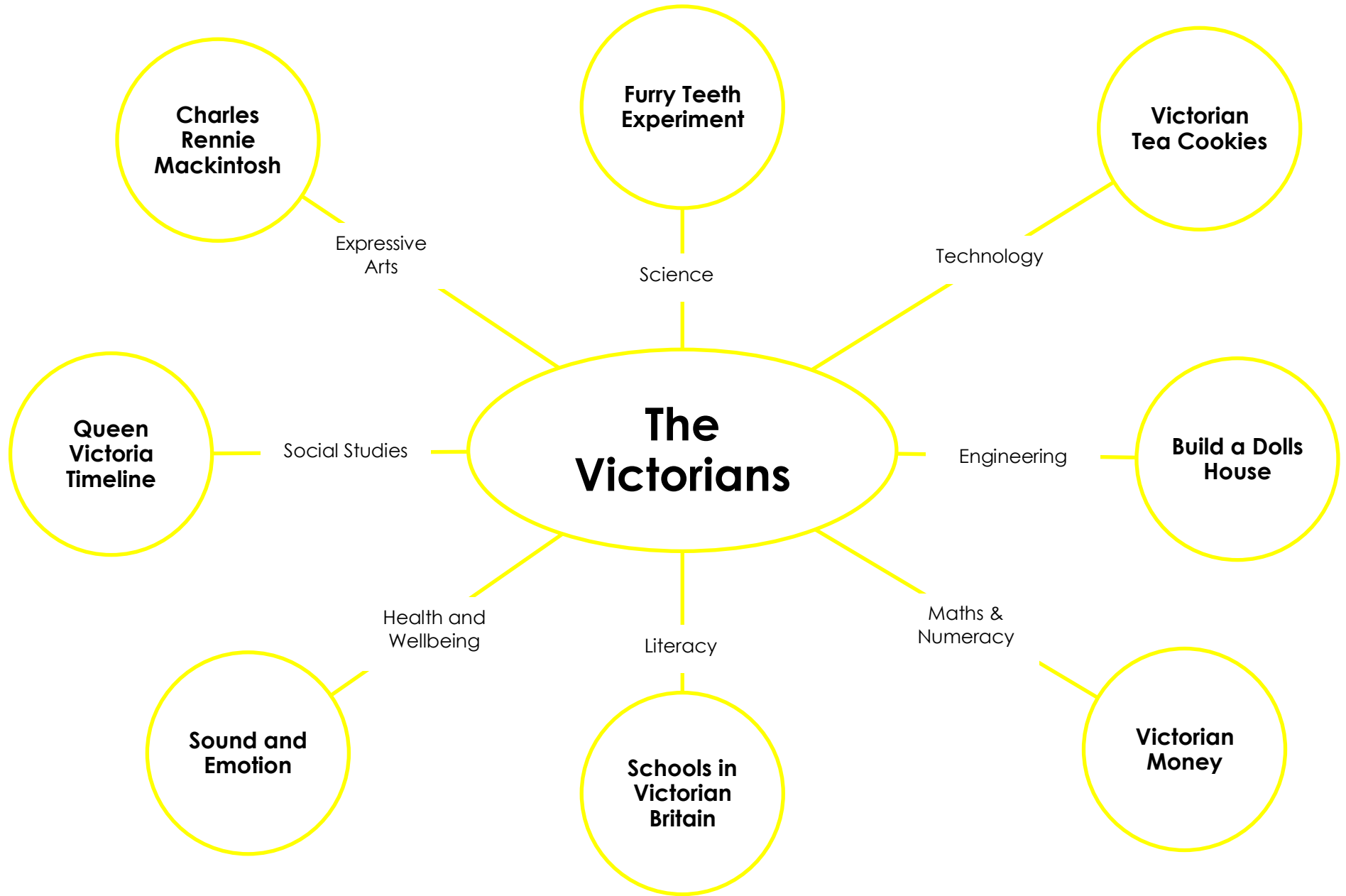




# Learning from Home



# Science Challenge



## Furry Teeth Experiment

The Victorian era was a time of great change – suddenly, people, ideas, objects and even food could travel great distances quickly, changing the face of the country and the dinner on the plate.

Some recipes that were invented during Victorian times were quite bizarre. One of these foods was spinach ice cream, which was served as a pudding, not a main course. Have you ever eaten spinach? It is known to give your teeth a 'coated' feeling afterwards but what causes that? Let's find out.

**You Will Need:** tinned or frozen spinach, fresh spinach, tin opener



### Instructions:

1. Open the tinned / frozen spinach. It contains lots of water, so drain it well and put it on a plate.
2. Open the bag of fresh spinach, make sure it is washed, and put some leaves onto another plate.
3. Now eat some of the tinned spinach. Chew it for 10 seconds before you swallow it. How does the inside of your mouth feel? Do your teeth feel any different? If so, how? Have you noticed the sensation before? Have you noticed the same thing happen when you eat other foods?
4. Now try some fresh spinach. Make sure you chew this well before swallowing. Do you get the same sensation?

### The Science:

Spinach contains high levels of oxalic acid or 'oxalate', which is a strong acid. The oxalic acid is usually contained within little pockets in the cell walls of the spinach but when these are burst either by being boiled or by being chewed, the cell walls break down and oxalate crystals escape.

The furry mouth you experience when you chew spinach is caused because spinach also contains calcium, as does your saliva. Calcium combines with the oxalic acid crystals from the spinach and deposits a calcium oxalate-rich furry plaque on your teeth. Being insoluble (doesn't dissolve), you then feel this as a chalky deposit in your mouth. Your teeth should feel furrer after eating the fresh spinach as the tinned / frozen spinach has already been cooked meaning that the oxalate has already been released.

Rhubarb, beetroot, leeks, kale and chocolate are also high in oxalic acid, although spinach appears to generate the best 'furry' teeth.

# Technology Challenge



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## Victorian Tea Cookies

Cooking was made popular during Victorian times with the help of Mrs Beeton. Her middle-class recipe book was a huge hit, and she is still a household name today.



**Your Task:** Make Victorian Tea Cookies (Recipe makes approx.. 30)

### Ingredients:

- 8 oz butter
- 7 oz sugar
- 2 medium eggs
- 1 tsp vanilla extract
- 1 lb. self-raising flour
- 1 tsp baking powder

### Hygiene Rules:

Remember to wash your hands and clean down your work surfaces before you start.

### Abbreviations:

oz = ounces      tsp = teaspoon  
lb = pound = 16oz

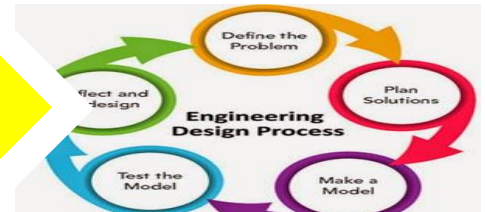


### Instructions:

1. Grease a large baking tray.
2. Mix together sugar, butter, eggs and vanilla extract in a mixing bowl.
3. In a separate bowl, mix flour and baking powder.
4. Slowly blend flour mixture and sugar mixture together.
5. Knead together. If sticky, add more flour.
6. Roll into balls and then press down gently with a fork. (This will make a pattern on the cookies)
7. Ask an adult to put your baking tray into a pre-heated oven. (350°F / 180°C / Gas Mark 4) for 20 minutes.
8. Ask an adult to remove the cookies from the oven and leave to cool.
9. Enjoy!
10. Write definitions for the following terms: **a.** mix      **b.** blend      **c.** knead

Activity and images from [www.youngwriters.co.uk](http://www.youngwriters.co.uk)

# Engineering Challenge



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## Build a Dolls House

Before they were toys, “dolls houses” or ‘cabinet houses’ were often used to show off wealth. During the Victorian era, wealthy adults would often replicate their own houses on a miniature scale. During this time, they also became a popular toy for the children of wealthy families.

**Your Task:** Build your own dolls house

**Your Materials:** manmade and recyclable materials from home including - shoe boxes, inner rolls from kitchen / toilet roll, cardboard, food tubs, other materials to make curtains, carpets and furniture, scissors, glue / tape, paint, coloured pens / pencils etc.

**Plan It:** Do some research first to see various dolls houses, explore the materials used and how they were built. Write down a list of your available materials and draw a picture of what you expect your dolls house to look like. How many floors will it have? How many rooms will it have? Will it have a garage attached? What kind of roof design will you use etc.? Will you put some dolls / models inside – will your basic furniture items like bed, chair, bath/ shower etc. be the right size for them?

**Build It:** Use your plan to build your dolls house.

**Test it:** Is your dolls house stable or does it collapse? Do your dolls / models fit inside?

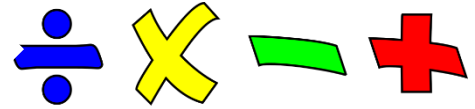
**Reflect:** Are you happy with your design? Do you need to make any items of furniture larger or smaller? Do you have moving doors or just gaps in walls? Etc.



**Improve it:** Use your reflections to make improvements to your dolls house. Could you make it more realistic? Perhaps you have spare wallpaper at home you could use to cover the walls, or some spare carpet offcuts for the floors?

Images from [www.wikihow.com/](https://www.wikihow.com/)

# Maths & Numeracy Challenge



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## Victorian Money

We are going to travel back in time to the Victorian Age. Look at the chart below, which shows Victorian money and its worth.

<b>Pound</b>	—————→	20 shillings
<b>Shilling</b>	—————→	12 pence
<b>Penny</b>	—————→	Two half pennies or four farthings
<b>Guinea</b>	—————→	21 shillings
<b>Sovereign</b>	—————→	One pound
<b>Half a Crown</b>	—————→	2 shillings and sixpence
<b>Florin</b>	—————→	2 shillings
<b>Silver Sixpence</b>	—————→	6 pence
<b>Threepenny</b>	—————→	3 pence

Activity from [www.NationwideEducation.co.uk](http://www.NationwideEducation.co.uk)

**Task:** answer the following questions:

- How many Sovereigns in five pounds?
- How many Farthings in a silver sixpence?
- How many Florins in one Pound?
- How many Pennies in a Florin?
- I go shopping and see an item priced at one Shilling. I have a Silver Sixpence and ten Half Pennies. Can I buy the item?
- How many pennies in Half a Crown?
- Would it be better to have twelve Florins or a Guinea?
- How many Threepenny coins would be equal to two Shillings?
- How many Farthings in a Florin?
- How many pence in a Sovereign?
- If I had two Guineas and I bought something worth two Pounds, how many Shillings would I get in change?
- I have four Florins, three Shillings, six Half Pennies and eight Farthings. How much do I have altogether in pence?

**Extension:** Try to find out what one Pound would buy in Victorian times, and compare to what one Pound would buy today? Is a Pound worth the same now as then? Find out what a loaf of bread would cost then and now.



# Literacy Challenge



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## Schools in Victorian Britain

At the start of Queen Victoria's reign, only a few children attended school. Most poor children worked, and their earnings were an important part of the family income. By going to school, their families would lose this money.

There were village schools in some parts of the country, which were run by the church, or small '**Dame**' schools, usually run by one woman. 'Dame' schools were often more about child care than learning. Sadly, some places which called themselves 'schools' were actually workshops. The children would be used for cheap labour, making lace or plaiting straw.

In many big towns there were '**Ragged**' schools, set up by people like Dr Barnardo who cared about the children. As well as gaining an education, they would be fed and cared for. In 1870, the Education Act was passed, which said there had to be a school in every town and village, meaning that all children had to go to school.

Boys and girls went into school through separate doors, sat in separate rows and were taught separately. The rules of the class were very strict. Pupils were hit with canes if they misbehaved. The children wrote on slates with slate pencils and spent lots of time copying from the blackboard.

In class, the teacher sat at the front. There were maps, books, a bible, a globe, an abacus and a picture of Queen Victoria on the wall. Boys learned science, woodwork, technology and extra maths. Girls learned sewing and housework. They both learned reading, **w**riting, **a**rithmetic (the **3 Rs**), spelling and drill (PE).

**Questions** (Write full sentences, use the back of this sheet or a separate piece of paper)

1. Why did some families not want their children to go to school?
2. What was a 'Dame School'?
3. What was a Ragged School and who were they set up by?
4. What happened in 1870?
5. How were boys and girls separated in Victorian schools?
6. What things would you find in a Victorian classroom?
7. What subjects did the boys learn in school?
8. What subjects did the girls learn in school?
9. Would you like to have been a school pupil during Victorian times? Why / why not?



Activity and Images from TES



# Health & Wellbeing Challenge

## Sound and Emotion

Sound can have an impact on our mental health. For example, a lot of noise can make us feel stressed. Sounds and songs can make us feel different emotions.

Florence Nightingale was a famous nurse who lived during the Victorian era. Florence was a pioneer in understanding that calm, quiet wards allow patients to rest which helps make them feel better. Today, doctors and nurses continue to try and make wards and patient rooms quiet and calm.

**Task:** Explore the impact of sound on your emotions.

### You Will Need:

1. 6 pieces of blank A4 paper numbered 1 - 6
2. A pencil
3. Six clips of music without words/lyrics using a selection of different musical styles. (Click on the links after each)
4. A partner to stop and start the music

1. Due Tramonti by Ludovico Einaudi
2. Where Eagles Dare (Instrumental) by Iron Maiden
3. An Ending (Ascent) by Brian Eno
4. Sandstorm by Darude
5. Belleville by Django Reinhardt
6. Spring by Antonio Vivaldi

<https://youtu.be/zxTyxfgzvWw>

<https://youtu.be/pe1Mi7oL0gc>

<https://youtu.be/OlaTeXX3uH8>

<https://youtu.be/y6120QOlsfU>

<https://youtu.be/JsFvUHvYv2E>

[https://youtu.be/mFWQgxXM\\_b8](https://youtu.be/mFWQgxXM_b8)

### Instructions:

Ask your partner to click on the music links. Listen to each clip of music for 30-40 seconds and follow the instructions below for each clip.

Put your pencil on the paper in their first box and close your eyes. As music plays, draw along to the music in a free flow line...try to stay in the box where you can. You're not drawing anything in particular, just letting your hand and the pencil move to the music. Once the clip is over, write down a few words about how that music made you feel. Once all the clips are played, and all the line drawings are done, look at what you've drawn. Have you pressed harder or softer with the pencil at times? Are some lines heavier or lighter, wider or thinner? Are some shapes more round whilst others are more sharp? How did you feel when you listened to the music? Does your drawing express the emotion you felt listening to the song?

# Social Studies Challenge

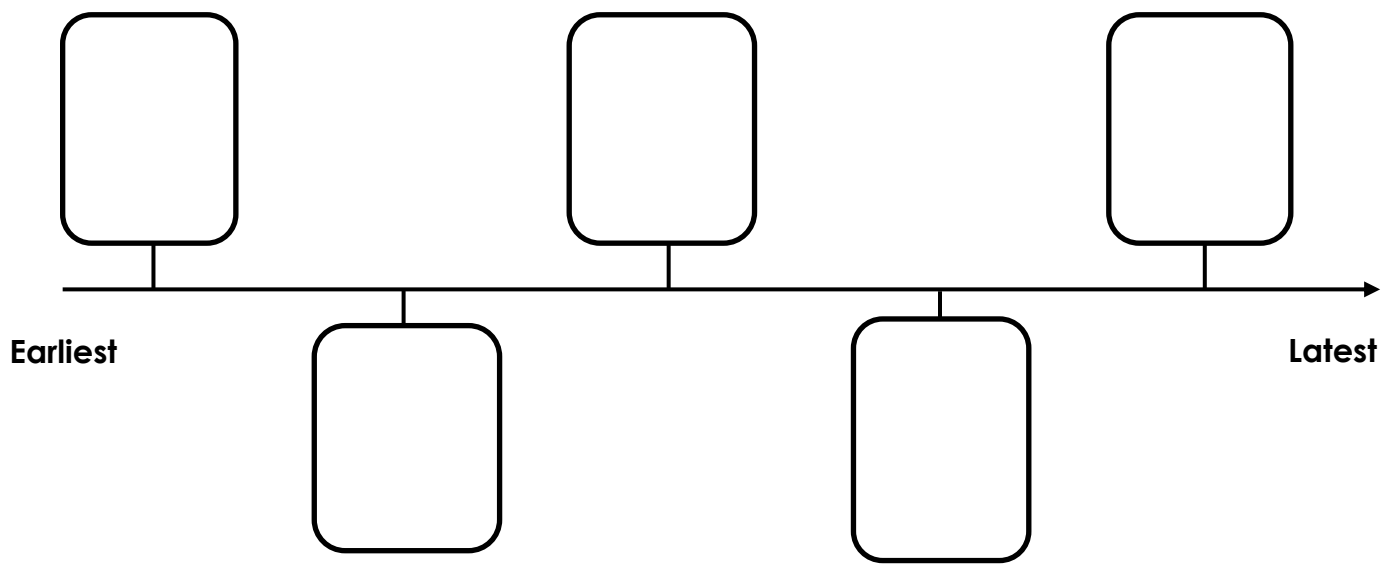


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## Queen Victoria Timeline

Queen Victoria lived for 81 years, and she was Queen for 63 of them.

**Task 1:** Put the timeline below back together by cutting out the information boxes and sticking them down in the correct order.



**Task 2:** Do some research of your own. Can you find out any other things that happened during Victoria's lifetime? Add them to the timeline above. Ask an adult for help if you are not sure where the events should be placed.

**Task 3:** List some things which changed during Victoria's time on the throne or name any important inventions which were made. Think about how we know these things.

Click here to find out more: <https://www.bbc.co.uk/bitesize/topics/zkrkscw/articles/zfdkhhbk>

<p><b>1861</b> Prince Albert died</p>	<p><b>1819</b> Queen Victoria born</p>	<p><b>1901</b> Queen Victoria died</p>	<p><b>1837</b> Queen Victoria crowned</p>	<p><b>1840</b> Victoria marries Prince Albert</p>
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# Expressive Arts Challenge



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## Charles Rennie Mackintosh

Significant Individual: **Charles Rennie Mackintosh**  
(Born 7<sup>th</sup> June 1868 - died 10<sup>th</sup> December 1928)



The Mackintosh Rose

Charles Rennie Mackintosh was a Scottish Victorian era architect, designer and artist who was a leader of the Glasgow style here in the UK. The Glasgow style featured simple shapes like squares, circles, hearts and vertical lines.

Along with his wife, Charles designed many things from furniture to lights and even wallpaper for some buildings.

The Mackintosh rose design (see pictures) is extremely popular today and can be found on fabric, wallpaper, stained glass, bags and even jewellery. Have you ever seen it?

Click here to find out more: <https://www.bbc.co.uk/bitesize/topics/zxwxvcw/articles/z763nrd>

**Task:** Design and draw a stained-glass window (in a rectangular frame) in the style of Charles Rennie Mackintosh. You may use any media you wish.



Info and images from [www.bbc.co.uk/bitesize/](https://www.bbc.co.uk/bitesize/)