



SEED

Sessions and handling boxes for schools

Topic summary

'SEED' is a topic within 'Sophy and White Unboxed' a 30-month collections-based project funded by the National Lottery Heritage Fund. The 'SEED' topic focuses on objects relating to traditional agriculture and food growing... local methods, skills and traditions... and how mechanisation has changed our landscape and what and how we eat.

We hope to learn more about connections between changing methods and the way we eat today. Traditional, low impact, sustainable methods of food growing will help to inspire and educate people in today's climate crisis.

Topic scope

Farming, food production and processing, diet and cooking methods in Argyll through the ages; comparing and contrasting these with those of other cultures worldwide, past and present. Non-food seeds which made an impact on Scottish cultural life. Raising questions of sustainability, food security and sovereignty.

SEED learning resource

This online learning resource has been created for us by Colour Heroes Ltd and has been designed to accompany the object-handling box.

The handling box

The handling box is available to be loaned out to schools for classroom-learning purposes. It is aimed mainly at Level 2 learners of the Scottish Curriculum for Excellence.

The topic-related objects within the handling box are a mixture of genuine artefacts from the Dunollie collections and reproduction objects. These objects have been selected to spark curiosity and can be a focus for a range of learning activities.



LIST OF OBJECTS/RESOURCES

1. Quern.
2. Bannock girdle and spade.
3. Mortar and pestle.
4. Potato masher.
5. Butter churn, glass, mid 20th century (*not safe for food use*).
6. Cream maker, mid 20th century (*not safe for food use*).
7. Butter paddles.
8. Cheeser.
9. Mesolithic/mid Stone Age bowl.
10. Mesolithic flint and antler sickle.
11. Mesolithic fish harpoon.
12. Bronze Age birch bark pot.
13. Iron Age wooden pot with animal skin lid.
14. Horn beaker.
15. Horn spoon.
16. 16th century wooden trencher.
17. 13th/17th-century leather jack.
18. 16th/17th-century pewter jug.
19. 17th-century cutlery – knife and pricker set.
20. Knife and fork rests, steel.
21. Silver-plated child's spoon and pusher set, 1950s.
22. Chopsticks.
23. Sugarloaf cutters.
24. Sugarloaf (*clay model – not edible*).
25. Flaxseeds, fibre, unbleached linen thread and woven sample.
26. Sea bean.

The box of handling objects is accompanied by notes for teachers, together with the online resource.

THE OBJECTS

1. Quern



A quern is an ancient stone tool used to mill grain. They were first used in the Neolithic period, that is, from 5,500 BC. They have been found worldwide, and some types of quern are still in use today.

There are different types.

The earliest querns are called 'saddle querns' which were made of a large 'bedstone', and a handheld 'rubbing stone' which was used to push backwards and forwards over the grain and grind it into flour. Doing this every day was extremely hard work, and ancient skeletons have been found showing damaged knee and hip joints from kneeling and doing this essential job.

By around 500 BC, these simple querns were replaced by the 'rotary quern'. The quern which you are looking at today is a rotary quern. These were made of two flat circular stones. An upper stone sits on top of a lower stone, and the two are connected by an 'axle' or wooden shaft in the middle. Grain was poured into a hole (the feeder pipe) in the upper stone. Another small hole holds a wooden stick which was used as a handle to rotate the stone and grind the grain.

By the Middle Ages, large millstones came to be driven by waterwheels and windmills. There are terrible tales from the 19th century of landlords forcing crofters to pay to use the mills by taking away or breaking their querns. Mills could be far from their croft. There are lochs where querns were thrown, such as 'Loch nam Bràithntean', 'The Loch of the Querns' in South Uist.

Nowadays, cereals like wheat and oats are milled in large factories. We don't have to spend hours doing this heavy work so that we can have our basic food.

**Can you name some foods made from flour?
E.g. bread, scones, chapattis, pasta.**

2. Bannock spade and girdle



This is a typical girdle and bannock spade (or 'bannock peel' as it was sometimes called). The spade may look a bit like a weapon! But it was simply a tool for flipping the bannocks.

Bannocks have been a Scottish staple since early medieval times. The original bannocks were flat, heavy cakes made from barley or oatmeal.

The most common grain was 'bere barley', an ancient variety still grown in Orkney and the Hebrides. The dough was formed into a round or oval shape, then cooked on a 'bannock stane'. This flat stone was placed directly onto a fire as a cooking surface. Bannocks were also often made from pea or bean meal mixed with barley, which added protein.

In the 15th century, some local laws required tenant farmers to sow peas and beans as part of a crop rotation, what we would now call 'sustainable farming'. This 'green' organic method of farming ensured that nutrients were put back into the soil. For centuries in the Hebrides, seaweed was used as a rich fertiliser.

Artificial nitrogen fertilisers and food system industrialisation began in the 20th century, and so traditional methods of soil improvement faded away. However, there has been a growing movement towards organic farming in recent decades.

Bannock recipe

Bannock has been a staple of Scottish kitchens for centuries. Originally cooked on a stone or griddle over an open fire, bannocks were made from simple ingredients like oat or barley.

Try the recipe by scanning the QR code.



Any type of flour can be used, the oat flour can be substituted with more of the same flour. Why not try flours from different world cuisines such as gram? The most authentic flour would be 'bere' barley meal. Bere barley is the ancient grain of Scotland but nowadays is only cultivated on the Hebrides and Orkney Islands.

There is a short poem by Robert Burns on 'bear meal' Bannocks:

Bannocks o' bear meal,
Bannocks o' barley,
Here's to the Highlandman's
Bannocks o' barley!

Wha, in a brulyie, will
First cry a parley?
Never the lads wi' the
Bannocks o' barley!

Wha, in his wae days,
Were loyal to Charlie?
Wha but the lads wi' the
Bannocks o' barley!

3. Mortar and pestle



Mortar and pestles have been used in food and medicine preparation since the Stone Age.

The grinding process breaks down materials, e.g. herbs, seeds or spices into a paste or powder.

4. Antique potato masher



Known as a 'tattie basher' in Scotland, this type of masher works in a similar way to the mortar and pestle – the cooked potatoes are pounded until they form a pulpy mash.

Many old Scottish recipes have a soft consistency like this, such as porridge, Scotch broth, or haggis, neeps and tatties. One reason for this may be that there were no dentists or dental hygiene – people did not have toothbrushes and could not take care of their teeth – so began to lose teeth at a young age, in their twenties.

OBJECTS 5 TO 8

RELATE TO DAIRY PRODUCE

5. Butter churn



Butter churns and cream makers like these were commonplace kitchen tools in Scottish households from the 1930s to 1960s.

6. Cream maker, mid 20th century



7. Butter paddles, 20th century



These wooden paddles were used to shape the freshly made butter into pats for the table.

Butter is still sold in packets of the same size and shape that these paddles would make.

8. Wooden cheeser, 20th century



This simple 'cheeser' was used to separate curds from whey.

Curds are a by-product of coagulating milk, a process also known as curdling. Coagulation happens when you add an acid, like lemon juice or vinegar, to dairy. The increase in acidity causes the milk proteins to tangle together into solid masses. This process will also occur naturally if you leave milk out to sour.

Coagulation is one of the first steps in cheese production. After the curds are formed, they're pressed and drained before different elements are introduced, depending on the type of cheese being made.

The liquid that is left over after the curds are drained is called whey.

Whey is used as a source of protein in a variety of food products.

Curds in its simplest form is cottage cheese. In Scotland, the most common fresh soft cheese was 'crowdie'. It was made by allowing milk to sour naturally before heating it until curdled.

9. Mesolithic bowl



(reproduction)

This very simple clay bowl was shaped and decorated by hand.

11. Mesolithic fish harpoon



(reproduction)

Bone harpoons like this one would be mounted on to a wooden shaft and used to spear fish.

Cordage had to be made to attach the harpoon to the shaft. Sometimes animal sinew was used.

CAUTION, SHARP EDGES

13. Iron Age wooden pot with animal hide lid



(reproduction)

As with number 12, this was another solution to the necessity for storage of food and other essential items.

Nowadays, we throw away plastic containers such as yoghurt pots which are still in perfect condition. In ancient times, these would have been reused indefinitely!

10. Mesolithic flint and antler sickle



A sickle is a tool for cutting through vegetation.

Plant material would be harvested for food as well as other purposes such as obtaining material for cordage.

CAUTION, SHARP EDGES

12. Bronze Age birch bark pot



(reproduction)

Birch bark was used to make useful containers like this one.

14. Horn beaker, medieval – 18th century



(reproduction)

Horn was a useful material which could easily be carved (see also number 15).

It could be said that it was used as plastic is today. There is a horn cup which you can see in Dunollie Museum.

15. Horn spoon, medieval – 18th century



Horn was used as a material for cups, bowls, spoons and many other items for centuries.

It was easy to carve into various shapes.

(reproduction)

16. Wooden trencher, 16th – 19th century



(reproduction)

The word 'trencher' comes from the earlier medieval use of the word, which meant a thick slice of bread which food was served onto.

By the 16th century, bread trenchers were being replaced by these carved wooden serving platters, which had a hollow for food and a small hollow for salt. Wooden trenchers remained in use into the 19th century alongside pottery plates.

17. Leather jack, 13th – 17th century



Leather drinking vessels like these were common all over Northern Europe, including Scotland, in this time period.

King Charles II owned one with a silver rim – these were not only for the poor. Ale was often

served in 'bombards', large leather jugs. Leather vessels were coated with 'pitch', a kind of tar, on the inside to make them waterproof.

(reproduction)

18. Pewter jug, 16th – 17th century



Antique pewter contains lead which is poisonous. However, people were unaware of this centuries ago, and pewter was a very common material for plates and bowls.

It is particularly hazardous when in contact with acidic foods such as tomatoes or fruit. Pewter is an alloy of several different metals including tin, zinc, lead and sometimes silver. It has been in use since 1500 BC and was popular with the Romans. Modern pewter does not contain lead any more, so it is safe.

(reproduction, non-lead)

19. 17th-century knife and pricker with bone handles



Bone was also used as an inexpensive, readily available and easy to work with material.

This cutlery set is a forerunner of our modern knife and fork. Originally a 'pricker' was a single spike, then it became

a two-pronged fork, and by the late 18th century forks became three-pronged, across the Western world.

(reproduction)

20. Knife and fork rests, late 19th – early 20th century (authentic)



Cutlery rests like these were in use from the late 18th century through to the mid 20th century.

They were often made of silver,

but could also be made of steel, glass or porcelain. In wealthier households, tablecloths were often white fine linen, and these cutlery rests meant a used knife and fork could be laid down without staining the tablecloth. Once commonplace, these useful table items have completely disappeared from use.

21. Spoon and pusher set, 1930s – 1950s (authentic)



Small, ergonomic cutlery sets, like this sweet example, were typically given to toddlers in the mid 20th century, often as a gift when a child was born.

They were specially designed to be used by little hands, and a child could push food onto the odd, egg-shaped spoon, and easily feed themselves.

22. Chopsticks (modern)



Chopsticks are the traditional eating implements of East Asia.

They have been in use for over 5,000 years. These are typical Chinese chopsticks. Japanese chopsticks have pointed ends.

23. Sugarloaf cutters, late 18th/early 19th century (authentic)



These sugar cutters or 'nippers' look quite scary, but they are just a tool for breaking off pieces of sugar from a sugarloaf.

24. Sugarloaf, 17th – early 19th century



Sugar was moulded into these conical 'loaves' for sale. Sugarloaves are integrally linked to one of the most horrific episodes in human history – the transatlantic slave trade.

Huge numbers of West African people were brutally kidnapped and sold into enslavement in the most appalling conditions imaginable – many died. Sugar was grown and processed in Caribbean

islands; highly dangerous work. The average life expectancy for an enslaved person there was 2/3 years.

The spiralling demand for sugar for Europe and America drove this industry. In the 1830s, the British abolitionist movement boycotted sugar.

(reproduction) ***NOT EDIBLE***

25. Flaxseeds, fibre, unbleached linen thread and woven sample



Some commonly grown seed crops were not for human food, but still of vital importance. This is most true of the flax, or linseed.

Linseeds were fed to horses to keep them healthy; horses were used for all kind of agricultural work and transport for centuries before tractors and machinery came into use in the 20th century.

Linseed oil was used for many purposes including conditioning wood and as a base for paint.

Linen was grown from flaxseeds, and the plant fibre processed into linen, a very slow and laborious process. Flax was cultivated in Argyll, particularly the Isle of Lismore. There is a linen spinning wheel in the collections at Dunollie. For many centuries in Scotland, everyone wore linen clothing, rich and poor alike. It was universal for men's shirts and women's underdresses (known as shifts). Other choices were wool, and silk for the wealthy.

During the 18th and 19th centuries, 90% of Scottish linen was a very cheap coarse cloth called 'osnaburg', sold to America and the Caribbean to clothe enslaved people. It was so rough that Booker T. Washington, who was born into slavery in 1856, compared it to, "A hundred pinpoints in contact with the flesh".

By the mid 19th century, linen was largely replaced by cotton, purchased from the American South, where enslaved labour was used until the abolition of slavery in America in 1863. Cotton was then processed in huge mills in Britain which sprang up during the Industrial Revolution – working conditions were atrocious and included child labour. Nowadays, synthetic clothing causes many problems including environmental damage and exploitative working conditions in countries in the Global South which supply demand from the West.

Linen was also used to make sails. The huge colonial expansion of the 17th – 19th centuries was powered by these linen sails.

26. Sea beans



Some seeds did not serve any practical purpose but nevertheless had a place in Scottish cultural life.

Sea beans, also known as drift seeds or Molucca beans, were, and still are, found on Scottish beaches, having been swept across the Atlantic Ocean from the Caribbean. They are actually tree nuts.

In the past, the origin of the beans was not known, and they were believed to have magical properties. They were made into charms, sometimes set in silver. They were particularly popular as a charm for safe childbirth – a birthing woman would be given a sea bean to hold in her hand.

EXAMPLE ACTIVITIES

Using the quern to grind oatmeal: learning topic about diet in ancient Scotland.

Links with quern use through history and in other parts of the world, including today. What happens to the grain when it is milled by the quern? Why does it need to be milled? What forces are involved in the action (e.g. torque)?

Bannock making, along with learning about other types of flatbread from various cultures.

The tools required for bannock making are the iron griddle and bannock spade.

Mortar and pestle, try using it to grind up a variety of materials.

STEM link as to how different materials change and why, after being processed this way (e.g. turning to a wet pulp, or to powder). Materials could include herbs, barley, or chalk. How mortar and pestles have been used worldwide through the ages, and still used today, as a food/medicine processing tool.

The tattie masher, first of all – guess what the object is.

Like the mortar and pestle, the tattie masher changes the potato by breaking it up and releasing starch. How does this masher differ from those of today? What other tools do we use for processing food? It's important to remember that up until the mid 20th century, all domestic tasks were done without electrical appliances. Think of modern appliances we have today and consider how the tasks they perform were carried out in the past, including in other cultures.

20th-century jar butter churn, and cream maker.

There is a STEM link on how applied forces can change a substance at molecular level, e.g. emulsification. The cream maker does the exact reverse of the butter churn, as the fat molecules are forced back into the milk to make cream. Scan the QR code for instructions on how to make butter using the shaking method with double cream and lidded jars. The results should be edible!

Credit: The Butter Museum.



The Mesolithic/Stone Age bowl.

Try making and decorating Stone Age-type bowls from self-drying modelling clay.

The antler sickle and bone fish harpoon.

These crude tools were used to obtain food by Stone Age people. What would you consider to be an absolute necessity for survival in ancient times? (E.g. a cutting blade, cordage, fire making.)

Cordage needed to be made. Along with containers and cutting blades, cordage was vital for survival in ancient times, e.g. for tying a bone harpoon like this or a flint blade to a haft, or for fishing line. Scan the QR code to view instructions on how to make cordage from plant material.





Horn beaker, pewter jug, leather jack.

Look at different containers for liquids and drinks in human civilisations – why are these so vital? What else would you consider to be an absolute necessity? From early people to the present day. Pros and cons of different types – are there any drawbacks to what we use today? (Single-use plastics and other throwaway containers.)

The pewter jug.

What is an alloy? Explore other metal alloys from history, which marked important technological advances e.g. bronze. What are common uses for alloys, e.g. coins, industry?

Wooden trencher, horn spoon, knife and pricker, spoon and pusher, chopsticks.

These objects can provoke a discussion on different ways of consuming food in different cultures and time periods. Eating from a single dinner plate with knife and fork is the norm in the Western world, but there are and have been many other ways, e.g. eating with the right hand, chapattis, chopsticks, using bread or large leaves as a plate or bowl. Why not design a novel way to eat your food!

Knife and fork rests.

Provoke a discussion about objects which were once common and have now disappeared for good. What items are in common use today which might disappear in the future and why? What useful new items might be invented?

Sugarloaf cutters.

Ask pupils to guess what these are. They look quite scary but are just for snipping little pieces of sugar from a sugarloaf. Try using them to pick things up! (Please do not try to cut the model sugarloaf as this will damage it.) The sugarloaf can be a focus on the topic of slavery which could include the sugar boycott by abolitionists in the early 19th century.

Also can be a starting point for a discussion on sugar in our diets. What foods contain sugar? Could you manage without it?

Flaxseeds, fibre, unbleached linen thread and woven sample.

These items could provoke project or artworks based around the histories and uses of linen in Scottish history.

Sea bean

Think about the journey that a Molucca bean might have made from Jamaica to Scotland and write its story, including the people who see it, and how it ends up being made into a lucky charm in the Highlands.