



Archaeology 101

Resource Pack for YAC Volunteers



This pack contains resources created by YAC HQ to form a 'back to basics' training session on archaeology for YAC branch leaders, assistants or Young Leaders who would like improve their overall knowledge of archaeology and be better equipped to deliver activities and answer questions from YAC members. The resource is in two parts -

1) A recorded presentation designed to improve YAC leaders' knowledge of archaeology. YAC leaders may wish to use this presentation as part of an induction for new YAC branch assistants and Young Leaders.

A recording of this training session can be viewed via the following link:

<https://youtu.be/CQxJl2euLQg>

[Click here](#) to download the slides from the presentation.

[Click here](#) to download a copy of the transcript from the recording.

2) Guidance on how to run an introductory session on archaeology for YAC members. We have provided resources mentioned in the training on the following pages. We also have an editable PowerPoint which you can use for an Archaeology 101 YAC session for your members.

A recording of the training session can be viewed via the following link:

<https://youtu.be/TirNPgOtM28>

[Click here](#) to download the editable PowerPoint presentation.

[Click here](#) to download a copy of the transcript from the recording.

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Notes for delivering an 'Archaeology 101' session for YAC members

YAC leaders may wish to use this presentation as part of a YAC session introducing young people to archaeology. The notes on the following pages can be used alongside the slideshow.

Slides 2-16

Our *True/False* quiz is designed to get YAC members thinking about common myths in archaeology. The quiz can be delivered as part of the PowerPoint presentation to all members, or the slides can be printed off as cards and given to members in small groups to discuss. The answers are as follows, but you may wish to add to these!

1. *Archaeology is all about digging* - false
2. *Archaeologists are mainly looking for objects made from precious metals* - false
3. *Archaeology is about the time before humans* - false
4. *Archaeologists are only interested in objects larger than 1cm* - false
5. *Some materials do not survive underground* - true
6. *Some archaeologists study old buildings that do not need to be excavated* - true
7. *Archaeologists can always tell the date of their finds* - false



Slide 17

What is archaeology? Archaeology is the study of physical remains of the past. Material remains and physical traces left behind by people are key to helping us understand places and the people who lived there. This means we can make connections to the world around us and think about what it means to be human.

There are lots of reasons why we do archaeology...

- **To learn about how people lived in the past.** It is exciting and interesting to find out about people who lived before us - what they did, where they lived, what they ate, the jobs and activities they did, what they wore, what they believed and much more. Archaeologists are interested in everyone - not just the rich, important and powerful people who dominate historical records. Archaeology can tell us about people who may not have had any power and who people did not write about.



- **To understand how places have changed over time.** We can learn about how our towns and cities developed from early settlements. We can see how people impacted on the natural environment around them and how buildings and people's work changed the landscape.



- **To plan for the future.** Archaeology gives us a long-term perspective and reminds us that big changes took place in the past and that more big changes will likely come in the future. Archaeology can show us what worked well in the past and also what did not work so well for people which can help us think about how to avoid past mistakes in the future.
- **To save pieces of history which might otherwise be lost.** Building and construction work can risk damaging artefacts and remains underground, whereas archaeology can safely recover fascinating remains.



- **To support museums and heritage sites.** Objects from archaeological excavations form part of museum collections. Museums are an amazing way for people to learn about different places and themes and are educational and fun. Archaeologists also work to protect old buildings and building remains from damage so people can enjoy them in years to come as public visitor attractions.

Slide 18

We have established that there's a lot more to archaeology than just digging, but how is archaeology actually done? What methods do archaeologists use?

Non-invasive archaeology is archaeological investigations that do not actually break the ground or disturb any physical remains underground. Sometimes it's best for the sites and associated artefacts to remain safely in the ground. Excavation is a destructive process, and it opens the sites and artefacts up to being damaged or destroyed by the environment.

There are several non-invasive techniques that allow archaeologists to see what is underground without digging. Those techniques include...

- **Buildings survey** - studying upstanding buildings in the landscape or in urban settings. We use different techniques to measure and record buildings.
- **Field walking** - this is walking across recently ploughed fields to collect and record pieces of pottery, flint or other artefacts that have been brought to the surface. It is vital to be able to see the ground surface clearly for an accurate evaluation, and these surveys are best carried out after rain. The aim is to identify areas of archaeological activity and record them accurately to notice concentrations of particular objects.





- **Landscape survey** - this is when we go out into the landscape to look for natural and human made changes to the landscape. We're looking for lumps and bumps in the landscape that might have been caused by past human activity, such as quarrying, building or farming. We record these on maps and take precise measurements using instruments that measure distance and height. In the photograph some archaeologists are doing a landscape survey of Halkyn Mountain in North Wales which was a mining landscape with lots of features from mining activity.



Slide 19

- **Aerial photography** – taking images from above in order to reveal lumps and bumps in the landscape and soil patterns that could indicate the presence of a site or settlement. In the photo we can see aerial photography revealing shapes called cropmarks. Cropmarks occur where there are archaeological features, such as walls and ditches, underneath where a crop is growing. Crops will grow at different rates depending on these features (mainly due to water content). The result is a birds-eye view of the layout of features across a site.
- **Geophysical survey** – We use geophysical tools like ground-penetrating radar, magnetometers and resistance meters to scan the soil and create digital maps. The person in the photo is using a magnetometer which measures variations in the Earth's magnetic field and can detect buried features or even metal objects. The image on the right has been created with another type of geophysical survey, Ground Penetrating Radar (GPR), which sends radar pulses deep underground and creates a 3D image of buried features. This GPR survey was done near Chester Cathedral. If you look closely can you see a ladder-shaped feature? Those are buried remains of Roman barrack blocks, where the Roman soldiers in the Roman fort at Chester were living.

Slide 20

Excavation is when a site is carefully dug (usually by hand) and recorded along with the finds it contains to build up a picture of a site and its people. Excavation is often the last step in archaeological research. Because digging disturbs the ground, we only excavate when there's a clear reason and we record everything carefully.



Here are some different types of excavation...



- **Test pitting** - this is when we dig a small trench, usually 1m x 1m, to get an idea of what the site might contain. This photo shows a test pit in someone's garden in Bromborough where lots of medieval finds were discovered.
- **Trial trenching** - once we have established that a site holds potential archaeology a larger trial trench is sometimes dug. The photo shows a large trial trench, are 20m long.

- **Open area excavation** - this is an opportunity to look at a wider area and excavate in more of a measured way, often splitting the site into quadrants and carefully recording everything. The photo shows an excavation at Bamburgh Castle where archaeologists found a 10th-century metal working building.

Slide 21

Post-excavation is the activities which take place after excavation.
Post-excavation activities include...

- **Finds processing** - all finds from a dig often need to be cleaned, measured, weighed, packaged and carefully labeled to prepare them to go off for specialist analysis and reporting. In the photo we can see some finds-washing in process.
- **Conservation** - this an activity that usually take place in a lab to stop artefacts deteriorating and to keep them stable. Conservation activities include carefully scraping corrosion (rust) off metal objects (as shown in the photo of a copper object), preserving wooden objects in a special chemical solution to stop them rotting, and reconstructing broken objects.
- **Reporting** - it's important that archaeological discoveries are written up quickly and accurately to help plan what will happen on the site next and to help researchers.





Slides 22-24

These three slides give some examples of different types of archaeology, but they are not an exhaustive list. You may wish to add to this list to reflect your YAC leader team's expertise. You could also replace the photos with images reflecting your area's local archaeology. To challenge your YAC members, you could hide the definitions of the types of archaeology and have your members guess the job from the image.

Slide 25

It can be difficult to establish a precise date of archaeological finds but this slide gives 4 common methods:



Dendrochronology - this is the study of tree rings to work out the date of wooden finds. Trees grow by new cells multiplying near the bark, forming a ring. A tree's growth rate changes in a predictable pattern throughout the year in response to seasonal climate changes, resulting in visible growth rings. Archaeologists create a database by building a chronology for an area spanning thousands of years so that when an ancient timber is found you can look for a match on the sequence to date it.

Coins - if a coin is found near a feature or deposit, it can give us the earliest possible date of nearby finds. Modern coins have dates on them, but before dates were put on coins they usually had the name or the face of a ruler or another symbol that can clearly tell us when they were made. However we need to remember that if multiple coins are found we can only use the newest coin for dating.



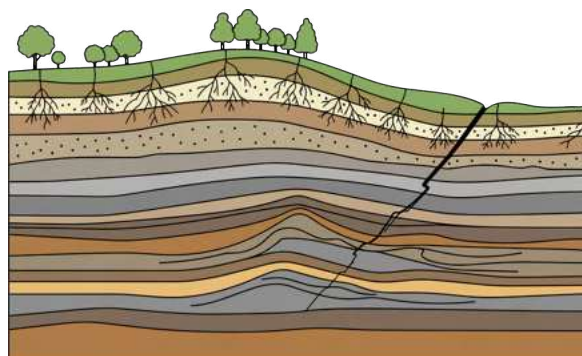
Artefact dating - Looking at different styles of finds can give an approximate date of a feature or deposit, for example pottery types changed over time so make good diagnostic finds. Art styles on artefacts such as jewellery and decorative objects can also help pin an approximate date range.

Scientific methods of dating - the most common is radiocarbon 14 dating. C14 dating is based on the fact that living organisms—like trees, plants, people, and animals—absorb carbon-14 into their tissue. When they die, the carbon-14 starts to change into other atoms over time. Scientists can estimate how long the organism has been dead by counting the remaining carbon-14 atoms.



Slide 26

An important concept to understand in excavation is **stratigraphy**. The layers of human activity underground are called strata and stratigraphy is the study of these layers. Generally speaking, the further down we dig the older the stuff we find. Stratigraphy is therefore really useful for dating sites. However people in the past sometimes had to dig underground, such as when burying their rubbish or digging a foundation for a building. This means that sometimes strata are not always easy to identify. Let's look at an example...



Slide 27

This is an example of some excellently preserved stratigraphy in York, during one of York Archaeology's excavations. The numbers on the diagram correlate with specific features. The site was a Roman building that was continually used throughout the Roman period. One theory is that this site contained a kiln for firing pottery, as shown by the clay affected by heat and the fact that people had been raking ash across the floor.

Slide 28

The following slides list some common types of finds and materials found in excavation. Before showing these you could ask your members to spend some time discussing what they think are the most common types of objects found by archaeologists and which materials survive and which might not survive. You may wish to add to these with other common types of finds such as glass, textiles, wood or mortar and include examples from your area or a local museum collection.

Slide 29



Pottery - one of the most common types of finds from excavation are pottery sherds. The techniques and types of ceramics changed over time so being able to identify some common types is a useful window into that time period. The following pottery types are shown on this slide:

- Bronze Age/Iron Age – hand-shaped rather than wheel-thrown, slightly soft and coarse-textured, often very small fragments.
- Imported Roman Samian ware - a fancy table-ware imported from Gaul, made in molds to give detailed decorations and then coated with a glossy red slip.
- Roman local wares include such as black burnished ware (pictured) with variations across Roman Britain.
- Roman mortaria is a type of dish used like a pestle and mortar to make pastes and sauces by crushing ingredients against gritty inclusions (usually stone or shell) baked into the clay.



- Early medieval pottery types – usually brown or grey and occasionally yellow-glazed, often with a slightly soft texture and in the form of jugs and small bowls. The example pictured is called 'shelly ware' as the pottery fabric was tempered with shells crushed into small pieces.
- Later medieval – in this period pottery often took the form of large jugs with small circular spouts with curved handles. These were made on mass and often coated with a thin layer of coloured glaze. Green-glazed pottery was especially popular and was made by mixing copper or lead into the glaze.
- Post-medieval – coal-fired kilns made for thinner and harder types like Cistercian ware (pictured) with darker glazes.
- Modern – pottery is easily identifiable as modern because it has a much harder fabric and smooth glaze. Often had colourful transfer prints such as willow pattern designs.



For a more detailed guide to pottery identification, we recommend this Dig School resource:
<https://digschool.org.uk/wp-content/uploads/2020/06/Pottery-Identification-Guide-DigSchool.pdf>

Slide 30



Building materials (stone and ceramic) - the earliest bricks in Britain were made by the Romans and these took a variety of forms, such as bricks for building, roof and floor tiles and specially designed hypocaust tiles (pictured) for heating systems. The small square stones pictured are tesserae and were used as mosaic tiles, arranged into complex patterns to form fancy floor designs.

Roman ceramic building material was reused in the early medieval period but bricks were not produced again until later in the middle ages. Common medieval ceramics include floor tiles and roof tiles, such as the one in the picture. You can see a small square hole where the peg would go, but the most eye-catching feature of this tile is the paw print. Finding animal prints in tiles is common because before firing tiles were laid out on the ground to dry out before being fired in a kiln, giving an opportunity for various animals (and sometimes people!) to walk across them and leave their mark.





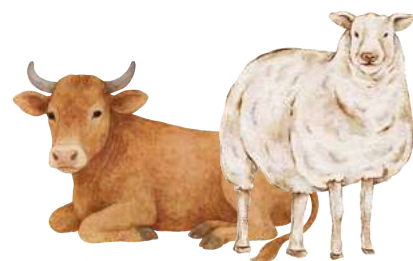
Modern bricks can be identified as modern rather than medieval or Roman because they have a harder texture due to being fired at a higher temperature. They are also a darker red colour than medieval or Roman bricks because more iron is used in the manufacture process. The tile pictured is a 19th-century tile used to create a garden border, and helpfully has the company name stamped into it.

For a detailed guide to ceramic building materials this guide from York Archaeology provides an excellent summary to different types of ceramics and how they changed over time:

<https://research.yorkarchaeology.co.uk/wp-content/uploads/2023/08/AGuidetoCeramicBuildingMaterials-JMMcComish.pdf>

Slide 31

Animal bones especially farm animals like cows and sheep, are common finds across all archaeological periods as people have always slaughtered animals for meat. Finding animal bones can tell us what people in the past were eating and how they were using animals.



Sometimes bones were cracked open to extract the marrow, and it's common to find butchery marks on the bones. Not all animal bones were discarded - bones could be used for crafting objects like pins, needles, buttons, dice and counters. The photos on the left of the slide show a mix of cow, pig and sheep bones plus three small fish vertebrae.

Slide 32



Other common organic finds such as antler, horn core and shells are also associated with animal butchery. Antlers are stronger than bone and were therefore used for carving small delicate objects such as needles and pins. Horn core on the other hand is the hardened tissue from inside a cow, sheep or goat horn that survives whilst the outside of the horn (made of keratin) usually rots away. Shellfish was a common part of people's diet from prehistory to the modern period and the shells of oysters for example (pictured) provide evidence for this.

Slide 33

Metal objects - a common metallic find is iron slag, which is the waste product from metalworking. Finding iron slag can indicate that a site was used for metalworking. Objects made from iron (such as the medieval arrowhead photographed after conservation) are often heavily oxidised when first uncovered. The copper object photographed is a medieval belt buckle.



Slide 34

Stone was one of the main materials for tools during the Stone and Bronze Ages. Flint was used in particular because it can be knapped into flakes with sharp edges, ideal for knives, scrapers and arrow heads. We often find groups of flint flakes called debitage which indicate where someone was once flint-knapping. Prehistoric stone is not to be confused gun flints, which were used in flintlock between the 16th and 19th centuries.



Other types of stone have been used from prehistory onwards for everyday objects such as grindstones (pictured) for blacksmithing, quern stones for crushing grains into flour, spindle whorls for spinning fibres and whetstones (pictured) for sharpening knives and tools.

A more valuable type of stone was jet which is a lightweight organic fossil. It was used from prehistory to the modern period for jewellery due to its shiny black surface. The jet artefact photographed is a medieval crucifix found in excavations at Bamburgh Castle in Northumberland.

Slides 35-36

The timeline over these two slides highlights key periods in British archaeology. Archaeology in the UK is generally divided into 5 periods: prehistory, Roman, medieval, post-medieval and modern.

On this timeline we have included the divisions of prehistory into the Stone Age, Bronze Age and Iron Age, as well as the division of the Stone Age into the Paleolithic ('old stone age'), Mesolithic ('middle stone age', characterised by the ending of the Ice Age and changes to tool types as result of different food availability) and the Neolithic ('new stone age', characterised by the introduction of farming).

Before showing your YAC members these timeline slides, you may wish to run the timeline activity detailed on the next page.



Timeline cards

Activity: match the time period labels to the images and arrange them in chronological order.

Paleolithic
(‘old stone age’)

Mesolithic
(‘middle stone age’)

Neolithic
(‘new stone age’)

Bronze Age

Iron Age

Roman

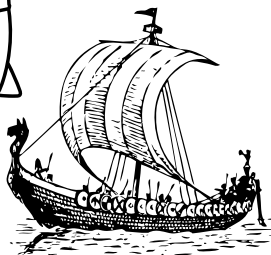
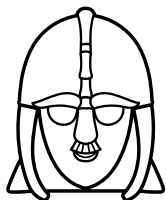
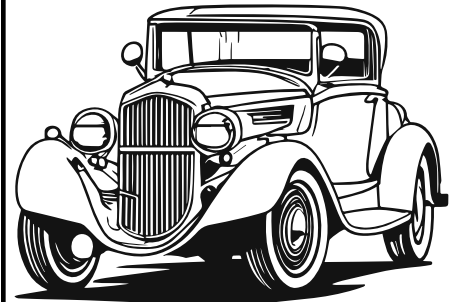
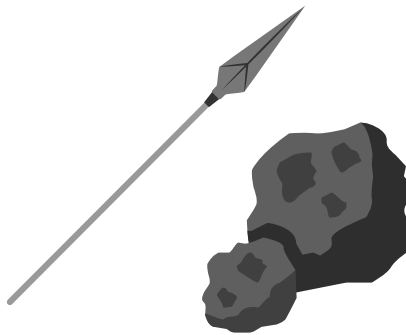
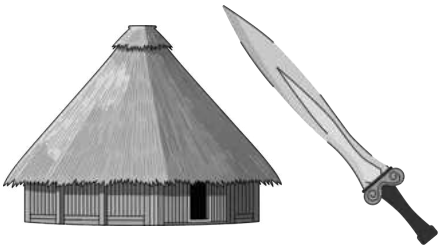
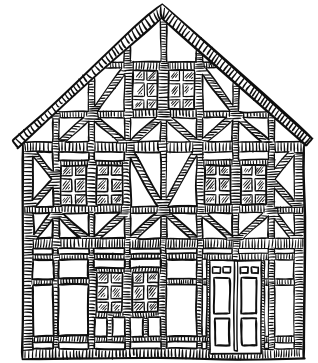
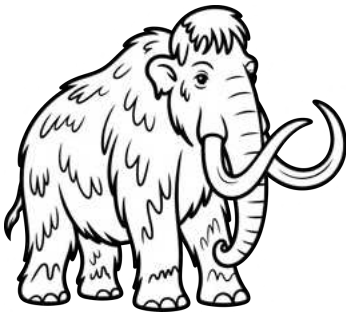
Early medieval
(Anglo-Saxon/Viking)

Norman and
Plantagenet

Tudor and Stuart

Georgian and
Victorian

20th century to
present day





Recommended Activities

To support your YAC session you might wish to interweave additional activities or run a follow-up session, so we have made some recommendations below. Others can be used as add on activities for older members.

Artefacts and Artefact Care

We have created a basic artefact recording form (see below), which you can use with your branches to record different artefact types. You can use modern, everyday objects or archaeological artefacts if you have access to them.

Drawing and photographing different types of objects

Artefact conservation: guess the artefact

Artefact Conservation: guess the artefact

Archaeological Methods

Make a stratigraphy jar

Stratigraphy cake

Grow your own cropmarks

Archaeological iSpy

Below, you will find a worksheet to create your own version of Archaeological iSpy. You may wish to run this at your next session as an outing. Alternatively, you can use one we prepared earlier!!

Archaeological iSpy.



Have you delivered any more successful 'Archaeology 101' activities to your YAC groups? We'd love to hear from you! Get in touch with the YAC HQ team at yac@yac-uk.org.



Name of young archaeologist:

Drawing or photograph of object:

Length:

Height:

Depth:

Material:

Stone

☐

Glass

☐

Ceramic

☐

Metal

☐

Bone

☐

Other

☐

Shell

☐

.....

Period:

☐

Prehistory, <43CE

☐

Roman, 43 - 410

☐

Medieval, 410 - 1500

☐

Post-medieval, 1500 - present

Further dating information:

Interesting features:

What was this object used for?



Archaeological iSpy

Archaeology is all about observation and discovering interesting things from the past on all sorts of different scales. A tiny prehistoric worked flint is archaeology but so is a huge industrial building. Our archaeological iSpy challenges your YAC members to get out and about and spot archaeology!



On this page we have listed some examples of objects, sites, buildings and features that can be used to help you discover archaeology wherever you live. Take inspiration from the prompts below to create your own iSpy trail to designed with your own local area in mind to use on short walking field trip in your local area. You could encourage your YAC members to take photographs or sketch things they see that help discover local history and archaeology.

**Disused
industrial
building**

**War
memorial**

**Blue
plaque**

**Gravestone
that predates
1800**

**Stained
glass
window**

**Archaeologists
working**

Milestone

**Medieval
ruins**

**Half-
timbered
building**

Pier

Mosaic floor

Clock tower