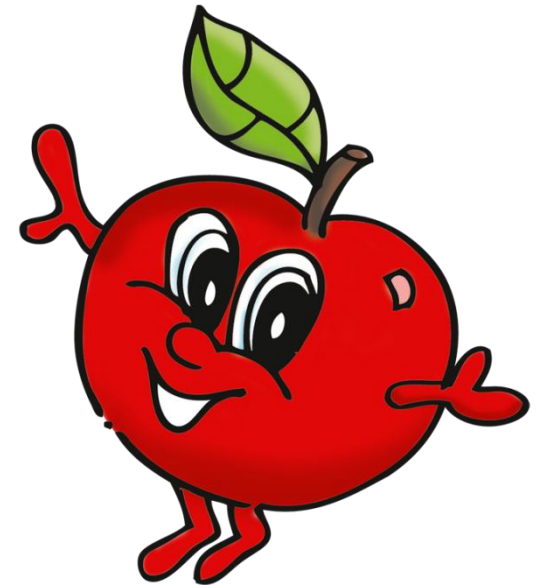


Apple World

A Teacher's Guide to:

A year in the life of

an apple tree.





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Additional Materials Available:

Please ask for PDF or hard copies of our children's comic, colouring sheet and the teacher's whiteboard resource.

An introduction to a year in the life of an apple tree, as a classroom topic.

The yearly cycle of an apple tree may not be something which is on the National Curriculum for KS2 as obviously as 'The Tudors' and 'WW2', however it is an inspiring topic for covering lots of areas of the curriculum in a wide variety of subjects. Most obviously it covers important components of Science and PSHE's healthy eating.

Supported by the National Fruit Show, these resources are aimed at helping children and their families to have a healthy lifestyle, looking positively at eating local seasonal produce. It also focuses on educating these young people on how this food is produced, where it comes from and how this can impact on their local environment.

Practically in the classroom, it is a great subject to investigate many of the elements of the KS2 Science curriculum such as Nutrition, Green Plants and Living things in their environment. It is a useful topic for exploring elements of PSHE, Exploring a healthy lifestyle. Chosen as a complete topic, it is also possible to explore other areas of the national curriculum such as Maths and English.

This teacher's pack provides practical resources which are curriculum linked and ready to use straight away in the classroom. In addition to this, there are links to helpful websites with additional information and ideas to enjoy other subjects with the class.

Subject	Curriculum Reference	Description	Link to Apple Topic
Science			
Life Processes	SC2, 1b	that the life processes common to plants include growth, nutrition and reproduction	How an apple tree grows through the year
Nutrition	SC2, 2b	about the need for food for activity and growth, and about the importance of an adequate and varied diet for health	Why are apples good for us?
Green Plants	SC2, 3a	the effect of light, air, water and temperature on plant growth	What do apple trees need to grow through the year, what do changes in these things do to the growth of the tree?
	SC2, 3b	the role of the leaf in producing new material for growth	The yearly cycle of an apple tree, discussing the important role of new leaves and pruning for light? Briefly touching on photosynthesis.
	SC2, 3c	that the root anchors the plant, and that water and minerals are taken in through the root and transported through the stem to other parts of the plant	How do we feed the trees with extra nutrients, by spraying the trees and putting things in the soil to help them grow?
	SC2, 3d	about the parts of the flower [for example, stigma, stamen, petal, sepal] and their role in the life cycle of flowering plants, including pollination, seed formation, seed dispersal and germination.	Looking at which parts of the flower become the apple
Living things in their environment	SC2, 5d	to use food chains to show feeding relationships in a habitat	The orchard as a habitat for many other animals, plants and insects. What makes it a good habitat?
	SC2, 5e	about how nearly all food chains start with a green plant	Who eats the apple trees?

	SC2, 5f	that micro-organisms are living organisms that are often too small to be seen, and that they may be beneficial [for example, in the breakdown of waste, in making bread] or harmful [for example, in causing disease, in causing food to go mouldy].	What microorganisms affect the tree and apples as they grow. Why and how do we store our fruit to stop it rotting?
Citizenship			
Developing a healthy, safer lifestyle	3a	what makes a healthy lifestyle, including the benefits of exercise and healthy eating, what affects mental health, and how to make informed choices	Healthy eating, why apples are so good for you.
PSHE			
Developing confidence and responsibility and making the most of their abilities	PSHE, 1e	about the range of jobs carried out by people they know, and to understand how they can develop skills to make their own contribution in the future	Who farms? Local farmers and their jobs. What they would need to do to become a farmer. What is involved in fruit farming?
Developing a healthy lifestyle	PSHE, 3a	what makes a healthy lifestyle, including the benefits of exercise and healthy eating, what affects mental health, and how to make informed choices	Healthy eating, why apples are so good for you.
Geography			
Breath of Study-Localities	G, 6a	During the key stage, pupils should be taught the knowledge, skills and understanding through the study of two localities and three themes: a locality in the United Kingdom	Looking at local apple farms in Kent

Themes	G, 6c	water and its effects on landscapes and people, including the physical features of rivers [for example, flood plain] or coasts [for example, beach], and the processes of erosion and deposition that affect them	How water is necessary for the orchard and why some farms build reservoirs and have irrigation
	G, 6e	an environmental issue, caused by change in an environment [for example, increasing traffic congestion, hedgerow loss, drought], and attempts to manage the environment sustainably [for example, by improving public transport, creating a new nature reserve, reducing water use].	How water is necessary for the orchard and why some farms build reservoirs and have irrigation. Effects of drought, frost, sun. Also, measure to change the environment of orchards to encourage wildlife, e.g., hedgerows, cover crops.
History			
Local history study	H, 7	A study investigating how an aspect in the local area has changed over a long period of time, or how the locality was affected by a significant national or local event or development or by the work of a significant individual.	Looking at local apple farms in Kent and how changes in technology and interaction with European farmers has significantly affected who picked the fruit, how it was picked and how it looks in orchards across the country and europe now.

To complement the teachers pack, we offer a FREE 1hour interactive workshop in your classroom delivered by a dedicated education officer.

Overview:

Children will learn about 'A Year in the Life of an Apple Tree' and how much effort goes into growing this super fruit with our fun hands-on lesson aimed to tickle the taste buds and get the children excited about healthy eating. Linked closely to the KS2 Science curriculum, we will play games, hold a copy of the 'biggest apple in the world', ask questions and try different varieties of apple. And if that wasn't enough, each class will have the opportunity to plant a real apple tree, donated by us, in their school grounds to enjoy and carry on the learning.

Pre-visit ideas:

Discussion

- How many of you think about where your food comes from. Discuss local v's worldwide foods.
- Can all the foods we eat come from this country? If not why not? What things affect how our food grows? What do all plants need to grow?
- What is the name of the person who grows your food? Do you think this is a hard or easy job? What do you think it involves?
- What do you need for a healthy diet? What foods are good for you?

Activities

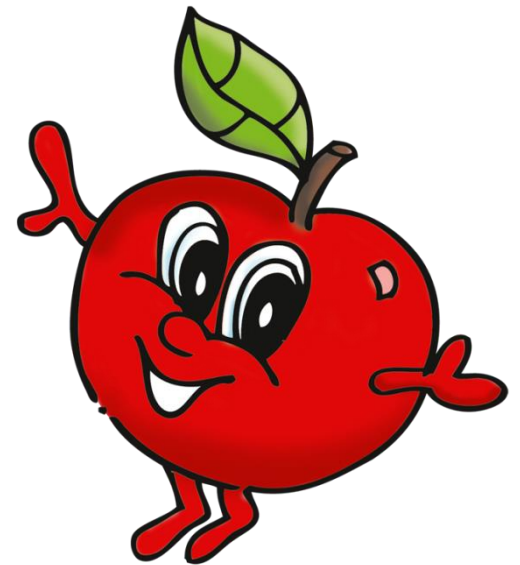
- When you go to the supermarket with your grown-ups, have a look at the apples on the shelves. Which varieties can you spot? Where do they come from?
- Make the ultimate healthy lunch box, what would be in there?
- Ask a grown up to take you on a walk around where you live. Is any food grown near you/your school? What does it look like where it grows, or why don't you think any is grown in this area?

Step by Step:

1. Introduction to the topic and discussion about healthy eating.
2. Read aloud activity, discussing varieties and how to eat apples. Looking at the biggest apple in the world and a volunteer to feel the weight.
3. Team picture sorting activity. How do you think apples are grown in this country, sort the cards into the right order.
4. Reveal the answers and discuss.
5. Physical activity, everybody miming how we pick apples. A volunteer to wear the equipment and feel the weight of the bags farm pickers wear.
6. Tasting the apples and discussing what makes a great apple.
7. Comics, recipes and colouring sheets handed out to read later.
8. Tree planting in the school grounds, with the chance to ask a farmer questions about their job and apple growing.

How to book:

If you would like to book one of these class workshops please contact the National Fruit Show office on **01732 874564** or email nfs@nationalfruitshow.org.uk. Places are limited and it is first come first served so make sure you don't miss this unique opportunity.



Notes to accompany white board power point on: A year in the life of an apple tree.

You should receive a powerpoint presentation with this pack either by email or by following a link. The power point presentation aims to show children the 12 main stages in the year of an apple tree. **If you have not had this, please contact the National Fruit Show office on 01732 874564 or email nfs@nationalfruitshow.org.uk**

Activity: Turn this into an interactive class game, print out packs of the slides and ask the children to get into groups and arrange them in the order they think they go in. Then as a whole class go through slide by slide putting them in the right order and discussing what is happening at each stage.

Here is extra information for you to add to your class discussion as you look through the slides. We have also included curriculum reference points to help you expand this part of the topic later if you wish to. Please refer to the Curriculum in detail in the teachers pack.

Card 1: Bare Trees

Winter for an apple tree is very important. This is when the tree stops using its energy to produce leaves, buds and apples. Instead, this leafless tree sleeps, storing all of its energy for when things warm up. The colder it is, the better and deeper the tree sleeps and the more energy it can save to burst to life in the spring.

Curriculum links: Science SC2 3a

Card 2: Mouse Ear Leaves

The first leaves that show themselves in early spring are nick named Mouse Ears!

If the tree has had the winter chill and sleep, all leaves on the trees should begin to wake up at the same time. This means all the apples should come at the same time too and this makes picking them lots easier in the autumn.

Extra things to think about: Photosynthesis

But what is special about the leaves? Why are these leaves so important? The tree needs leaves to make the energy to grow the apples. Without the leaves there would be no apples.

The leaves turn air and water into energy for the tree using sunlight. This energy is used to help the apples grow all through the year. When the leaves fall off there is no sunlight left, no apples to grow and the tree has to store the little energy it has left to grow new leaves next year. Like the first slide we saw.

Curriculum links: Science SC2 1b, SC2 3b

Card 3: Blossom

Apple blossom gives the first indication of how well the apple tree will produce that year. Each blossom represents an apple. The stem of the flower will become the apple stalk and the middle of the flower will become the fluffy bottom of the apple. Look at this picture of blossom, does it remind you of anything?

Extra things to think about: All apples are related to the Rose family. Can you see a likeness in the flower? When a rose loses its petals you are left with a rose hip. In apples this is the part which becomes the fruit.

Curriculum links: Science SC2 1b, SC2 3d

Card 4: Pollination

Bees play an important role. They go from flower to flower taking the pollen of one tree to the flower of another. If they didn't do this no apples would form. This is called POLLINATION

Extra things to think about: who else is helpful to the farmer?- lady birds, birds . You could look at **food chains** here, who eats who and how does this help the farmer? There is an example about this in the comic under good ladybirds and good birds! Or explore **habitats**, what makes the orchard a great place for some animals and insects? How does the farmer encourage them and how does this help to grow apples? Some farmers actually encourage ladybirds by putting up bug boxes or plant cover crops full of tasty bird treats to encourage insect eating birds.

Curriculum links: Science SC2 1b, SC2 3d, SC2 5d

Card 5: Thinning

Too much blossom means too many apples. Each tree has a certain amount of energy to grow apples. Reducing the blossom with a special machine, means there will be less apples so each one will get more of the tree's energy. **How it's done:** Hand thinning v's mechanical thinning with the saw blade. As soon as the bud is pink, much less precise but much more cost efficient.

Extra things to think about: From hand picking to mechanical farming, how has the development in technology changed the way we farm. How has this affected the production of fruit, the distribution and people's jobs. Has it changed the history of your local rural area?

Curriculum links: History H7

Card 6: Baby Apples growing

Who is threatening the health and growth of our delicious apples?

Bad bunny who eats the grass and the tree bark as part of it's food chain, Bad fungus (a microorganism which attacks the fruit skin) and the codling moth to name a few!

Curriculum links: Science SC2 5d, SC2 5e, SC2 5f

Card 7: Spraying

Just like us, apple trees sometimes pick up bugs or get sick. There is a special tree doctor called an agronomist, who diagnoses the problem and prescribes them medicine to make the trees better. This is given to the trees along with extra food to make them stronger and get better faster. **How it's done:** This is done by mixing the medicine in a big machine which attaches to a tractor and it then sprays the medicine out of special hoses.

Irrigation:

Many farms also have something called irrigation. This is where the farmer lays pipes all along the soil by the trees and is able to send water out to the orchards when the weather is very hot. This means they have a better chance of giving the trees exactly the right amounts of water directly to the roots where they need it, to help get a great crop of apples.

Farmers can also use this irrigation system to add nutrients and medicine directly to the roots of a tree too. This is the quickest way to get these things into the tree as the roots act like a giant straw, sucking up and distributing these extras to the whole tree.

Curriculum links: Science SC2 1b, SC2 3c, SC2 5f, Geography G6c, G6e

Card 8: Bigger Apples Ripening

Although the apples will look ready to eat when they hang on the trees, they actually take a long time to become the juicy fruit we all know and love. Over the summer, they begin to change colour and the amount of sugar in the apples builds up. They also become soft so that we can eat them.

How it's done, very tricky stuff!: Explain how the sugars are tested using a refractometer and how the apples change colour so we know exactly when to pick them.

To use a refractometer, you squeeze the juice out of an apple and place it on a clear plate. Then you look through a special eyepiece on a refractometer and it measures how much light is being refracted (this means bending the light) through the juice. Different amounts of sugar in the juice change the amounts of light is bent refracted, so by looking at this we can see how much sugar is in the juice and therefore if the apple is sweet enough to pick. See the resources page in the teachers pack for help explaining this.

Curriculum links: SC3 2a, SC4 3c

Card 9: Picking

The end of summer and the beginning of autumn are the busiest times for farmers. This is when they must pick all of their apples. Pickers must be careful not to damage or bruise the fruit before it is sent off to various places. **How it's done:** Explain how the picking was done and how it is done now with platforms and picking trains. Explain about the changes in technology and knowledge. Explain about picking to a specification.

Activity:

- 1)

Everybody up. Although there is lots of technology involved in the picking of apples, getting the apples of the trees is still all done by people. Every apple is handpicked. So I will show you how to do it and then I want everyone to have a pretend go at picking. I am looking for the best pickers to help me with the next task.
- 2)

Right I need someone who thinks they are so strong they could be an apple picker. Picking is hard work. Once you pick the apple off the tree you put it into one of these carriers (have a picking bucket) When this is full, you must take it over to the picking train and carefully lower your apples in to the bins. So who thinks they could do this? Get someone out to the front and get them to put on a pickers bucket. Fill it with the weights I have and see how they feel. Get them to tell the class. Is it heavy or light etc.

Extra things to think about: From hand picking to using picking trains and hydrolic selfdriving picking platforms. How has the development in technology changed the way we farm. How has this affected the production of fruit, the distribution and people's jobs. Has it changed the history of your local rural area?

Curriculum links: History H7

Card 10: Storing

British apples are seasonal, that means that they are ready to eat in a certain season but not all year round. They are ready to pick at the end of the summer/early autumn. But that is not the only time that you can eat them. To keep them from going rotten, they are put in huge fridges called cold stores. An apple that is picked but not put into cold stores will rot 6-10x faster than an apple in storage. But that doesn't mean it lasts forever. It still rots but much much slower.

Extra things to think about: Putting apples in coldstore works by stopping them ripening any further. To ripen the apple, like us must breath (respire) to do this it needs oxygen. Controlling the levels of oxygen in the cold stores helps to stop them breathing and in turn ripening. In the same way any microorganisms which cause the fruit to rot and also need to breath do not have enough oxygen and so effectively go to sleep.

Curriculum links: SC2 5f

Card 11: Eating

Before they get to the supermarket shelves, the apples are sent to huge packing houses where they are sorted into different sizes and groups and put into different boxes ready for supermarkets, juicing and for ingredients in things such as apple pies, and Christmas mincemeat. There are even apple crisps. There are just so many ways to enjoy apples, can we think of them? Who remembers some of the things we mentioned at the beginning of the workshop?

Extra things to think about: What's so good about apples? They are tasty and they are very good for you. So why are apples so good for us?

Apples have no added or artificial (that means man made) sugar or colourings. They have no fat and have lots of fibre which is good for our digestion. They also contain lots of very important vitamins and minerals such as Vitamin A, B and C. Can anyone tell me why vitamin c is good for you? And also calcium which is good for our bones. People often say, 'an apple a day keeps the doctor away'.

They are a great snack as part of your 5 a day!

Curriculum links: SC2 2b, PSHE 3a

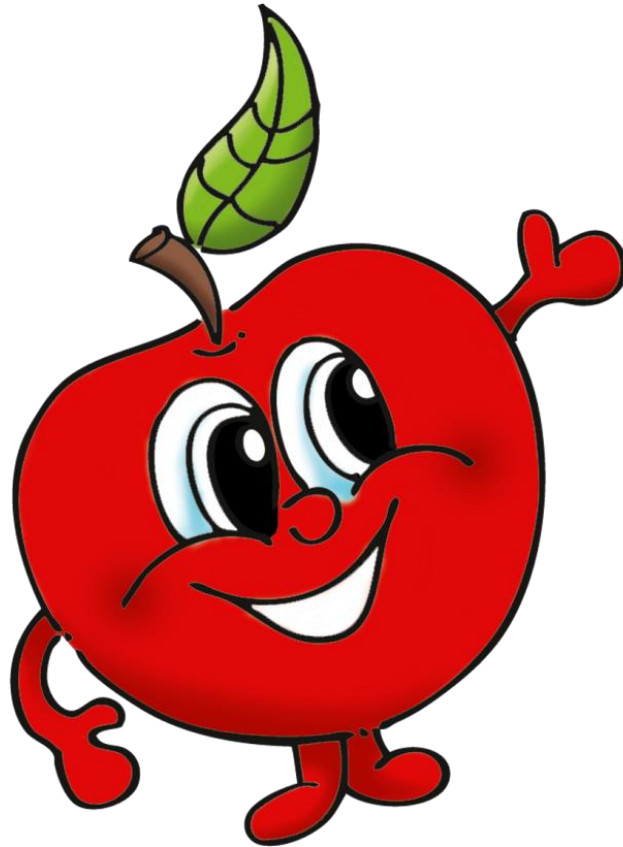
Card 12: Pruning

At the end of the season, when all of the apples are picked and the leaves have fallen off, farmers still have one job left to do. **PRUNING!** Autumn/Winter pruning is important to ensure that the next year all the branches and leaves get enough light and energy to grow the best apples. Cutting off branches, actually makes more grow and they will be healthier too. A bit like a good hair cut! **How it's done:** hand saws, pruning secateurs, electric pruners.

Curriculum links: SC2 1b, SC2 3a, SC2 3b

Activity: Seasons

Thinks about the seasons. In which season do you think all these things happen?



New Words

With every new topic there always comes a list of new words, here's some we think your kids will need to know to help them get a good grasp on this topic.

Photosynthesis – the process used by all plants to create their own food. Light + Water + Carbondioxide = Sugar and Oxygen

Pollination – Pollination is the way the pollen from the male part of the flower gets to the egg in the female part of the flower to form a seed.

Four main parts of a flower

Sepal - Protected the flower when it was in bud. The sepal is often green.

Stamen - The male part of the plant which produces the pollen (yellow, dust like). (anthers - tops of stamen, filaments - bottom part)

Petals - Brightly coloured in insect pollinated plants. Small (or non-existent) in wind pollinated plants.

Carpel - The female part of the plant which produce fruit (this becomes the apple) once pollination has taken place. The fruit contains seeds.

Variety - different types of the same thing, as in lots of different varieties of apple.

Habitats -

Pruning - Cutting off any extra parts of the apple tree which are not needed in order for the apple tree to grow fit and healthy and therefore produce more apples. It's a bit like getting a good haircut.

Irrigation – The artificial application of water to last to help in growing crops.

Agronomist - A scientist who studies the use of plants as food. They will look after/advise on the things the plants need such as the vitamins and minerals in the soil, any medicines, water, sunlight, food and watch out for pests and diseases.

Ideas for exploring other areas of the National Curriculum

The yearly cycle of an apple tree is very versatile, lending itself well to covering a number of topics in several subjects on the National Curriculum for KS2. Here are just a few ideas of things you might like to explore in the classroom.

Science

- Exploring the lifecycle of plants, how does an apple tree fit in with the pattern? What does it look like at each stage of the cycle?
- Draw and label the parts of a flower. Which parts of the flower turn into the apple?
- Testing sugars, a science experiment looking at sugar content in apples.
- The orchard as a habitat. Look at who lives in the orchard, how does one animal depend on the next- 'foodchains'. How do farmers use the orchards natural habitat to help grow the apples?

Geography

- What are farmers doing to overcome unsuitable weather conditions like drought? Looking at environmental problems and solutions.
- Looking at new and old maps of your local area. (See map link on the resources page and using images from Google earth) Can you see any orchards now or over the last few hundred years? How have orchards changed the landscape, have they got bigger /smaller/ appeared or disappeared?

Maths

Comparing old and new ways of planting an orchard can give children lots to think about in maths.

Working through this problem children will need to multiply and divide. They will also be using measurements of weight and area. You could also use measurements of money.

Here is an example of a maths question with this topic:

Problem: The farmer must get the most amount of apples from his orchard to make the most amount of money. The old way of planting apple trees means that the apple trees can get a lot bigger and therefore have the most number of apples on each one. The new way of planting apple trees in an orchard means there are more trees but they are much smaller and grow less apples per tree. What should the farmer do?

Example of workings and answers:

The farmers orchards are all 1 hectare. 1 hectare is 100 x 100 meters.

The old orchard

Each row is spaced at 4.5meters. How many rows are in the orchard?: $100/4 = 25$

In each row the trees are spaced 2.5 meters apart. How many trees are in each row? $100/2.5 = 40$

How many apple trees are in each orchard? $25 \times 40 = 1000$

Each tree grows 30 kgs of apples. How many apples grow in the orchard? $1000 \text{ trees} \times 30\text{kgs apples} = 30,000\text{kgs of Apples}$

$1000\text{kgs} = 1 \text{ ton}$

How many tonnes of apples are grown in the old orchard? $30,000/1000 = 30 \text{ tonnes}$

The new orchard

Each row is spaced at 2.5meters. How many rows are in the orchard?: $100/2.5 = 40$

In each row the trees are spaced 2.5 meters apart. How many trees are in each row? $100/1 = 100$

How many apple trees are in each orchard? $40 \times 100 = 4000$

Each tree grows 15 kgs of apples. How many apples grow in the orchard? $4000 \text{ trees} \times 15\text{kgs apples} = 60,000\text{kgs of Apples}$

$1000\text{kgs} = 1 \text{ ton}$

How many tonnes of apples are grown in the old orchard? $60,000/1000 = 60 \text{ tonnes}$

So even though the old orchard has bigger trees, the new orchard grows more apples because there are so many more apple trees in the orchard.

You could mark this out on graph paper, or extend the maths question to add a monetary value to the apples.

English

- Reading, Listening and Writing - Look at the poem 'Apples' by Laurie Lee. Read it out in small groups or use the children's poetry archive in the resources. Bring up the poem in the white board; there is a reading on this website by the poet himself.
(<http://www.poetryarchive.org/childrensarchive/singlePoem.do?poemId=7512>. this is a link to the poem and an actor reading this, on the useful links page)

Apples

Behold the apples' rounded worlds:
juice-green of July rain,
the black polestar of flowers, the rind
mapped with its crimson stain.

The russet, crab and cottage red
burn to the sun's hot brass,
then drop like sweat from every branch
and bubble in the grass.

They lie as wanton as they fall,
and where they fall and break,
the stallion clamps his crunching jaws,
the starling stabs his beak.

In each plump gourd the cidery bite
of boys' teeth tears the skin;
the waltzing wasp consumes his share,
the bent worm enters in.

I, with as easy hunger, take
entire my season's dole;
welcome the ripe, the sweet, the sour,
the hollow and the whole.

Laurie Lee

- Discuss the descriptive language used by Laurie Lee. How does it make you feel? Can you imagine eating an apple when you read it? Use this poem to help pupils write their own apple inspired poems.
- Creative Writing- What do you think it would be like to work on an apple farm? Use all of the information about growing apples to inspire pupils to create a fictional 'day in the life of a farmer'.
- Speaking -Discuss the question; Is it important to buy British apples? Pupils could practise their skills at developing an argument and listening to each other's points of view.

Art

Be inspired by Cezannes astonishing apples!



<http://www.metmuseum.org/metmedia/kids-zone/start-with-art/cezannes-astonishing-apples>

Go to the web page above, there are lots of ideas on how to look at apples in art inspired by one of the great artists of his time, Paul Cezanne.

Cezannes paintings of apples show a real move away from impressionist painting to a much more accurate, modern still life painting.

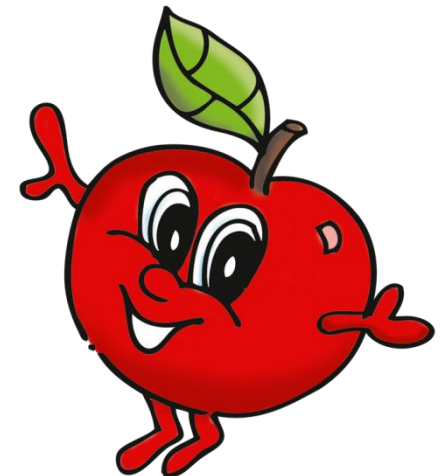
Encourage the class to set up a still life drawing display of healthy fruit and vegetables and make close studies of them. Or get each member of the class to make a detailed study of one fruit or vegetable and then have fun creating a colourful harvest festival of beautiful art work.

Fun facts about apples

Here are some fun and engaging facts to throw into your lessons. Maybe you could create a true or false game for the kids or a fun quiz to finish off a Friday?

- Today we know that apples are good for us but if you spoke Latin you might be wary of the apple. Its Latin name 'Malus Domesticus' actually has the latin for bad at the beginning; *malus!* It was thought to have been given this name because Eve gave Adam the apple in the Garden of Eden when God had told her not to! That's also why the lump in a man's neck is called his Adam's apple, it is thought to be the bite of apple he took from Eve, stuck for always.
- There are over 7,500 varieties which we can identify in the world but not all of them are grown commercially- that means for the shops to sell. Different apple varieties suit different environments better.
- There is a very special apple variety called Howgate Wonder which held a title of the Guinness Book of World Records for the largest apple in the world and it was grown on West Pike Fish Farm in Kent by Alan Smith. It weighed a whopping 3lbs 11oz and held the title for 10years until according to *Guinness Book Of World Records*, in 2005, Chisato Iwasaki of Japan grew an apple that weighted just over four pounds. That's the size of a pumpkin!
- The world's longest single continuous apple peel was created -- very carefully -- by Kathy Wafler Madison (age 16) on October 16, 1976. It measured 172 feet, 4 inches long.
- The first leaves that show themselves in early spring are nick named Mouse Ears!
- Did you know that in the winter, farmers recommend a tree gets 200 hours sleep in temperatures below freezing to produce the best apples the year after. That's nearly a month of bedtimes!
- The colour of an apple is determined by the weather, to get a really red apple you need a sunny day and a cold night.
- If an apple grows from a pip, it will not necessarily be the same variety as the apple it came from. To guarantee the type of apple farmers have to plant saplings in their orchards not pips.
- Did you know that all apples are related to the rose family.

- Each year in this country alone we grow hundreds of thousands of tonnes of apples. In fact we sold nearly 300,000 tonnes of fruit for all different uses last year. That's enough to fill over 1000 school halls!
- 45% of all the apples grown in the UK come from Kent
- 25% of an apple's volume is air, which is why they float
- Don't peel your apple! Two-thirds of the good stuff in an apple are found in the apple skin.
- The game of apple-bobbing began as a Celtic New Year's tradition for trying to determine one's future husband or wife.
- It takes energy from 50 leaves to produce one apple.
- The old saying "an apple a day, keeps the doctor away" comes from an old English adage, "To eat an apple before going to bed, will make the doctor beg his bread."
- Archeologists have found evidence that humans have been enjoying apples since at least 6500 B.C.
- Apple varieties range in size from a little larger than a cherry to as large as a grapefruit. There are apples that have an aftertaste of pears, citrus, cinnamon, cloves, coconut, strawberries, grapes and even pineapple!



Easy as pie! Apple recipes for big and little kids.

Cinnamon Apple Chips

Makes approximately 40 chips

Prep: 15 minutes; Bake 30-40 minutes

Ingredients

450mls unsweetened apple juice

1 cinnamon stick

2 eating apples

Directions

1. Heat oven to 140c / gas mark 1
2. Combine apple juice and cinnamon stick in a pot; bring to a low boil while preparing apples.
3. Core the apples. With sharp knife, slice off 1/2-inch from top and bottom of apples and discard (or eat!). Saw gently crosswise into very thin (1/8-inch) rings, rotating the apple as necessary to get even slices.
4. Drop the apple slices into boiling juice; cook 4 to 5 minutes or until slices appear translucent and lightly golden.
5. With a slotted spatula, remove the apple slices from juice and pat dry with a paper towel.
6. Arrange the slices on cake-cooling racks, being sure none are touching.
7. Place the racks on the middle shelf in oven; bake 30 to 40 minutes until apple slices are lightly browned and almost dry to touch.
8. Let chips cool on racks completely before storing in airtight container.

Easy Apple Flapjacks

Makes approximately 12-14 bars

Prep: 15 minutes; Bake 20-25 minutes + time to cool

Ingredients

250g (8oz) butter

250g (8oz) caster sugar

175g (6oz) golden syrup

425g (14oz) porridge oats

2 apples, peeled and chopped

Directions

1. Preheat oven to Gas 4, 180°C, fan160°C.
2. Oil and line base of a 20x30cm (8x12in) cake tin with baking parchment.
3. Melt butter, caster sugar and golden syrup together in a pan, stirring until sugar has dissolved. **Remember melting butter and sugar gets very very hot, always ask a grown up to do this bit!**
4. Remove from heat and stir in oats and apples (For your own version, try adding raisins, nuts or some spices)
5. Spread mixture in tin and bake for 20-25 minutes. Cut into 12-14 bars; allow to cool before turning out of the tin.

Traditional Apple Crumble

Makes approximately 1 family sized crumble for 4

Prep: 10 minutes; Bake 45 minutes

Ingredients

6 eating apples or 4 cooking apples

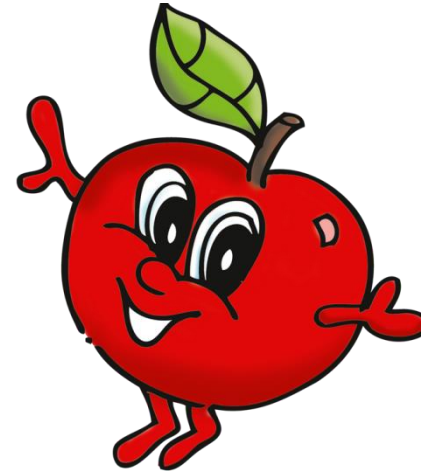
2½tbsp caster sugar

2tbsp water

100g (3½oz) plain flour

50g (2oz) porridge oats

50g (2oz) butter



Directions

1. Preheat the oven to Gas 5, 190°C, fan170°C.
2. Peel, core and thinly slice the apples,
3. Place in a 1-litre pudding basin. Sprinkle with a little of the sugar. Pour over 2tbsp boiling water.
4. Place the flour, sugar and oats in a mixing bowl.
5. Add the butter and rub into the mixture until it resembles breadcrumbs.
6. Sprinkle topping over the apples and bake for 40-45 minutes until golden brown.
7. Serve with a spoonful of custard, ice cream or crème fraiche.

Beautiful Baked Apples

Makes approximately 4

Prep: 10 minutes; Bake 35-45 minutes

Ingredients

4 dessert apples, Bramleys work great for this recipe!

4 teaspoons of either soft brown sugar/ caster sugar/ golden syrup/ honey/ maple syrup or treacle.

4 small knobs of butter

4 teaspoons of sultanas or raisins (you can use your imagination and fill the apples with any dried fruit and you could even add a pinch of spice such as cinnamon)

Directions

1. Preheat the oven to Gas 4, 180°C,
2. Wipe the outside of the apple to clean the skin.
3. Using an apple corer, take out the middle of the apple. Ask a grown up to help if this is hard. Make sure there are no pips left inside.
4. Gently score a line around the middle of the apple skin to stop it bursting as it cooks and helps it cook evenly.
5. Pack the centre with your mixed fruit, top this with sugar or sweet syrup and add a knob of butter to the very top.
6. Pop all 4 together in a baking dish and bake for 35-45 minutes or until the apple is soft all the way through.
7. You could always serve with a spoonful of custard, ice cream or crème fraiche.

Links to other resources

It helps to know where to look! Here are some of the great resources we have found that could help you discover this topic.

Photosynthesis

- free downloadable PDF poster for children to learn from : <http://www.edenproject.com/blog/index.php/2012/07/photosynthesis-diagram-for-kids-how-plants-help-us-to-survive>
- <http://photosynthesisforkids.com/>

Pollination

- <http://kidsgrowingstrong.org/Pollination>
- <http://sciencewithme.com/learn-about-pollination/>

Plants in general

- http://www.bbc.co.uk/gardening/gardening_with_children/didyouknow_flowers.shtml
- <http://www.primaryresources.co.uk/science/flower.htm>
- Plant life worksheets <http://www.classroomjr.com/plant-life-for-kids/>
- <http://www.tes.co.uk/teaching-resource/KS2-Animal-Habitats-6020156/> <http://www.tes.co.uk/teaching-resources/primary-42198/ks2-science-44091/living-things-44092/green-plants-44093/> http://www.bbc.co.uk/bitesize/ks2/science/living_things/plants/read/1/
- http://www.kenttrustweb.org.uk/kentict/kentict_subjects_sc_reskent.cfm

Habitats

- http://www.bbc.co.uk/bitesize/ks2/science/living_things/plant_animal_habitats/read/1/
- <http://www.wildwoodtrust.org/files/ks2-habitats.pdf>

Apples

- Apple tree cycle diagram <http://www.fiferorchards.com/wp-content/uploads/2012/02/life-of-an-apple-tree.jpg>
- Lifecycle of an apple tree <http://www.springboardmagazine.com/science/lifecircle.htm>
- More free apple information, ideas and resources THIS IS AN AMERICAN SITE it has lots of different varieties. Discuss with children that different varieties prefer different environments. <http://www.usapple.org/consumers/for-educators/educational-materials>
- Great Kentish resource doing lots for British apples <http://www.brogdalecollections.co.uk/>
- <http://www.theenglishappleman.com/index.asp>
- Free apple related crafts <http://www.enchantedlearning.com/school/usa/people/Appleseedindex.shtml>
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Healthy Eating

- Healthy kids recipes including apple sauce <http://kidshealth.org/kid/recipes/>
- <http://www.abcand123learning.com/2009/09/kids-in-kitchen-apple-recipes.html>
- <http://www.schoolfoodmatters.com/>
- <http://www.childrensfoodtrust.org.uk/>
- <http://www.face-online.org.uk/resources-all>
- <http://www.foodafactoflife.org.uk/>

Other

- Looking at measuring sugars as a science experiment, Refractometers: http://www.ehow.com/how-does_5314561_refractometer-work.html
http://www.ehow.com/how_8658799_refractometer-reading.html
- Poem called 'Apples' by Laurie Lee, audio and written <http://www.poetryarchive.org/childrensarchive/singlePoem.do?poemId=7512>
- Looking for orchards in your local community to see how they shape the landscape, <http://www.old-maps.co.uk> or try the new heritage and archive centre in Maidstone, Kent. <http://www.kentarchives.org.uk>

National Fruit Show

- <http://www.nationalfruitshow.org.uk/schools/>

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