is like a language, where different combinations of letters have different meanings.

Whereas the English alphabet has twenty-six letters, the DNA alphabet has just four: A, C, T and G. Using these four letters, the DNA specifies which amino acid is to be placed in which position along the chain. For example, in the DNA language, the ‘word’ comprising the three letters, CAT, means ‘use the amino acid histidine’; the letters GGT mean ‘use the amino acid glycine’; the letters GTG mean ‘use the amino acid valine’. A series of such ‘words’ specifies the sequence in which the amino acids must be assembled. So CATGGTGTG means ‘assemble using histidine first, then glycine then valine’.”<sup>13</sup>

When you wrote your coded message the *information* you put in it originated with you. The code itself cannot produce information. Information cannot arise on its own; it is the product of an intelligence. In the case of your coded message the intelligence that originated it was yours. But where did the information in DNA originate? Psalm 139:14 gives us the answer: “I will praise thee; for I am fearfully and wonderfully made: marvellous are thy works; and that my soul knoweth right well.”

<sup>12</sup> This item ties in with the lesson on Samuel Morse 2<sup>nd</sup> April.

<sup>13</sup> Dominic Statham, “The remarkable language of DNA” *Creation* 36(2):52–55, April 2015 available here: <https://creation.com/dna-remarkable-language>. More for older children and adults here: <https://creation.com/non-standard-genetic-codes>