Science Ideas & Curriculum Links

|  |  |  |
| --- | --- | --- |
| YEAR 3 | | |
| Topic | Objectives | Activity |
| Plants | -identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers  -explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant  - investigate the way in which water is transported within plants  -explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. | Pupils to research plants that the Romans gave us.  https://heritagecalling.com/2015/05/21/5-plants-the-romans-gave-us/  This could be developed into a whole project on different types of plants.  In groups, pupils could each be given one of the plants that Romans gave us and asked to deliver a presentation including all of the relevant objectives. |
| Animals, including humans | -identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat | Conduct a project on Roman Feasts. Look at the food wheel and compare the diet of different people within Roman times (i.e. Emperor and slave).  www.historylearningsite.co.uk/ancient-rome/roman-food/  Look at a typical feast table, what was on it? Place pictures of these onto a food wheel. Pupils could then chose an item of Roman food to create, taste and evaluate (D&T link)  [www.bbc.co.uk/education/clips/zgps34j](http://www.bbc.co.uk/education/clips/zgps34j) |
| Rocks | -compare and group together different kinds of rocks on the basis of their appearance and simple physical properties | Research rocks that were used a lot in Roman times, i.e. Travertine  [www.romeartlover.it/Stones.html](http://www.romeartlover.it/Stones.html)  Compare to what is used today, for building etc.  Why were these rocks used? What are the properties of these rocks? |
| Light | -recognise that shadows are formed when the light from a light source is blocked by an opaque object  -find patterns in the way that the size of shadows change. | Look at how Romans used shadow to tell the time.  [www.dl.ket.org/latin3/mores/techno/time/tellingtime.htm](http://www.dl.ket.org/latin3/mores/techno/time/tellingtime.htm)  Create own experiment around shadows at different times of day. Could use chalk on playground to draw around their own shadows. |

|  |  |  |
| --- | --- | --- |
| YEAR 4 | | |
| Topic | Objectives | Activity |
| Living things & their habitats | -explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment | www.explore-italian-culture.com/ancient-roman-animals.html  Romans were fascinated by wild animals. Create a classification key of the wild animals that Romans enjoyed watching and hunting, i.e. wolves, bears and wild boar. |
| States of matter | -observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) | Conduct project on Roman Feasts. Think about what means they had to cook with (open hearth with hanging kettles or in a preheated oven that baked foods as it cooled.) What foods could they heat and cool at what temperatures? Make some of the foods that they had in Roman times, i.e. bread and record what temp the change happens at. This could be turned into a large project, linked to many other subjects inc. D&T.  [www.bbc.co.uk/education/clips/zgps34j](http://www.bbc.co.uk/education/clips/zgps34j) |
| Sound | -find patterns between the pitch of a sound and features of the object that produced it  -recognise that sounds get fainter as the distance from the sound source increases. | Look into Roman instruments and listen to sound clips. Look closely at the features of the object and compare different instruments and their noises.  http://downloads.bbc.co.uk/schoolradio/pdfs/timeandtune\_romans.pdf |

|  |  |  |
| --- | --- | --- |
| YEAR 5 | | |
| Topic | Objectives | Activity |
| Living things & their habitats | -describe the life process of reproduction in some plants and animals. | Choose a plant and an animal from Roman times or that was used a lot in Roman times, i.e. camomile and research/present its life cycle.    [www.explore-italian-culture.com/ancient-roman-animals.html](http://www.explore-italian-culture.com/ancient-roman-animals.html)  <https://heritagecalling.com/2015/05/21/5-plants-the-romans-gave-us/> |
| Animals, including humans | -describe the changes as humans develop to old age. | Caesar was 55 when he was assassinated. If he has lived until he was 80, draw and label him in the different stages of a human’s life. (this could be done with humour, i.e. drawing a baby with a laurel wreath on their head)  Look into statistics of age-expectancy. Shakespeare lived until he was 52, was this common in his era? Why? The pupils generation is expected to live until they’re 100! Why is this? What age do you think your grandchildren will live to? |
| Properties & changes of materials | -use knowledge of solids, liquids and gases to decide how mixtures might be  separated, including through filtering, sieving and evaporating  - demonstrate that dissolving, mixing and changes of state are reversible changes  - explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. | Use the topic of Roman Feasts or the Feast of Lupercal to looks at changing mixtures. Compare what the Romans were able to do with what we are able to do today, i.e. freeze food.  www.bbc.co.uk/bitesize/ks2/science/materials/changes\_materials/read/1/ |
| -give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic | Which materials did the Romans have? Which did they not have? When were different materials invented? How were they invented? Which material did the Romans use for cooking? Why metal? What did they use to create shoes with? Build road with? They already used metal for nails (see photo) etc.  [www.bbc.co.uk/schools/primaryhistory/romans/technology/](http://www.bbc.co.uk/schools/primaryhistory/romans/technology/) |
| Forces | -identify the effects of air resistance, water resistance and friction, that act between moving surfaces | Chariots friction experiment – in groups, pupils use ‘junk’ to create different chariots. Every group could be given wheel a specification i.e. use sandpaper and wheel must be 4cm wide or use cardboard and the wheel must be 2.5cm wide or instead use construction kits. They should then predict, which chariot will be the fastest. Race the chariots down a plank of water and time. Which was the fastest and why? Look at material used on the wheels and width of the wheel. |

|  |  |  |
| --- | --- | --- |
| YEAR 6 | | |
| Topic | Objectives | Activity |
| Living things & their habitats | give reasons for classifying plants and animals based on specific characteristics. | Research wild animals in the colosseum. The types of animals used for these hunting shows were wild boar, bulls, bears deer, stags, dogs, wolves, goats and antelopes.  -Use classification keys to identify and give reasons. |
| Animals, including humans | -recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function | Compare diet and lifestyle now and in Roman times – what impact would this have had on their bodies? What does our lifestyle do to our bodies? Smoking/drinking? The Romans drank lots of wine and took opium from cultivated poppies.  www.primaryhomeworkhelp.co.uk/romans/food.html |
| Evolution & inheritance | -identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. | Romans brought some animals to Britain. Pupils to make a list of animals that the Romans probably brought to the U.K. Have those animals adapted over time? How?  [www.dailymail.co.uk/news/article-1263513/Edible-dormouse-introduced-Britain-Romans-named-No-1-pest.html](http://www.dailymail.co.uk/news/article-1263513/Edible-dormouse-introduced-Britain-Romans-named-No-1-pest.html)  [www.show.me.uk/editorial/1492-did-the-romans-introduce-rabbits-to-britain](http://www.show.me.uk/editorial/1492-did-the-romans-introduce-rabbits-to-britain)  Look at heading ‘non native introductions’ https://halldorviking.wordpress.com/2013/06/14/availability-of-select-wild-animals-in-britain-during-the-early-medieval/ |
| Light | -use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. | Look at how Romans used shadow to tell the time. Make their own sundial and look at the shapes that are made at different times.  [www.dl.ket.org/latin3/mores/techno/time/tellingtime.htm](http://www.dl.ket.org/latin3/mores/techno/time/tellingtime.htm)  Create own experiment around shadows at different times of day. Could use chalk on playground to draw around their own shadows. |