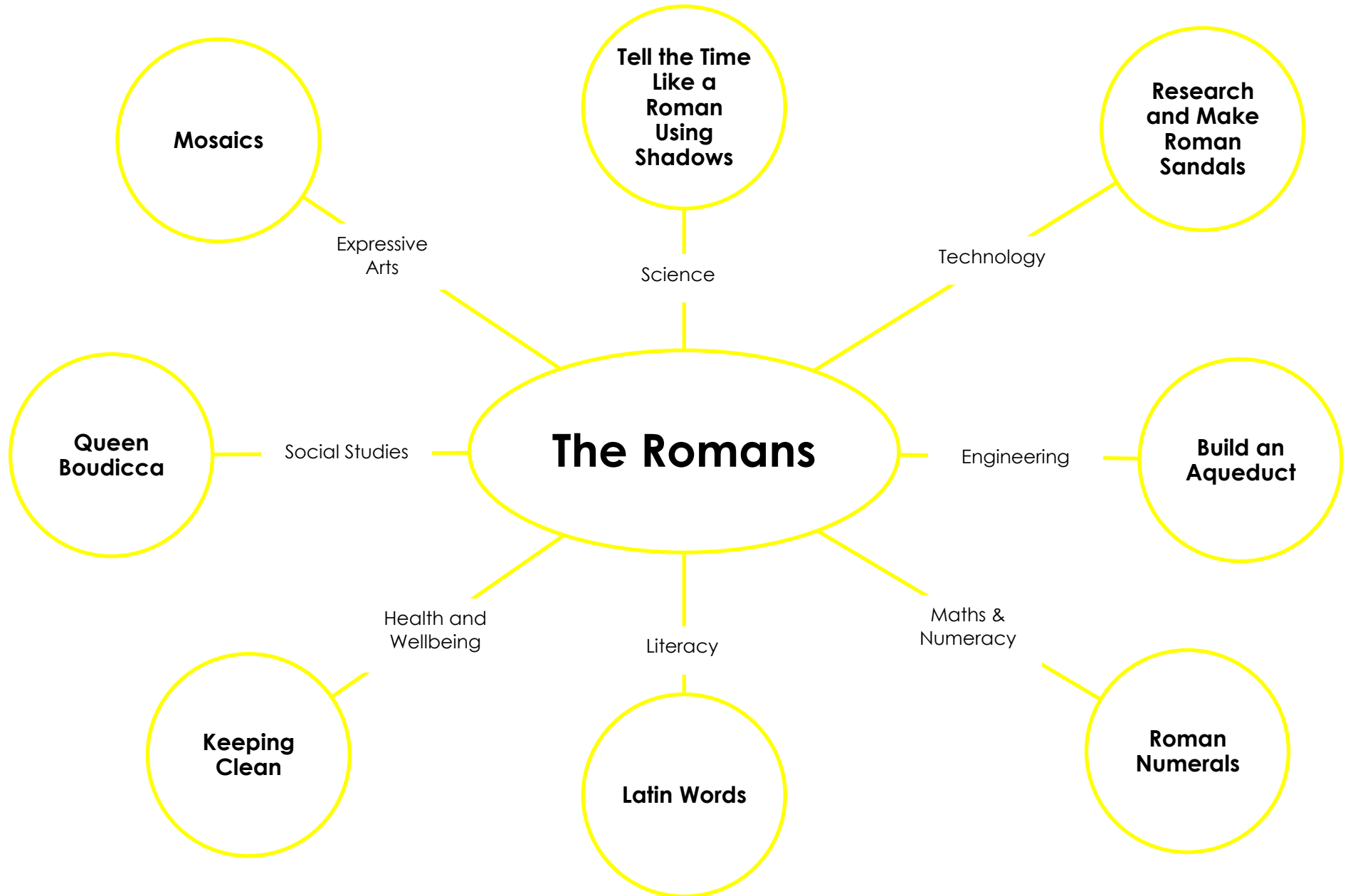


Learning from Home



Science Challenge



Tell the Time Like a Roman Using Shadows

Did you know that the Romans used the position of the sun and the length of shadows to estimate the time of day?

Today you will be measuring your shadow at different times of day to see whether there is an effect on its length.



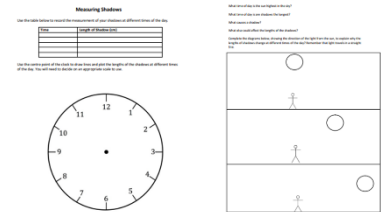
Activity and images from www.consortiumeducation.com

First make a **prediction** about how you think the length of your shadows will change throughout the day.

You will Need: a sunny day, an outdoor area, a partner (an adult or brother or sister) a tape measure, pencil and a recording sheet – click here:

<https://www.consortiumeducation.com/classroom-ideas/wp-content/uploads/2016/02/TCE-Measuring-shadows-worksheet.pdf>

(Or you could draw your own)



Method:

Measure each other's shadows at different times of the day and record the results. You need to consider how you can ensure that your test is **fair**. (Try to keep everything the same apart from the time of day)

The results of your investigation can then be plotted onto a clock face to give a graphical representation of the length of the shadows at different times of the day.

Think About:

1. What time of day is the sun highest in the sky?
2. What time of day are shadows the longest?
3. What causes a shadow?
4. What else could affect the lengths of the shadows?

Click here to watch a video explaining the Science:

<https://www.youtube.com/watch?v=fy7eoMef3e8&t=131s>

The Science:

Light travels in straight lines. Shadows happen when something gets in the way of the light and blocks it.

The Earth rotates over 24 hours (a day). During the daytime we can see light because of the sun but at night-time our place on Earth is facing away from the sun and the rest of the planet blocks out light. At midday the sun is directly above us, so our shadow is short. Our shadow is longer near sunrise and sunset because of the angle of the sun compared to our position on Earth.

Technology Challenge



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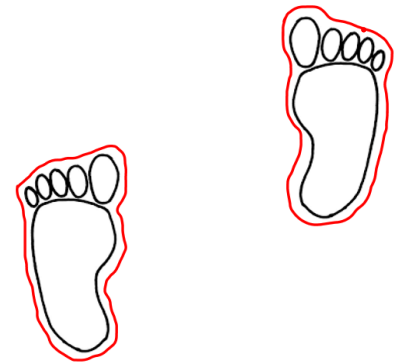
Research and Make Roman Sandals

Adult Supervision Recommended

Romans wore a variety of footwear including boots, shoes and sandals. Soldiers often wore leather sandals which had a thick sole to protect the feet when stepping on something hard or sharp. The sandals were designed to be light and airy, and this helped soldiers avoid foot fungus due to moisture when marching long distances.

To make your own sandals **You Will Need:**

- Computer / tablet with internet access and a word processing programme
- Cardboard (ideally from a sturdy box (thicker than a cereal box))
- Sugar paper / string / ribbon / thick laces (for straps)
- Scissors
- Hole punch
- Pencil / pen
- Ruler
- Sticky tape
- Glue etc.

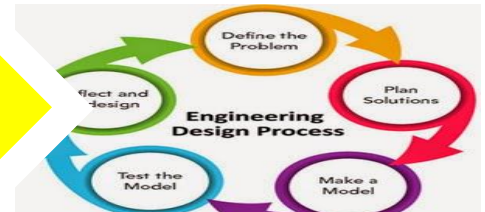


Instructions:

1. Make the soles for your sandals by drawing around your feet onto the cardboard. Add an extra 1 cm around each outline.
2. Now research how you could complete your sandals by looking at ideas on the internet. Think about the words or phrases you could enter into your search engine: roman sandals / roman crafts / how to make cardboard sandals etc.
3. When you have found an idea you like, **Copy** and **Paste** the instructions and any pictures onto a **Word** document.
4. Highlight the information in the **address bar**. Right click and copy it. Now paste this onto your Word document to show where you got your information from.
5. **Save** your document as '**Make Roman Sandals**'.
6. Close the internet search.
7. Now finish making your sandals.

Image from www.clipart-library.com

Engineering Challenge



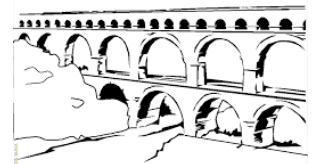
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Build An Aqueduct

Aqueducts were incredible inventions made by the Romans and used to transport water, sometimes for hundreds of miles. There are still aqueducts all around the world in places previously part of the Roman Empire, including here in Great Britain.

Click here to find out more about aqueducts:

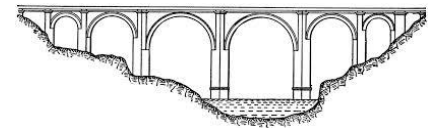
<https://www.youtube.com/watch?v=v1EdMt7Hs7E>



The Aqueduct

Your Challenge: Build a model aqueduct from junk materials at home. (You might want to consider cardboard, paper towel tubes, glue, stapler, tin foil, cling film, water, (marbles, small cars etc. to test.)

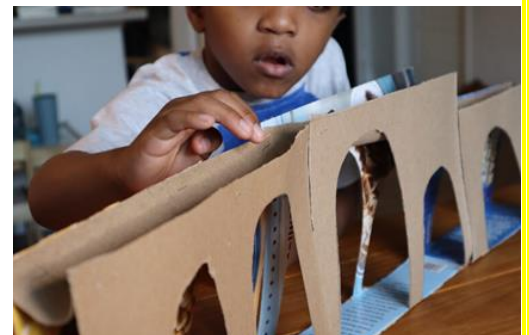
Plan it: Write down and / or draw what your aqueduct will look like. Make a list of the materials you plan to use. Can you explain why you have chosen to use them?



Build it: Remember to ask an adult for help if you need it.

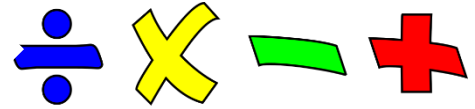
Test it: Can it stand upright by itself? Can you roll marbles or toy cars across it without it collapsing?

Improve it: Can you find a way to make it waterproof so that you can transfer water across it without it collapsing?



Activity adapted from and photo from www.pbs.org
Clipart from www.clipart-library.com

Maths & Numeracy Challenge



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Roman Numerals

These symbols are the building blocks of Roman numerals: **I, V, X, L, C, D** and **M**

Do you know the value of each letter?

I = 1 **V** = 5 **X** = 10 **L** = 50 **C** = 100 **D** = 500 **M** = 1000

In our number system (**the Arabic numeral system**), there are ten different digits, (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) and the place of these digits in the number determines its value. For example, 2 on its own means 'two', but in 3240, the '2' now means "two hundred". In this way, any number can be written down, using only ten digits.

Roman numerals have a set of rules which allow you to write down any number:

1. If a smaller numeral comes after a larger numeral, add the smaller number to the larger number;
2. If a smaller numeral comes before a larger numeral, subtract the smaller number from the larger number;
3. Do not use the same symbol more than three times in a row.

Tasks: Can you use these rules to construct and decipher Roman numerals?

1. Try converting the following Roman numerals into Arabic numerals:

III IV XVIII XIX MCMLXXVI MMXXIII MCMLXII

2. Now try converting the following into Roman numerals:

55 86 two thousand five hundred and ninety-two 913

3. Can you work out how to write '1984' in Roman numerals?

'1984' written in Roman numerals has more numerals than when it is written in Arabic numerals. However, this will not always be the case.

4. Can you find some examples when the number of Roman numerals is fewer than the number of Arabic numerals for the same number?

Click here for an interactive bingo game using Roman Numerals:
<https://www.romanbaths.co.uk/know-your-numerals>

Activity from <https://nich.maths.org/>

Literacy Challenge



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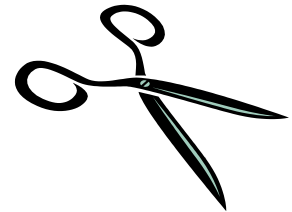
Latin Words

These words are all derived from Latin words used in Ancient Rome.

1. Look each one up and write down its definition.
2. Choose 6 of the words and use them in a sentence.
3. Share your sentences with a grown up.

List of words spelt with /s/ sound as sc:

- science
- scientist
- scene
- scenic
- scenery
- scissors
- scent
- discipline
- disciple
- fascinate
- crescent
- scimitar
- ascend
- ascent
- descend
- descent



Extra Challenge: Can you think of any other words to add to this list?

Activity and images from TES



Health & Wellbeing Challenge

Keeping Clean

If we don't keep ourselves clean, bacteria can build up and cause illness and diseases. If we didn't wash, we would start to look dirty and we would also start to smell.

Click here to find out what might happen if we didn't wash:

<https://www.bbc.co.uk/bitesize/topics/zbdcy9q/articles/z7dxjhw>

In Ancient Roman times, water was expensive, and people didn't have it delivered to their houses like we do. They also didn't have baths and showers at home, so how did they keep clean?



Image of a strigil from <https://en.wikipedia.org/>

The Romans were very clever, and they actually invented baths. But they didn't have little baths, they had really big ones, like the size of swimming pools!

The Romans saw bathing as a social activity as well as a way of keeping clean. They built communal bath houses, where people could relax, meet up and have a chat. Business deals were also often struck in bath houses. Politicians would even meet there and decide upon new laws!

We use soap or shower gel to wash ourselves with, but the Romans didn't. They would rub themselves down with olive oil or have a slave do it for them and then a tool called a **strigil**, would be used to scrape the oil and dirt off their skin.

We have personal toilets which are plumbed in – waste is flushed away into sewers where the waste is treated with chemicals and filtered to make it safe. Most Romans used communal toilets where up to 30 people could be using them at the same time. They often used water from the bath houses to flush the toilets in an attempt to keep them clean. They didn't have toilet paper like we do, they used a sponge attached to a stick and this was shared meaning many people would end up using the same one. Yuk!

Click here to watch a video about Roman baths:

https://www.youtube.com/watch?v=v8ygbCm2r_s

Click here to watch a video about Roman toilets:

<https://www.youtube.com/watch?v=OfaYsLFhcna>

Task: Draw a table and write down reasons for keeping clean and the ways we do that today and how the Romans did it. You might want to do further research yourself first. You could use books if you have some or

you could use the internet. **(Remember to ask an adult at home for permission first.)**

Reasons For Keeping Clean:	
How We Keep Clean:	How the Romans Kept Clean:
Modern Toilets:	Roman Toilets:

Social Studies Challenge



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Queen Boudica



In **AD43**, the Roman army landed on the beaches in Kent. It battled inland, storming through hillforts and chopping down anyone who stood in their way.

The Romans wanted Britain's precious metals. However, they weren't just a destructive force - they built new forts, new settlements and roads. They spread their culture, language and laws.

When the Romans invaded, the Celtic tribes had to decide whether or not to fight back. If they made peace, they agreed to obey Roman laws and pay taxes. In return, they could keep their kingdoms. However, some Celtic leaders chose to fight.

The Iceni tribe were initially on good terms with the Romans, agreeing to obey the Roman laws whilst keeping their own power. The Iceni were led by **King Prasutagus** and **Queen Boudica**. King Prasutagus hoped to win favour with the Romans whilst securing his family by leaving half of his land and wealth to the Romans and the other half to his two daughters.

However, when Prasutagus died (around AD 59 or 60), the Romans seized all of the Iceni's land and wealth. Boudica was beaten for her opposition whilst her two daughters were also attacked. Other Iceni chiefs were treated in a similar manner with families being treated like slaves.

Unsurprisingly, the actions of the Romans led to outrage and provoked the Iceni and other Celtic tribes. Boudica led a rebellion in AD 60 that was initially rather successful (due to the governor being busy fighting in North Wales) which led to the Roman towns of Colchester, London and St Albans being sacked and burned. When the Roman army heard about this, they came back from Wales to face Boudica. Even though the Romans were outnumbered by Boudica's 200,000 warriors, they were better trained and had better armour. Both sides clashed in a fierce battle, but by AD 61 the Romans had won. The exact battle location is unknown by historians, but it was reported that Boudica had killed herself rather than be taken alive by the Romans.

How Do We Know: The only written evidence we have about Boudica comes from the Roman historian **Tacitus**, whose father-in-law **Agricola** actually served in Britain. Tacitus was writing fifty years after the events he was describing but probably spoke to Agricola and had access to other accounts. A later historian, **Dio Cassius**, also wrote about Boudica, basing much of his history on Tacitus. As these sources were hostile to Boudica they may be **biased** in their descriptions of her. **Archaeologists** have found signs of the destruction and burning of the Roman cities of Colchester, St Albans and London from the time of the revolt.

For more information, a video and a quiz about Boudicca, click here:

<https://www.bbc.co.uk/bitesize/topics/zkrkscw/articles/zhn6cqt>

Info and image from TES.

Expressive Arts Challenge

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Mosaics

Ancient Romans created beautiful mosaic artworks. According to the BBC, the mosaics used in Rome were home decorations and ranged from store-bought common designs to custom made designs. Today, you can make your own mosaic artwork with just some coloured paper and glue. *There is also a link at the bottom for some Roman music for you to explore, including a song about making mosaics.

You Will Need:

- Black construction paper
- Pencil
- Various colours of paper
- Scissors
- Glue stick



Activity idea and photos from www.ehow.com/

Instructions:

1. Work out a mosaic design. Roman mosaics depicted gods and goddesses, gladiators, birds and a wide range of other designs. Draw the design in pencil on the black paper.
2. Cut the coloured paper into small pieces. 1 – 2 cm squared is about ideal. Cut strips and then cut the strips down into squares.
3. Glue the pieces of paper to the black construction paper. Use a glue stick and put the paper on the background according to your preferred colour combinations. Start from the outside, outlining the drawing and then work inwards.
4. Allow the glue to dry and then your mosaic is complete.

To learn more about the Romans and mosaics, click here:

<https://www.youtube.com/watch?v=dop7A0WCKgg>

*Roman music:

<https://www.bbc.co.uk/teach/school-radio/music-ks1-ks2-rocking-romans-8-make-a-mosaic/zby7qp3>