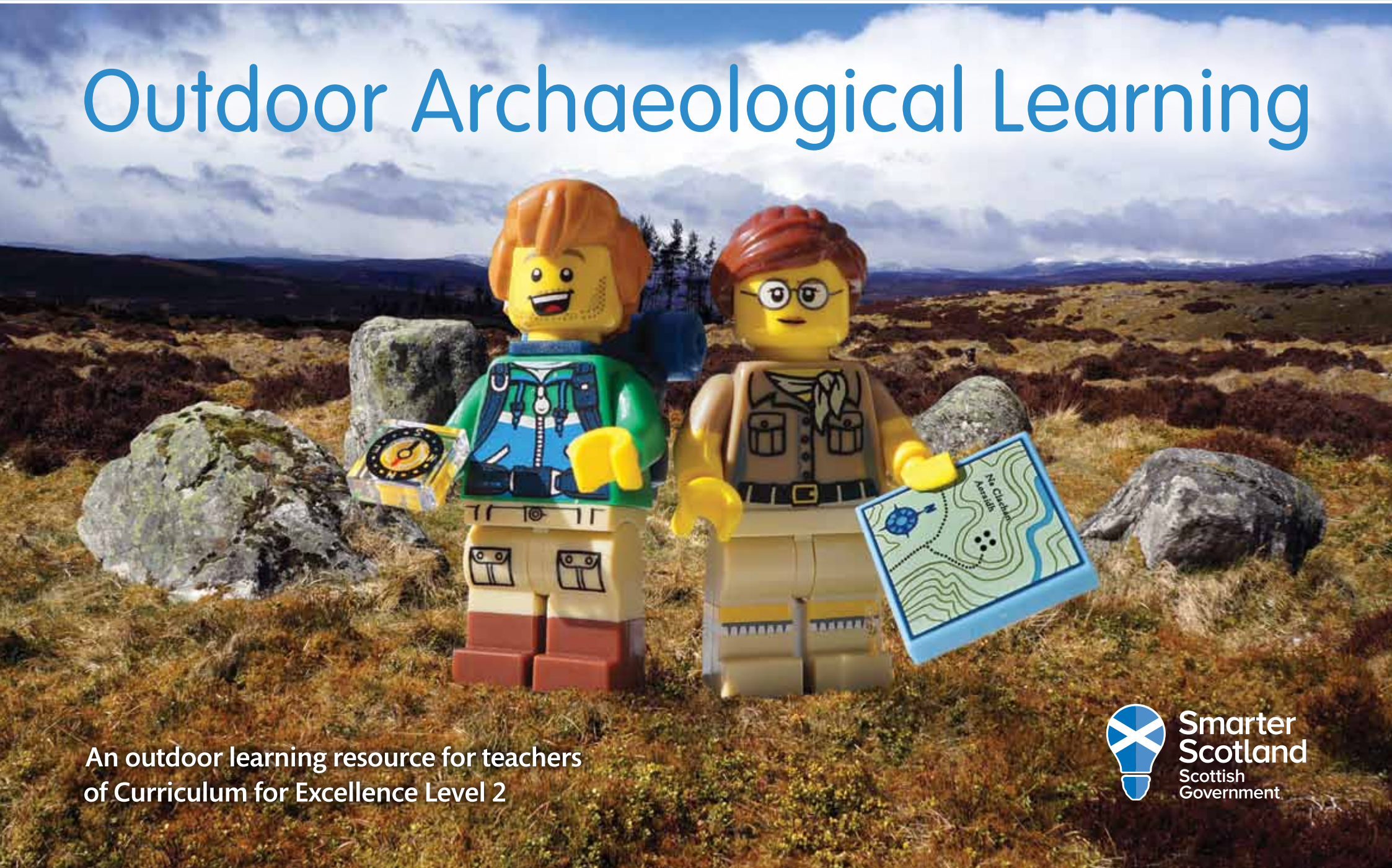
Forestry Commission Scotland
Coimisean na Coilltearachd Alba

Outdoor Archaeological Learning

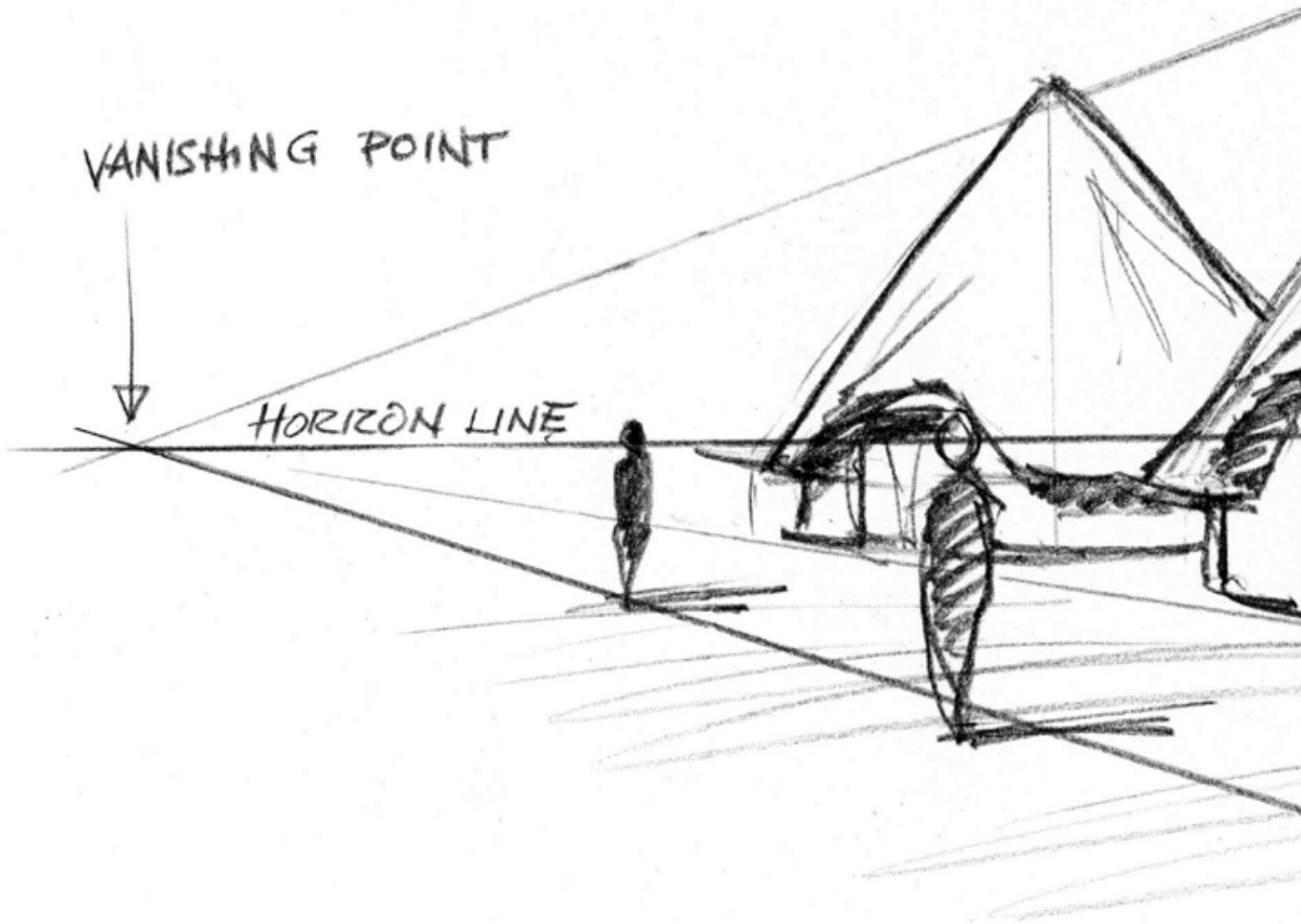


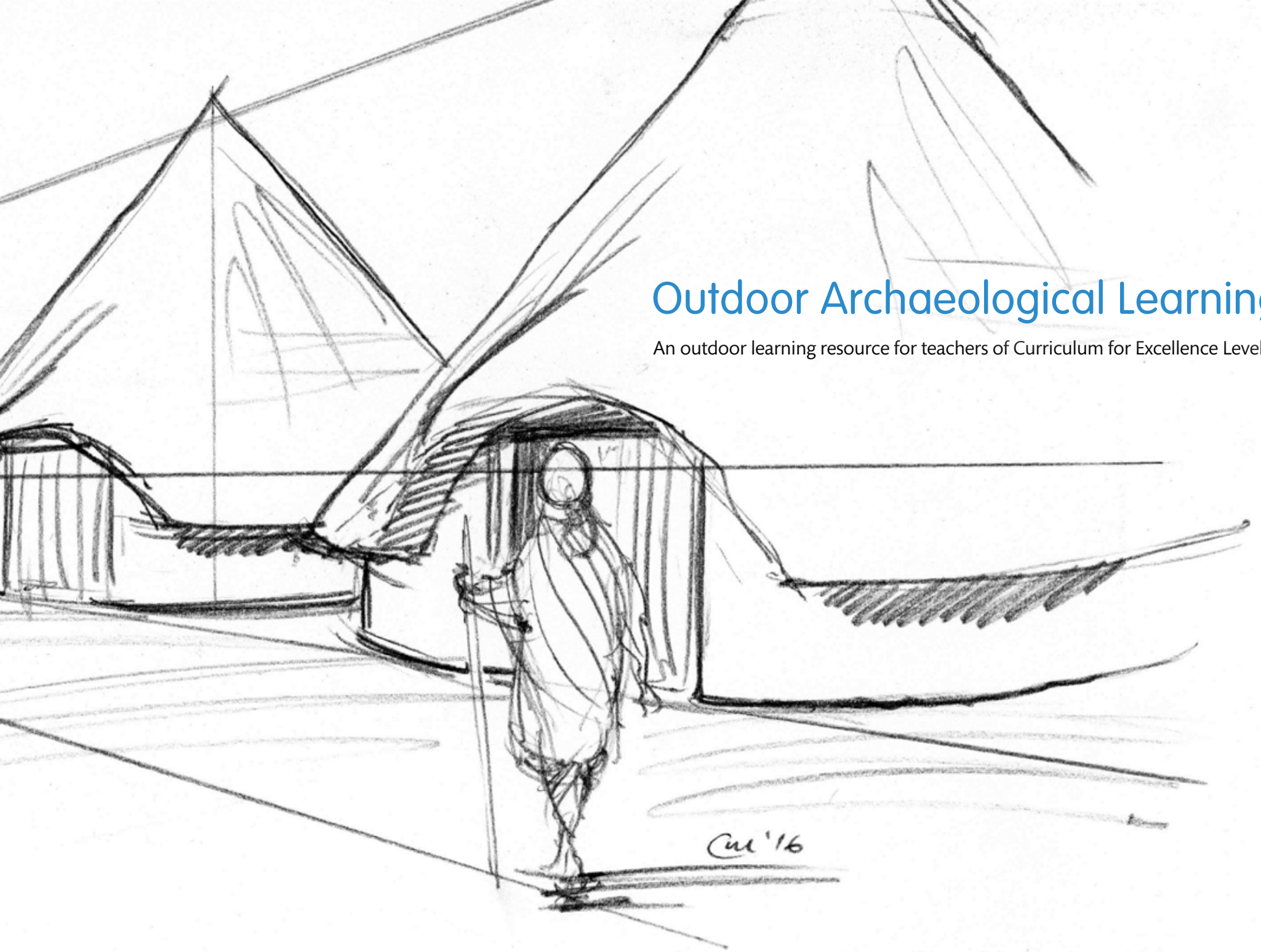
An outdoor learning resource for teachers of Curriculum for Excellence Level 2

Smarter Scotland
Scottish Government

Archaeology has so much potential in the classroom, blending indoor and outdoor learning, enabling a meaningful sense of place and informing social responsibility. By exploring the evidence that our shared past has left in our culture and environment, outdoor archaeological learning can help develop critical thinking skills, inspire creativity and encourage discussion and teamwork.

SCOTLAND'S
ARCHAEOLOGY STRATEGY





Outdoor Archaeological Learning

An outdoor learning resource for teachers of Curriculum for Excellence Level 2

The power of place – a visit to an archaeological site can inspire discussion, learning, creativity and reflection.

Outdoor Archaeological Learning

Contents

1. Introduction

Scotland is rich in archaeological sites. Some are huge and visible from miles around, such as the fort of the Mither Tap on Bennachie. Others, such as our ancient and enigmatic cup-marked rocks, are more elusive. Some, such as the celebrated Neolithic village of Skara Brae, have visitor centres and years of research, but many others remain unheralded and mysterious.

But what of the science of archaeology itself? Archaeology can help develop critical thinking skills via place-based learning experiences, exploring the evidence that our shared past has left in our culture and environment. The methodology of archaeology requires the objective study of material culture alongside its subjective interpretation.

Archaeologists study the past from the earliest times up to the modern period. They look for clues that can help to explain the lives of people long ago – how they lived, what their culture and environment was like. Archaeologists can piece together a picture of the past by finding everyday objects which people lost, discarded or buried. They look for evidence about past environments by studying long-preserved seeds, pollen and animal bones. They also study the remains of buildings and monuments such as standing stones, burial cairns, hut circles and hill forts – and they always keep an eye out for carved stones and other secret clues!

This resource combines a number of articles and activities to encourage **place-based learning** on the National Forest Estate and beyond. Through discovery, exploration and sharing, young people can engage with their past through a methodology rich in imagination, creativity and enquiry. The resource is intended for all those who might take groups of children to an archaeological site – teachers, youth group leaders and archaeological educators. It has been produced to help deliver **Scotland's Archaeology Strategy** and to support **Outdoor & Woodland Learning Scotland**.

The Iron Age fort of Caisteal Mac Tuathall

Artist Liz Myhill taking inspiration from the Bronze Age 'four poster' stone circle of Na Clachan Aoraidh in Perthshire. Ancient ceremonial sites can be used to explore the connection between landscape and horizon. Stone circles, stone rows and standing stones may have formed a link to the ever-changing celestial skyscape of sun, moon and stars, defining patterns in the night sky and on the horizon that confirmed and reaffirmed the changing of the seasons.

"Here site, scenery, megalithic remains and surroundings all combine to render the investigation of this group especially interesting"
(Coles 1908)

Using this resource

Outdoor archaeological learning can involve background research, on-site recording and archaeological observation and interpretation – even guiding or interviewing other visitors. Several of the activities in this resource can be combined into one project – such as the creation of an interpretative poster, undertaken either as a class or in small groups.

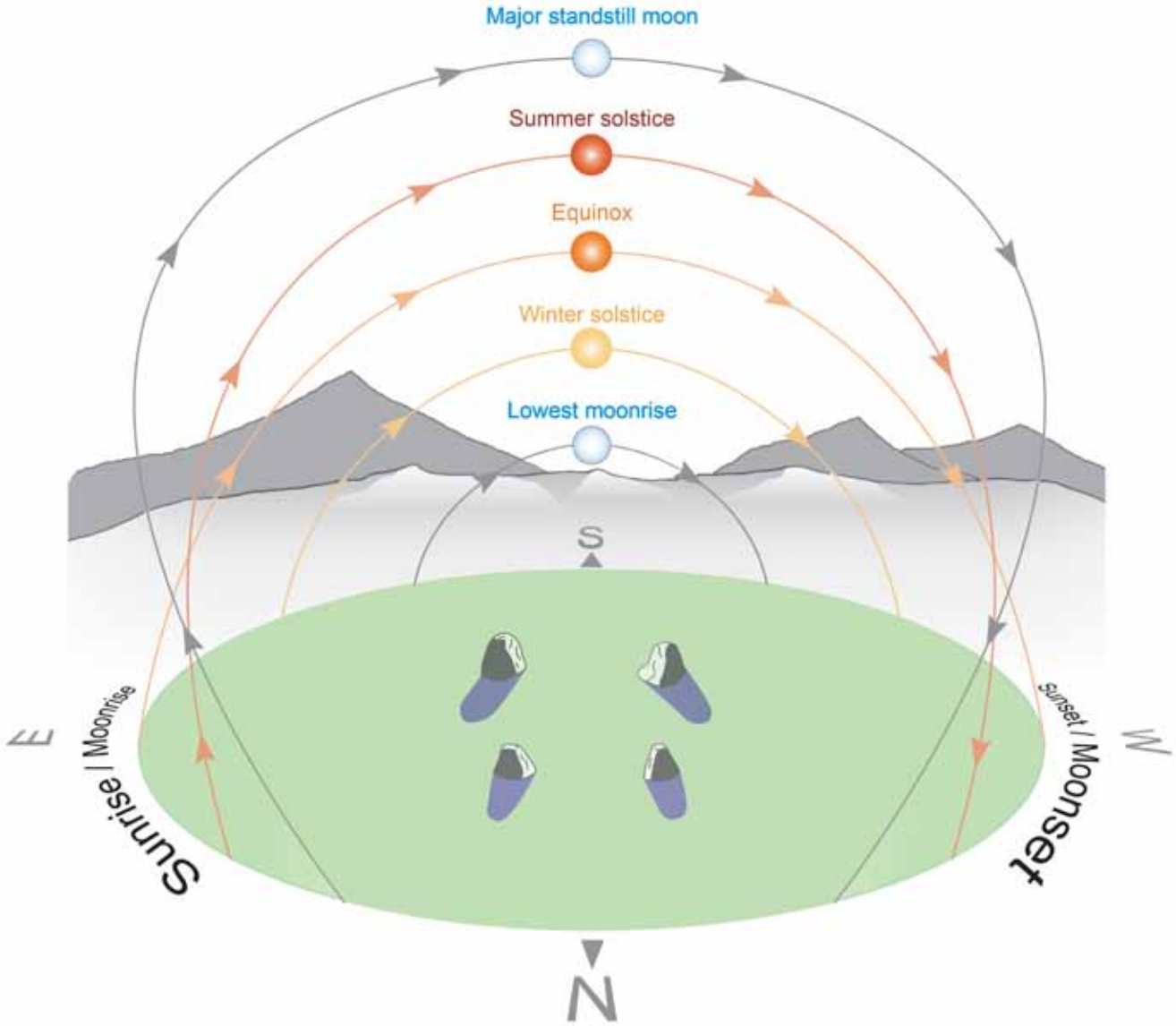
Preparatory research can help plan your visit to a local historic site and can involve modern maps and historic maps, online search tools, background reading and group discussion. Once on-site, tasks can include measuring the site, sketching it's dimensions and photographing it. Consideration can be given to its location within the landscape – is it hidden away or prominently positioned? Thinking about the processes of survival can also be useful – is the site a ruin or a reconstruction? Has the site been excavated and are there any archaeological artefacts associated with it?

Pupils can be inspired by the site to create a range of written texts. Writing can involve a factual description of the site itself, complete with archaeological observations (such as its location and setting, associated artefacts or objects, or its relationship with other sites or landmarks). It can also include background research, museum studies and historical context. Pupils can create imaginative and personal texts, such as poems, plays and short stories, personal experience and reflection, or the exploration of historical characters.

Children can discover scale and measurement through model making, while investigating early myths and legends can add colour to the past and inspire any number of different activities.

Creating archaeological reconstruction drawings can draw on all of the above, with themes and methods depending on research, knowledge and understanding. Working in teams to design and create an interpretive poster can be very productive, as the process of gathering and agreeing content can involve children with different skills or preferences.

But the most important thing of all is to encourage discussion both on-site and in the classroom. What is the site? Who built it and why? How has it survived? What will we record and how will we do it? What will we write about? What themes will we explore and why?



As the Earth spins on its axis, day becomes night around the globe depending upon what part of our planet is facing the sun. And because our planet's axis is tilted, as the Earth orbits the sun over the course of the year, the sun rises and sets at different places on the horizon. It also moves from very high in the sky at midday (at the summer solstice) to very low in the sky (at the winter solstice). Similarly, as the moon orbits the earth every lunar month, the plane of its orbit wobbles very slowly – and every 18.6 years it reaches its maximum. This is called the major standstill moon – over the course of just two weeks the course of the moon moves from its highest point in the sky to its lowest. The course of the moon changes from rising and setting from its northernmost points on the horizon (travelling higher in the sky than the sun) to rising and setting from its southernmost points on the horizon (travelling lower in the sky than the sun). Stone circles, stone rows and standing stones can be great places to explore the solar system and the idea of a celestial compass.

These schoolchildren are watching the solar eclipse in February 2015 at the Whitehills recumbent stone circle in Aberdeenshire. © FORESTRY COMMISSION SCOTLAND

Acknowledgements

This learning resource has been created by Kim Biddulph (4), Alan Braby (5 and *The Sorrow of Derdriu*), Graeme Cavers (*The Very Archaeological Cut Outs*), Fiona Davidson (3), Chris Elmer (12), Kate Fowler (13), Paul Hibberd (6), Gemma Hudson (*The Very Archaeological Cut Outs*), Ian Kirkwood (designer), Elspeth Mackay (2), Monika Maleszka-Ritchie (10), Mike Middleton (*Beowulf*), Chris Mitchell (5), Victoria Reid (11), Matt Ritchie (editor, 1, 4, 5, *The Sorrow of Derdriu*, 8 and *The Very Archaeological Cut Outs*) and Brian Wilkinson (4 and 9), with help and advice from Cara Jones, Susan Kruse, Bonnie Maggio, Dawn McLaren, Elspeth Molony, Liz Myhill, Chris Nixon, Kit Reid, Jeff Sanders, Tom Small, Douglas Speirs and David Strachan. Thanks also to AOC Archaeology, Archaeology Scotland, Dig It! 2017, Historic Environment Scotland and the Perth and Kinross Heritage Trust. And a big thanks to LEGO© for inspiring generations of children (and archaeologists) in thinking creatively!

2. Outdoor archaeological learning and the Curriculum for Excellence

It is recognised by **Education Scotland** that

'outdoor learning offers many opportunities for learners to deepen and contextualise their understanding within curriculum areas, and for linking learning across the curriculum in different contexts and at all levels'.

An appropriate archaeological site is simply a particularly rich setting for a particularly focussed type of outdoor learning.

A visit to a local archaeological or historic site:

- provides challenge;
- provokes enquiry and critical thinking;
- provides a real-world context for classroom learning;
- promotes confidence in pupils who find classroom-based learning challenging;
- promotes positive working relationships;
- promotes stewardship of the local area;
- promotes a greater appreciation of the environment; and
- promotes a healthy and active life-style.

Developing the four capacities

Outdoor Learning is a valuable tool in developing the four capacities of the Curriculum for Excellence:

Successful Learning

First-hand experiences and new learning environments help to motivate and inspire. A visit to a local archaeological or historic site can introduce new skills and help to reinforce learning across the curriculum, involving pupils in map work, research skills, survey and measuring, photography, imaginative artwork, creative writing and the use of IT and online resources.

Confident Individuals

Familiarity with and understanding of a local landscape or monument can inspire a sense of ownership in young people. Through understanding, young people can have the opportunity to share their learning with their peers and the wider community. Engagement with the local environment can provide the opportunity for young people to work with individuals and organisations in the wider community.

Responsible Citizens

Young people can be motivated to take an active role in the protection and promotion of sites of special interest in their community. Engagement with local sites can involve pupils in the preservation and interpretation of the site for the enjoyment of themselves and others. Young people can be 'champions' for local sites.

Effective Contributors

Pupils will have the opportunity to tell others about their local heritage. Young people can be encouraged to share what they know through a variety of media; for example talks, a guided tour, an exhibition.

Experiences and outcomes

The main focus with outdoor archaeological learning will generally be **Social studies: People, past events and societies**. The activities described in this resource are most suitable for pupils at Curriculum for Excellence Level 2 but may be adapted for those working at Level 1 or Level 3.

In engaging pupils in learning out of doors and conducting meaningful research within the classroom, archaeological learning can provide real and cohesive links across a range of curricular areas. For example, visiting a stone circle or standing stone and investigating and recording both the site and its landscape can be used to develop skills in relation to **Mathematics** and **Sciences**. Exploring the spiritual aspects of past societies and belief systems can support learning in **Religious and Moral Education**. Imaginative creative writing can help confirm learning and understanding and benefit both the **Expressive Arts** and **Literacy and English**. The process of exploring the site itself can contribute to outcomes in **Health and Wellbeing**.

Several of the activities in this resource are cross-referenced below with the most relevant experiences and outcomes from the curriculum.

Activity	Curricular area	Outcomes
A visit to a local archaeological or historic site	Social studies: People, past events and societies	*I can use primary and secondary sources selectively to research events in the past.* SOC 2-01a *I can interpret historical evidence from a range of periods to help to build a picture of Scotland's heritage and my sense of chronology.* SOC 2-02a
	Mathematics: Number, money and measure	*I can use the common units of measure, convert between related units of the metric system and carry out calculations when solving problems.* MNU 2-11b
Draw nearer: create your own archaeological reconstruction drawings	Social studies: People, past events and societies	*I can use primary and secondary sources selectively to research events in the past.* SOC 2-01a *I can interpret historical evidence from a range of periods to help to build a picture of Scotland's heritage and my sense of chronology.* SOC 2-02a
	Expressive arts: Art and design	*Through observing and recording from my experiences across the curriculum, I can create images and objects which show my awareness and recognition of detail.* EXA 2-04a
You are here: create your own place-based interpretive poster	Social studies: People, past events and societies	*I can use primary and secondary sources selectively to research events in the past.* SOC 2-01a *I can interpret historical evidence from a range of periods to help to build a picture of Scotland's heritage and my sense of chronology.* SOC 2-02a
	Expressive arts: Art and design	*I have the opportunity to choose and explore an extended range of media and technologies to create images and objects, comparing and combining them for specific tasks.* EXA 2-02a

Activity	Curricular area	Outcomes
Storylines: using myths and legends to bring sites to life	Literacy and English: Writing	*Having explored the elements which writers use in different genres, I can use what I learn to create stories, poems and plays with an interesting and appropriate structure, interesting characters and/or settings which come to life.* ENG 2-31a
Spot the difference: photography and re-photography	Social studies: People, past events and societies	*I can use primary and secondary sources selectively to research events in the past.* SOC 2-01a *I can interpret historical evidence from a range of periods to help to build a picture of Scotland's heritage and my sense of chronology.* SOC 2-02a *I can compare and contrast a society in the past with my own and contribute to a discussion of the similarities and differences.* SOC 2-04a
	Technologies: ICT to enhance learning	*I can create, capture and manipulate sounds, text and images to communicate experiences, ideas and information in creative and engaging ways.* TCH 1-04b / TCH 2-04b

Practical guidance

Some of the sites mentioned in the resource have quite challenging and limited access. Please familiarise yourself with your education department's outdoor learning guidelines and requirements before planning your trip. Always make a preparatory visit to the proposed site where possible. You should always find out who owns the land and obtain access permission if required.

Further guidance about all aspects of outdoor learning can be found at **www.educationscotland.gov.uk/outdoorlearning**.

3. Exploring place-based learning: an archaeological approach

For teachers and other group leaders

The benefits of place-based learning are widely recognised. They range from the opportunity to learn in context and providing a stimulating learning environment away from the classroom, to providing a stimulus for learners who may struggle to learn in a traditional classroom environment. Place-based learning can take many forms, from trails to tours, object handling to dressing in costume or simply self-led exploration of the various nooks and crannies of a site.

One of the most meaningful and in-depth forms of engagement is the use of an archaeological approach to provide a rich learning experience. At its simplest, using an archaeological approach is a practical way for learners to engage with an historic site. It provides an opportunity to develop critical thinking, enquiry and problem solving skills to answer a question, often using simple tools and techniques that replicate those used by the archaeological profession. Deciding what you want to find out, gathering information, learning how to observe, describe, measure and record accurately and then analysing the information to present an argument or theory to others are the foundation skills of the archaeological profession – and are valuable in any walk of life.

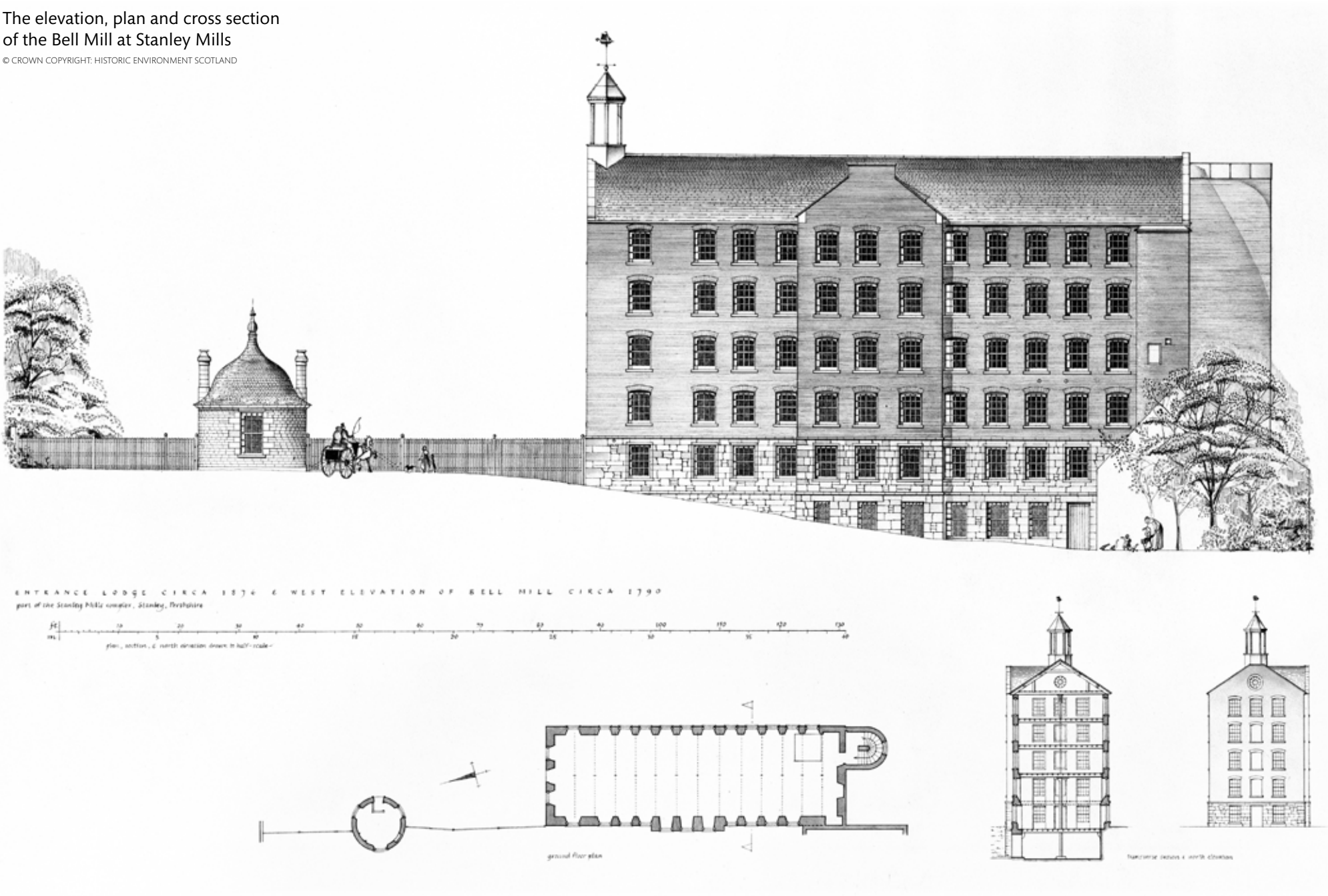
Archaeology is a multi-disciplinary approach that can also involve teamwork, where individual efforts can all contribute towards an end result. This allows for a different type of engagement, with opportunities for pupils to be actively involved in diverse ways, catering for different learning styles. It has the additional benefit of offering an opportunity for learners to see the practical application of subjects such as maths and technologies in a real life environment, putting them in context and making them meaningful and relevant.

An archaeological approach at Stanley Mills

Stanley Mills is a former 18th century cotton mill on the banks of the River Tay in Perthshire. Now an Historic Environment Scotland visitor centre, education groups can learn about the history of the Mills through on-site interpretation and interactive exhibits. Children can also explore the site using an archaeological approach, with the same techniques used by buildings archaeologists during the investigation and survey of the Mills prior to restoration.

The premise is for pupils to find out how archaeology can be used to gather and enhance information about a site, learning some basic skills that can then be used to undertake a simple project on site, applying their new skills in a real life setting.

The elevation, plan and cross section of the Bell Mill at Stanley Mills



In advance of the site visit, pupils create a mind map of what they already know about archaeology and carry out some research to find out basic information about Stanley Mills and where it is. This introduces the use of ICT and online resources such as SCRAN, Canmore and Historic Environment Records (HER), as well as historic map sources such as the National Map Library of Scotland.

On arrival, a brief discussion establishes what pupils know already. They discuss what archaeology is and what sort of skills might be involved, such as observing and describing. In pairs, pupils then use those skills to spot any changes in the buildings and to describe the evidence used to support their suggestions. This involves all pupils from the beginning and builds confidence that they all have the basic skills needed for archaeology, putting forward suggestions, describing and drawing conclusions at a simple level.

To provide a site specific context, pupils go on to explore areas of the Mills where archaeological investigations, undertaken in advance of re-development of the site, made a real difference to the understanding of its history. Aerial photographs and maps are used to illustrate different sources. This could be applied at other sites, particularly drawing on information held on Canmore about any archaeological work carried out in the past.

The context having been set, pupils then undertake their own investigations of an area of the site. Pupils divide into teams and decide on a research question which will direct their subsequent activity. Encouraging the teams to set their own question leads to ownership of their learning – pupils are eager to answer their own question! Questions might focus on what a particular area or space was used for, whether machines were installed in a particular area or space, or whether people worked in a particular area or space. These examples are particular to the Mills, but questions can be appropriate to whatever type of site is being visited. Once teams have agreed on their individual questions they are introduced to a simplified version of the archaeological process that they will follow to undertake their own investigation:

- **Desk based assessment**
- **Fieldwork**
- **Report and analysis**
- **Sharing**

Teams investigate different types of evidence as part of their desk based assessments including photographs, documents and artefact remains, deciding whether that evidence helps towards answering their research question or not, making notes as appropriate. In the case of Stanley Mills, pupils can access Factory Commission reports, archaeological reports, photographs from the 1830s through to present day, and artefactual evidence ranging from pieces of machinery to industrial waste. However, every archaeological or historic site will have different forms of evidence which can inform the activity, whether aerial photography, maps, artefacts in local / national museums or historical records.

Negotiating and decision making skills are encouraged when the teams allocate roles amongst themselves, based on discussions around team members' skills and competencies. Who is best placed to carry out measuring, who is best placed to carry out drawing and who is best placed to undertake photography?

They can then become familiar with some of the basic tools and techniques used by archaeologists to investigate and survey a site. Measuring tapes, hand tapes, drawing boards and illustrative conventions, cameras and photographic registers. A short practice is necessary to ensure learners can all use the tools correctly and safely – knowing the difference between inches and centimetres being an essential check!

The teams then head off to their areas of investigation, deciding what tasks they will undertake and where, coming back together regularly to make sure they always have their research question in mind which should dictate what they record, photograph, draw and measure. Features are identified and / or investigated, measured sketches are produced, photographs are taken with scale and descriptions written.

Teams then re-group at the end to pull compile all their information and decide if they have answered their research question. Initial findings are shared with the other teams, who can make alternative suggestions or challenge the findings if they have a different point of view. Final presentation and sharing of results can be done back in class in whatever form the teams wish, allowing opportunities for developing presentation skills, use of ICT, report writing, creative responses, and more.

Outcomes

Learners are engaged, enthused and excited by the process of discovery and of finding evidence, learning key skills and developing an appreciation for historical sites by directing their own learning. Teachers sometimes ask if there is a 'right' answer at the end. In archaeology there is rarely a 'right' answer, a theory that is never challenged or an interpretation that is never revised. However, to focus on a 'right' answer misses the point. The learning is in the process, with young people actively working as a team to use their skills to gather information and then pulling this together to present their findings and answer their research question, providing evidence to back it up.

The principles of the approach taken at Stanley Mills could be applied at most other archaeological or historic sites. Although the type of evidence available is dependent on the nature and age of the site (industrial sites which have a more recent history are more likely to have a greater range of types of evidence than a prehistoric site), all sites will have some forms of evidence, whether primary or secondary material, historical maps, archival material, written sources, artefacts, building materials, local lore, oral history or old photographs that can be used in different ways.

The research questions set at Stanley Mills are specifically about one area of the site, but much broader research questions could be set at different types of site:

- **Why did people choose to build this site at this location?**
- **Can this site be converted into a new purpose?**
- **What building materials and techniques have been used to construct this site?**

Using an archaeological approach at a historic site can offer a unique learning opportunity for pupils, where they can engage directly with historical evidence and play a part in its interpretation.

4. Archaeology in schools: our top ten tips for success

For archaeological educators

These ideas and suggestions have been prepared for archaeological educators and cultural heritage professionals seeking to deliver or prepare formal curriculum-based archaeological learning, whether as an event, presentation, exhibition or learning resource.

Tip 1. Preparatory dialogue

Archaeology provides an exceptional opportunity for cross-curricular learning both within the classroom and outdoors. However, to be fully effective, no matter how many learning resources or loan boxes are provided, no matter how many special events and site open days are run, nothing beats a well-prepared teacher paired with an enthusiastic and knowledgeable archaeological educator.

Preparing schools and teachers before they connect with archaeology is really important, ensuring your own success and laying the foundations for future archaeological engagement. Archaeology is more than digging holes – and teachers may not know about the breadth of subject matter which the discipline covers. Preparatory dialogue, a clear written introduction and briefing notes prepared well in advance will allow teachers to know what they can expect from your event or resource and to make connections with other classroom activities, encouraging them to fully engage with the archaeological topic.

Tip 2. Resource presentation

Never underestimate the importance of using plain English and of good illustration and great design. All of your written material should be easy to understand, with good visual hooks, descriptive captions and a glossary if required. It is really important that you set out your aims and objectives, background information and suggested activities within a well-defined framework. All curriculum-based learning resources should also provide integrated means of classroom evaluation. However, don't be scared of a short shelf-life, as all interpretation products and learning tools age over time (and can always be improved).

An 18th century benchmark on the road at Loch Arklet

Tip 3. Practice and reflect

Learn from past experience by reflecting upon success and failure. Before you launch a new written resource, trial it with your target audience (such as a teacher and their class) to see if it works. If you're developing a taught session in your venue or to take out to schools, try to pilot it with a friendly school. Take on board comments and criticisms you may get from teachers. If they don't like it, they won't use your resource or book your session and they'll tell others not to. Be prepared to constantly improve your product through comment and reflection.

Tip 4. React to the zeitgeist

Enable active learning by drawing upon the children's own experience and knowledge. Constructivist learning theory is at the heart of the classroom experience. If their context for the Palaeolithic is the Ice Age films, use it. If they know about phoenixes from Harry Potter, make that connection to the image on a Roman coin. The National Museum of Wales recently had an archaeology exhibition that took Indiana Jones as its attention-grabbing headline, a context that many visitors will have for what archaeology is. So you now have an excuse to watch a lot more children's TV and films – and to play a bit of Minecraft. You'll not only be more effective in engaging the children, but they will also feel valued for what they already know.

Tip 5. Build a narrative

As humans, we tell stories all the time, but archaeology can often shy away from storytelling. One person's life does not necessarily reflect an entire period or group of people – and so stories can often include elements of guesswork and fiction. However, people are interested in people, and narrative is often how we explain our world. Stories are easier to process and more memorable than a collection of unrelated facts. Teachers will also often use children's books to tie their history topics into English. So use stories – and then break them down objectively (see next tip). Make comparisons between then and now. What are the similarities between the present and the past, as well as the differences? What do human beings (regardless of their place in time) need to thrive?

Tip 6.
Use critical thinking (inside)

Reference your sources, use the latest research, explore the limitations of the evidence and lay the discipline bare to the informed interpretations of the children. Critical thinking is an important part of the curricula in the key subjects of English, maths and science; but there can be a lack of analysis of the credibility of the sources in the teaching of history (which becomes even more pronounced when studying archaeological topics). Help the children become aware of the limitations of the archaeological evidence, point out where it contradicts the historical accounts and explain how some archaeological interpretation comes from ethnographies. Not only are we teaching kids 'facts' about the past, but also how to think and reason. An archaeological way of thinking is about asking questions, formulating hypotheses and interpreting information.

Tip 7. Use critical thinking (outside)

"We are all archaeologists now." How best to promote an archaeological way of thinking? Begin with close observation of monuments and the landscape and explore the clues about the past all around you. What might look like some lumps and bumps in a field can be reimagined as standing structures if children are taught how to read them – by looking closely and using their informed imagination.

A simple pencil and paper can help kids interpret the archaeological landscape they see by encouraging observation and discussion. A follow-on session with a focus on the possible different interpretations that can be made of field remains will promote analysis and creativity.

Historic maps are another excellent tool to use to examine cultural landscapes, enabling cross-examination to be made between the past and present. Be aware though that children may not necessarily have the graphic literacy to interpret maps: this is something which needs to be taught and cannot be assumed, specially with younger children. Another issue is that maps only depict selective elements of the real world. They are interpretations of what the mapmaker chose to depict, rather than a true reconstruction of any landscape. Archaeology helps people understand and interpret evidence that is selective, partial and incomplete; teaching critical thinking techniques in the context of outdoor or local place-based learning is the first step towards 'thinking like an archaeologist'.

Tip 8. Be inclusive (within archaeology)

Don't just focus on your own site or project – by seeking to include the wider context you can provide teachers with ideas and suggestions local to them but beyond your own responsibilities. From nearby archaeological sites to local museums and relevant aspects of wider culture, including others in your 'package' will broaden its appeal. For example, the learning resource *The Picts* aims to support indoor classroom and museum learning alongside outdoor learning at Pictish hill forts and symbol stones local to the school. By providing broader information and suggestions within an inclusive package, the learning resource becomes a roadmap with many different routes (and many different champions promoting its use).

Tip 9. Be inclusive (beyond archaeology)

Also seek to align your archaeological objectives with those of other sectors. There are many different routes to understanding the past – and not all are archaeological. The learning resource *Wolf Brother's Wildwoods: imagining Mesolithic life in Scotland's forests and woodlands* has been embraced by outdoor educators as it provides an additional angle to traditional bush craft and a ready link to indoor classroom learning (via Michelle Paver's excellent *Wolf Brother* novels). The resource explicitly states these cross-curricular objectives: to "bring the Mesolithic period to life through a series of woodland and classroom learning activities; encourage pupils and teachers to enjoy spending time in their local woodland; and support teachers in delivering Curriculum for Excellence outcomes through outdoor learning". Seek opportunities to include / link to other topics within your package.

Tip 10. Appreciate the complexities

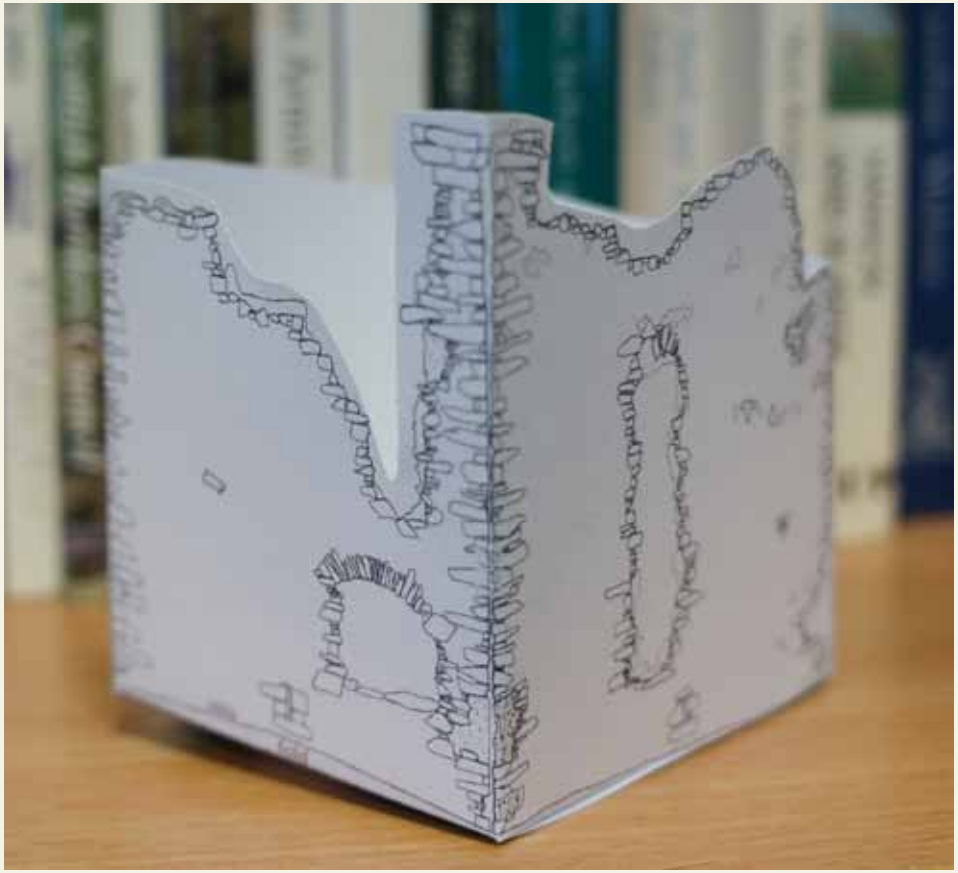
Archaeology isn't rocket science – but it can involve some pretty complicated ideas! Appreciate the complexities and be patient. Many kids (and some adults) have real problems understanding time and chronology. You should try to steer clear of radio carbon dates, centuries and BC / AD – and try to use generations, 'years ago' and timelines to set the scene.

Archaeological reconstruction drawings are a useful tool to help people imagine what life was like in the past and what a site may have looked like in its heyday. Not just artistic fantasies, these drawings are based on archaeological evidence, aerial photography and measured surveys. They can be found in guide books, on site interpretive panels, illustrating books and in classroom learning resources.

Model of the early Christian monastery at Applecross

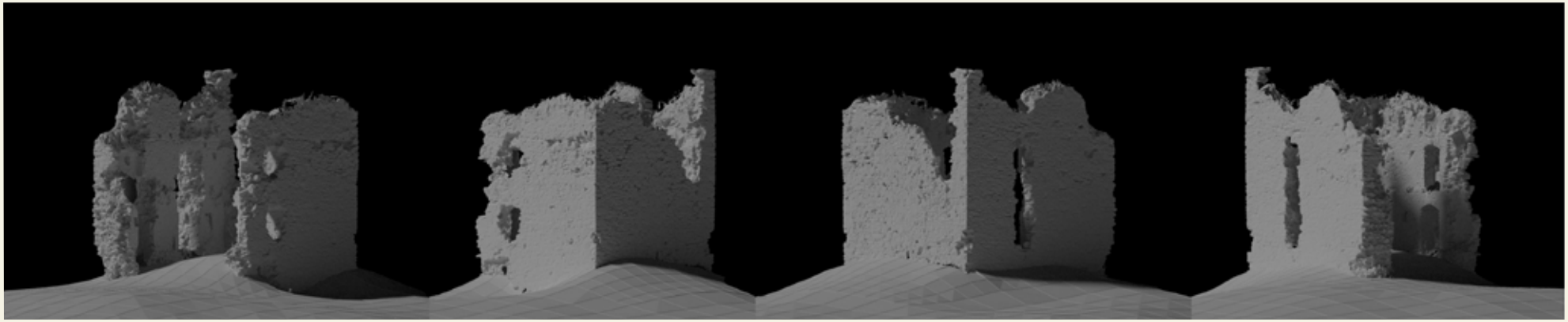
The Very Archaeological Cut Outs #1

Nether Horsburgh tower

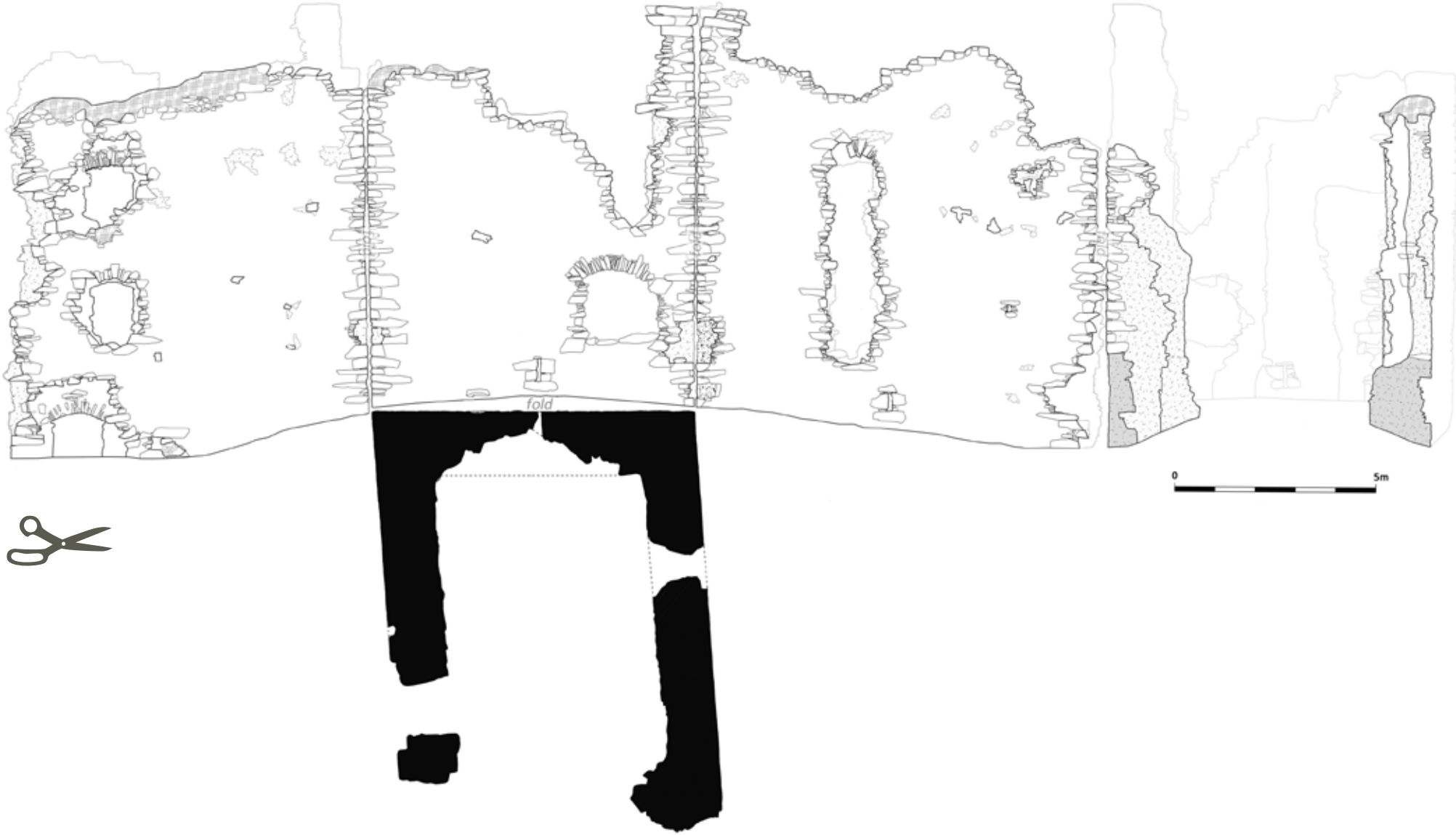


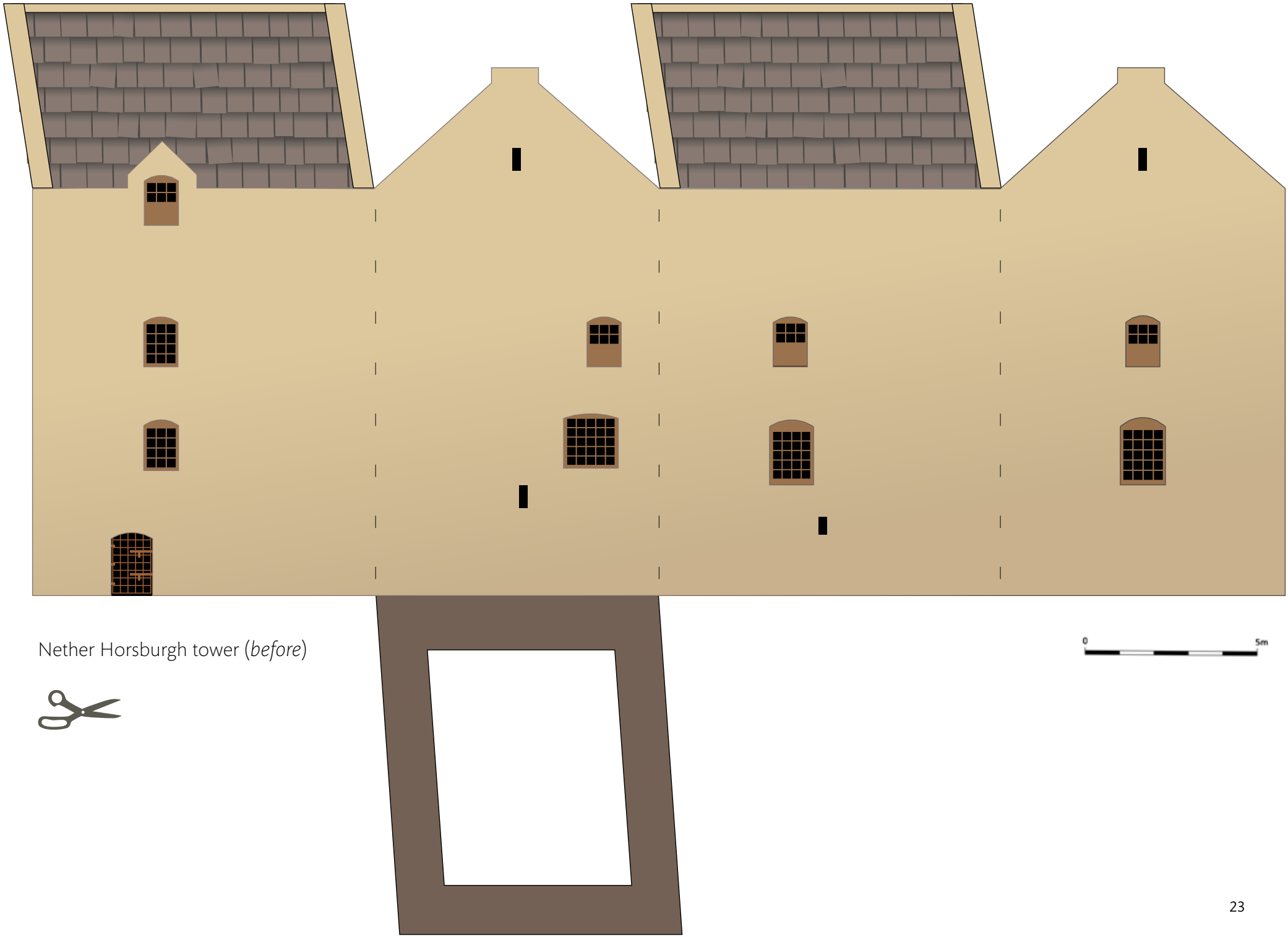
Model making can be a great way to engage children with the physical scale of a site – both as it survives today and how it may have looked like in the past. Children can learn about scale and measurement (and can use their own measurements and observations taken during their site visit). It's also a great way to explain the concept of *before* and *after* – or rather *after* and *before*. The site as we see it today survives after the passage of time – but what did it look like before and what happened to it in between?

Model making can involve craft activities, LEGO® bricks and even using the plans and elevations resulting from professional archaeological surveys. *The Very Archaeological Cut Out* of the 16th century tower house of Nether Horsburgh near Peebles was made using the plans and elevations resulting from a terrestrial laser scan survey. One side of the tower house has completely collapsed and the ground surface itself has risen as a result of rubble from the building, partially burying the door. Try building the tower both as a ruin (*after*) and as a reconstruction (*before*).



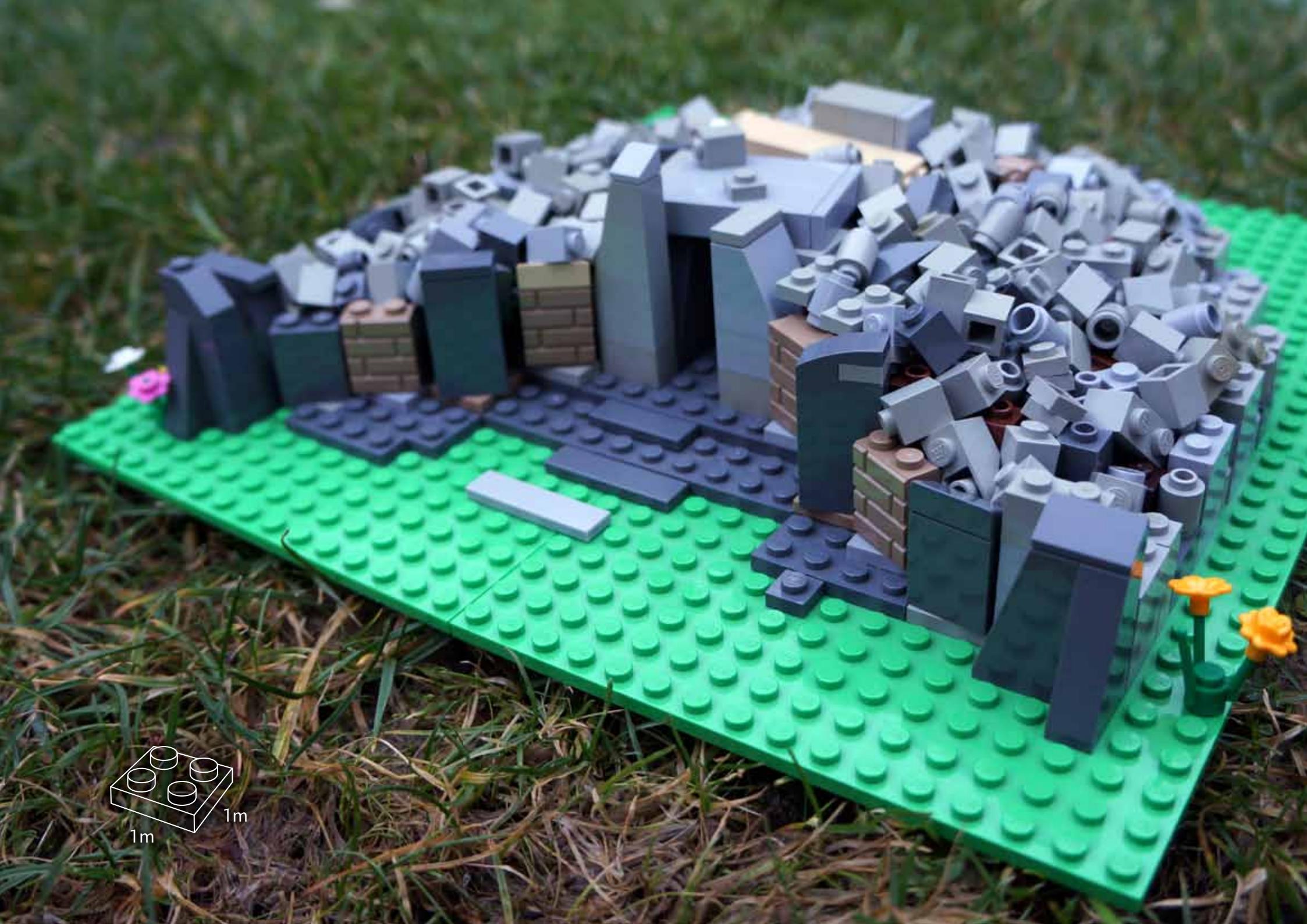
Nether Horsburgh tower (*after*)





Nether Horsburgh tower (*before*)

A model chambered tomb built out of LEGO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5. Draw nearer: create your own archaeological reconstruction drawings

For teachers and archaeological educators

Archaeological reconstruction drawings are a useful tool to help people imagine what life was like in the past and what a site may have looked like in its heyday. Not just artistic fantasies, these drawings are based on archaeological evidence, aerial photography and measured surveys. They can be found in guide books, on site interpretive panels, illustrating books and in classroom learning resources.

Creating a reconstruction drawing can be a motivating challenge for pupils, combining on-site observation and research alongside artistic skills and imagination.

Research and investigate

Before pupils start drawing your own reconstructions, try to find relevant maps, plans and aerial photographs. Look for photographs of the site, whether from the air or overlooking it from a nearby vantage point. Read about the site and similar examples. Are there any myths or stories associated with the site?

Look at other examples of reconstruction drawings, perhaps of your site (if they exist), or other sites or places. Which drawings do the children like best? What can these drawings show? The more pupils have found out about a site before they visit, the more meaningful their visit will be, and the easier they will find it to develop a theme for their drawings.

Choose a theme

What aspect of the site should your reconstruction drawing show? Some reconstruction drawings focus on life inside a site, or on the clothes that people wore. Some focus on the walls and structures – and some try to set the site within its ancient landscape. Others illustrate a historical event or an archaeological idea or process. So the same site could be illustrated by a number of different drawings, each showing a different aspect of the history of the site. A good reconstruction drawing will focus on a single theme.

Artist Alan Braby at work in his studio

A theme is an idea that you want your audience to engage with. It is not a subject or a topic. 'The hillfort' is a subject. 'This hillfort was once burned down' is a theme – and so is 'Life inside this hillfort was very busy' or 'The ramparts of this hillfort were big and strong'. Deciding on your theme before you start to draw is really important.

Your theme could focus on:

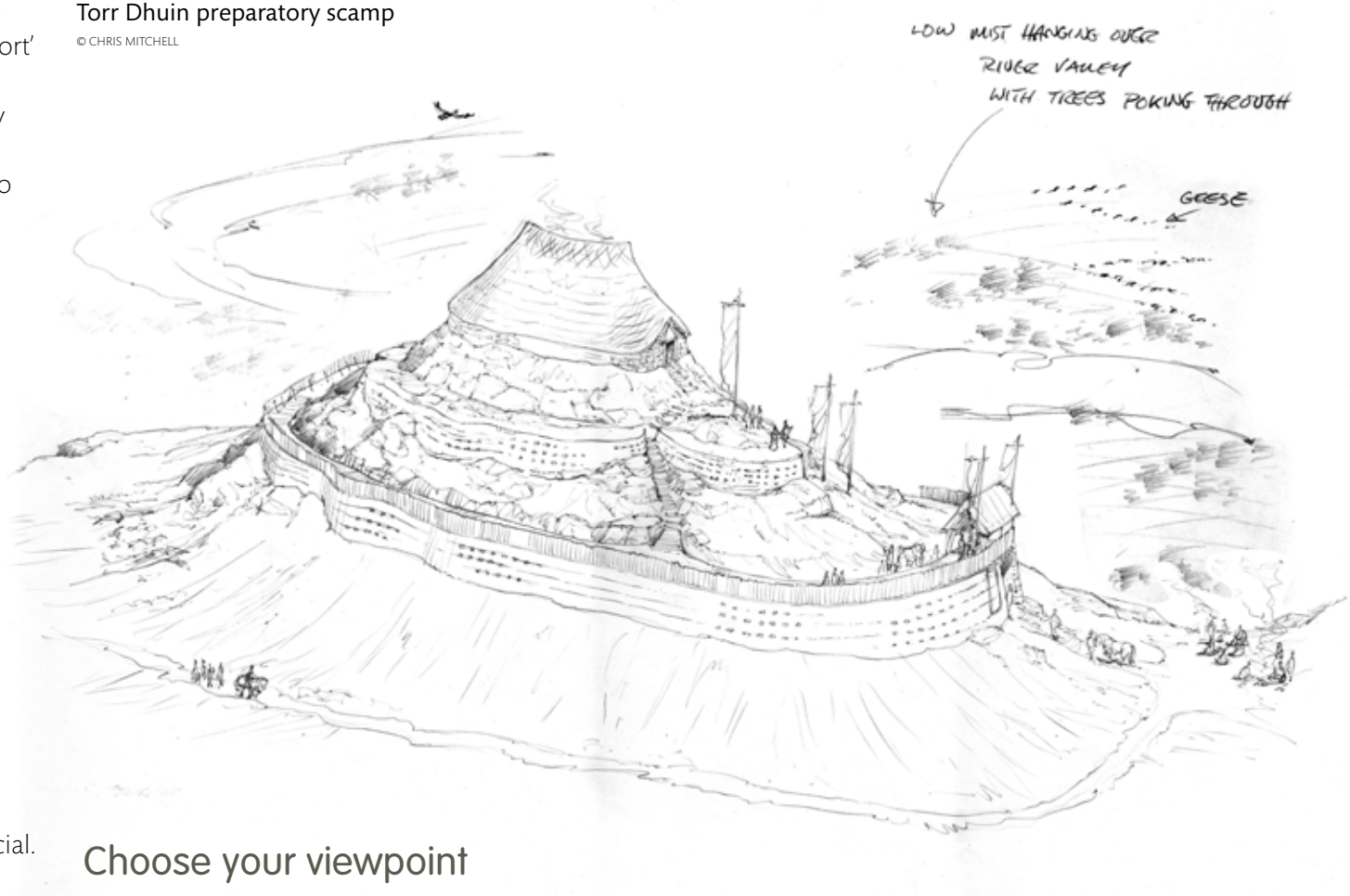
- An **event**, which shows a particular thing which happened at the site
- The **site** itself, explaining the architecture of the site
- The **setting** – showing the site in its wider landscape
- **Ideas** – explaining archaeological ideas and processes

Pack a theme in your suitcase

Imagine that you are going to visit somewhere far away, where people know nothing about your site. You want people to understand it and why it's special. Pick just one thing you would take with you in a magic suitcase – something that for you captures the essence of the place. It could be the view, an object, a person, the size – or maybe a sound or a smell or a texture. Remember, you have a magic suitcase!

Write down, in no more than two sentences, what it is that you would like people to feel about your site just from looking at (or maybe touching) whatever is inside your suitcase. Start with 'I'd like people to think that...'

Torr Dhuin preparatory scamp



Choose your viewpoint

Your drawing will make most sense to the visitor if they look at the site *from the same viewpoint* as the illustration (like looking through a 'window in time'). Including visual clues to the surviving remains is a good idea, such as a distinctive wall or feature. Think about showing distinctive landscape features, such as a cliff or a river – things that were there in the past and which are still there today, to help the visitor orientate themselves.

Tip

Think about what you want your reconstruction drawing to explain – if you need to explain or illustrate an archaeological idea, you will need to plan your drawing carefully.

With your theme in mind, walk around the site and choose the best viewpoint for your drawing. Take photographs to help you remember, so that you can finish or add to your drawing later. However, you may decide not to use an existing viewpoint and to imagine a new one or use an aerial photograph.

Plan your drawing!

Planning your reconstruction drawing is really important. Sketch out your idea and see if it works before you add too much detail or spend time colouring. Try using different grades of pencil – you can plan your drawing with very hard, light-marking pencils; and add detail using very soft, dark-marking pencils.

Think about:

- The **purpose** of the drawing – is it for a guidebook, an exhibition or an interpretive panel? An illustration for a book will be smaller and simpler than an illustration for an interpretive panel. An illustration for a panel will be large and will have plenty of space for lots more detail.
- **Scale** and **perspective** – getting everything the right size.
- **Composition** – getting everything in the right place.
- Using **cutaway** drawings – looking inside a building through its walls or roof.
- Include plenty of **detail** to add interest to your drawing. Perhaps you could include objects which were found on the site.
- **Imagination** – a good reconstruction drawing must be interesting.
- **Characters** – are they representative? Do you want to reflect diversity in age, ethnicity, gender and abilities, just like in real life today?
- **Humour** – could you include something to make the visitor laugh? Perhaps you could draw a child picking his or her nose, or two dogs sniffing each other's bottoms!

Tip

Trying out different perspectives and views can help your final illustration – and can even be drawn up as proper illustrations in their own right.

Master class

The following examples show how archaeologists and illustrators worked together to develop their reconstruction drawings. The examples include preliminary sketches, known in the business as scamps, as well as finished illustrations.
They have been chosen to illustrate a range of themes and methods used in archaeological reconstruction drawings.

Torr Dhuin

The fort of Torr Dhuin above Fort Augustus was once the seat of an Iron Age or Pictish chief. It has never been properly excavated, so we know very little about it – but it is a site with real character, perched on rocky cliffs high above the river below. This is a site to let your imagination go wild! The now-vanished central hall must have been home to many feasts and celebrations, momentous decisions and everyday family dramas.

Chris the artist worked hard to get the scale and perspectives right, first building a 3D sketch model of the site using maps and plans. Getting this right is important – not only does the reconstruction look right when compared to the site today, but it allows just the right amount of detail to be added. We don't really know if there was a gatehouse for example, or what it looked like – but if one did exist, it probably would have had a thatched roof to keep out the rain. Too much detail can be difficult or misleading.

The **theme** chosen to illustrate at Torr Dhuin was *'An exciting cliff top location'*. The composition cleverly contrasts the detail of the site itself with the valley floor far below, looking down on the site from above. A similar effect could have been achieved by changing the angle and looking up at the site from below (but not so much detail would have been possible!). The scamp on the previous page helped Chris and Matt the archaeologist plan the final reconstruction.

Torr Dhuin

Tip

If you are not very good at drawing landscapes, focus on people, objects or furniture.

We know from archaeological excavation that there was often a large rectangular stone-built central hearth within these buildings. Chris used this archaeological information to help develop the theme and then imagined the activities that went on around it. These scamps show a storyteller and his audience sitting around the rectangular stone hearth (the theme) – and (using a different angle) women cooking over its fire.

Dun Deardail

The hill fort of Dun Deardail in Glen Nevis was built around 2500 years ago, although it may have been occupied and reused on several occasions through time. The only thing we know for sure about Dun Deardail is that it was once destroyed by fire, because there is evidence of vitrified (melted) rocks in the ramparts.

Tip

Don't be scared to use your imagination to bring colour, atmosphere and excitement to your drawing!

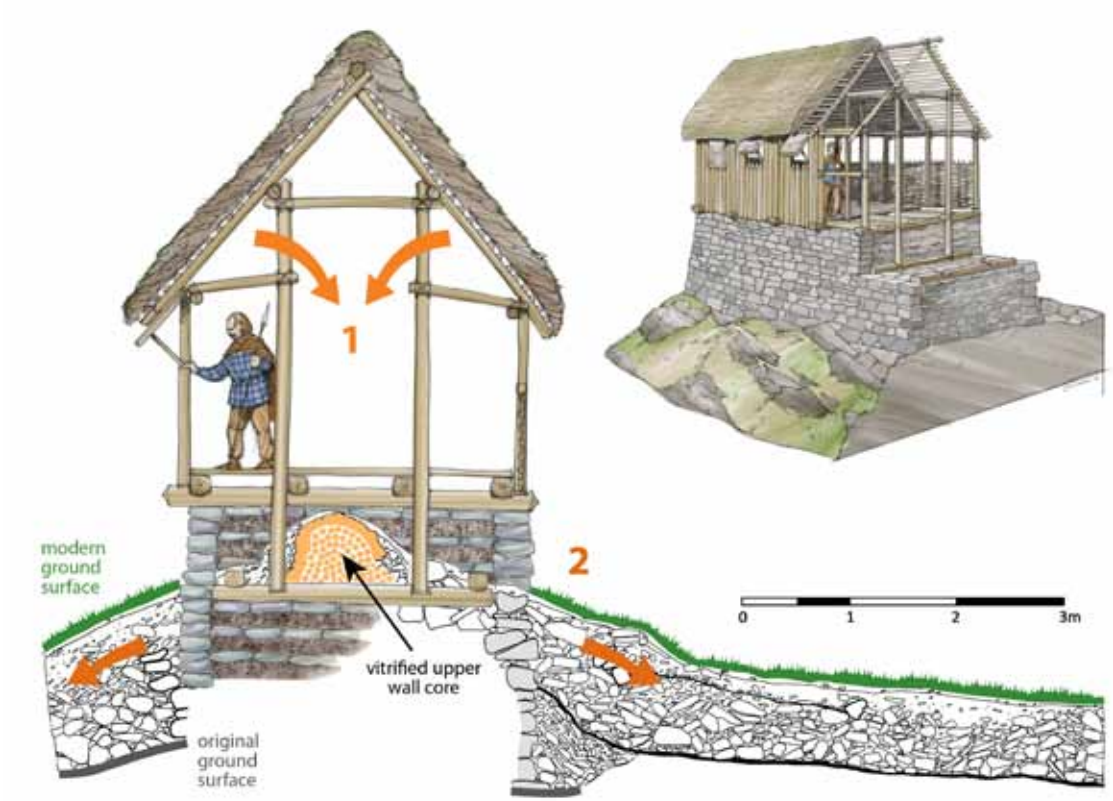
Dun Deardail on fire

The process of vitrification occurs when a timber-framed stone-built rampart is destroyed by fire – and the heat generated is so intense that the core of the stone rampart melts.

Matt and Chris first used a measured archaeological plan and aerial photography to provide good topographic detail and information about the size and shape of the fort.

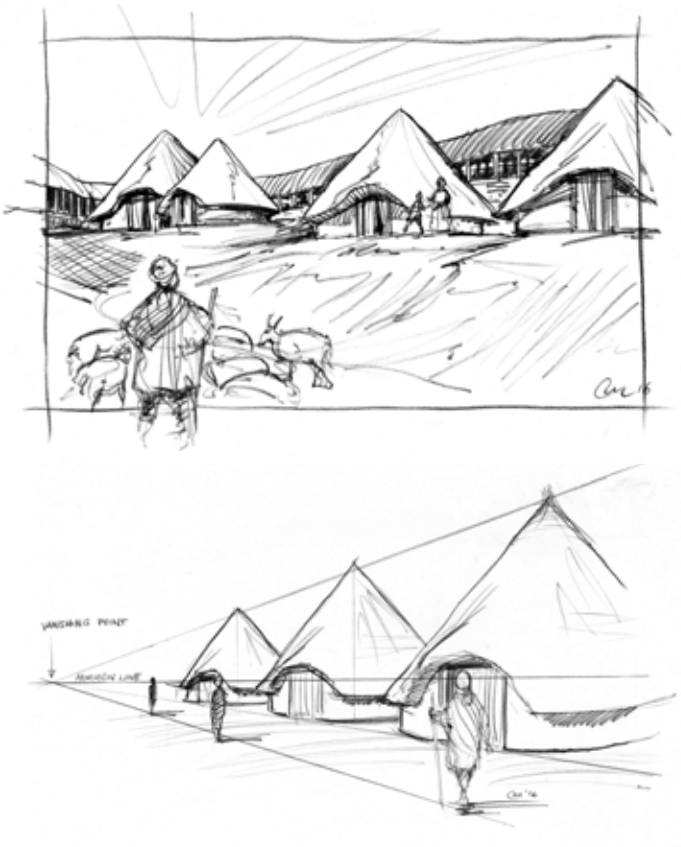
They then discussed the process of vitrification and agreed that as the most important thing we know about the fort, the **theme** of the illustration should be an event: *'The night of the burning'*.

We don't yet know anything about the interior of the fort, so the roundhouses are assumptions based on our knowledge of other similar forts.



This illustration uses both the archaeological section drawing to illustrate the spread of collapsed rubble and a reconstruction drawing to illustrate the possible timber and thatch superstructure in both section and in 3D. This archaeological idea is indicated by the arrows: [1] the timber superstructure collapses and heats the upper part of the wall (creating the molten vitrified core); and [2] the rampart walls then collapse outwards (creating the rubble deposits).

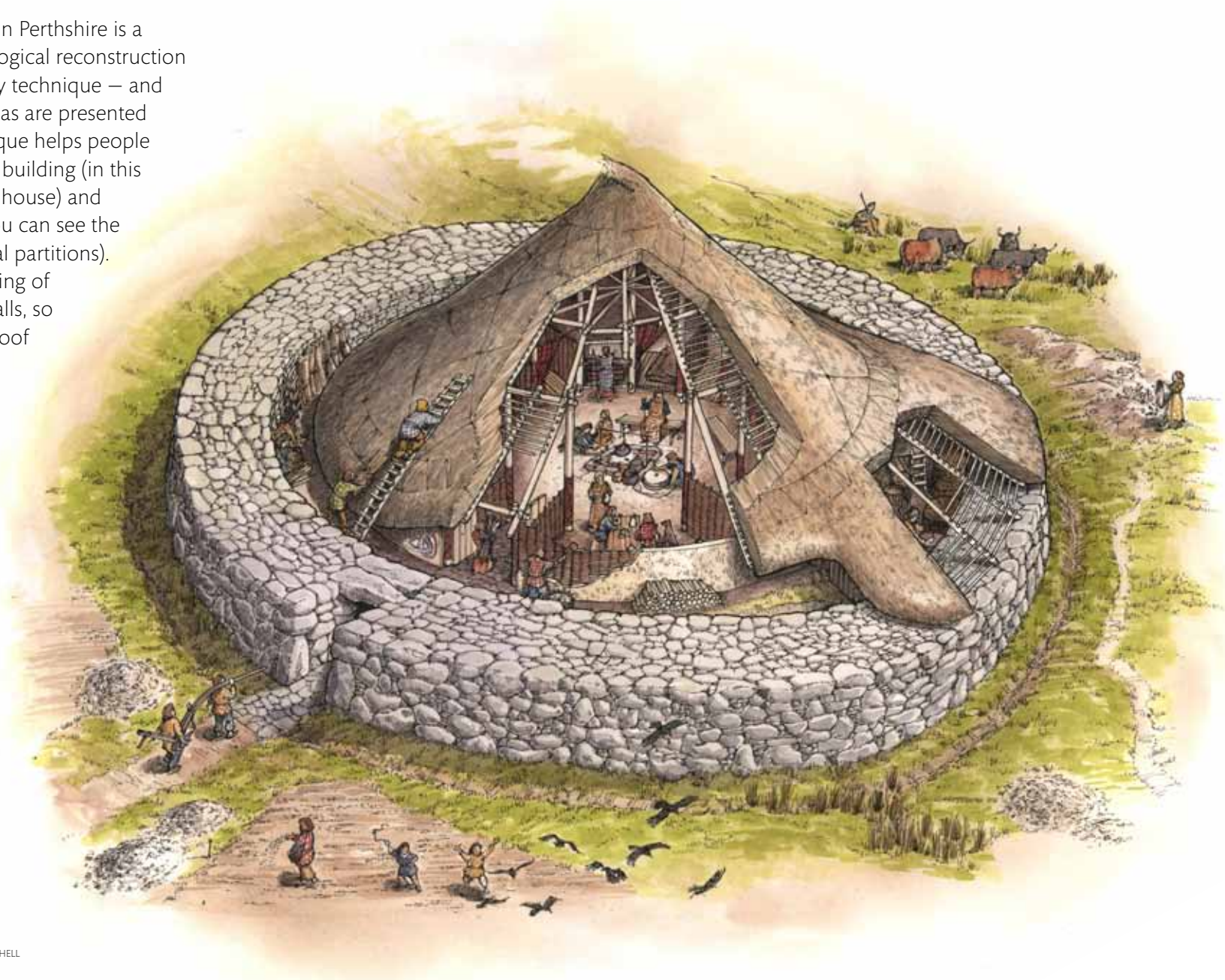
However, recent excavation has discovered more about the vitrified rampart and the collapse of the drystone walls. We now know that the vitrified core is only found in the upper section of the rampart and think that it may have been caused by the burning of a substantial timber and thatch superstructure.



These scamps helped us decide the scale and perspectives of the timber roundhouses within the fort. The roundhouses may be guesswork, but they help explain the scale of the hillfort and its possible rampart structure.

Queen's View

The ringfort of Queen's View in Perthshire is a great example of an archaeological reconstruction drawing that uses the cutaway technique – and where two archaeological ideas are presented together. The cutaway technique helps people understand the structure of a building (in this case a timber thatched roundhouse) and allows them a peek inside (you can see the central hearth and the internal partitions). Archaeologists discovered a ring of postholes within the stone walls, so there was definitely a round roof but we don't know if the roof rested on the top of the wall or inside.

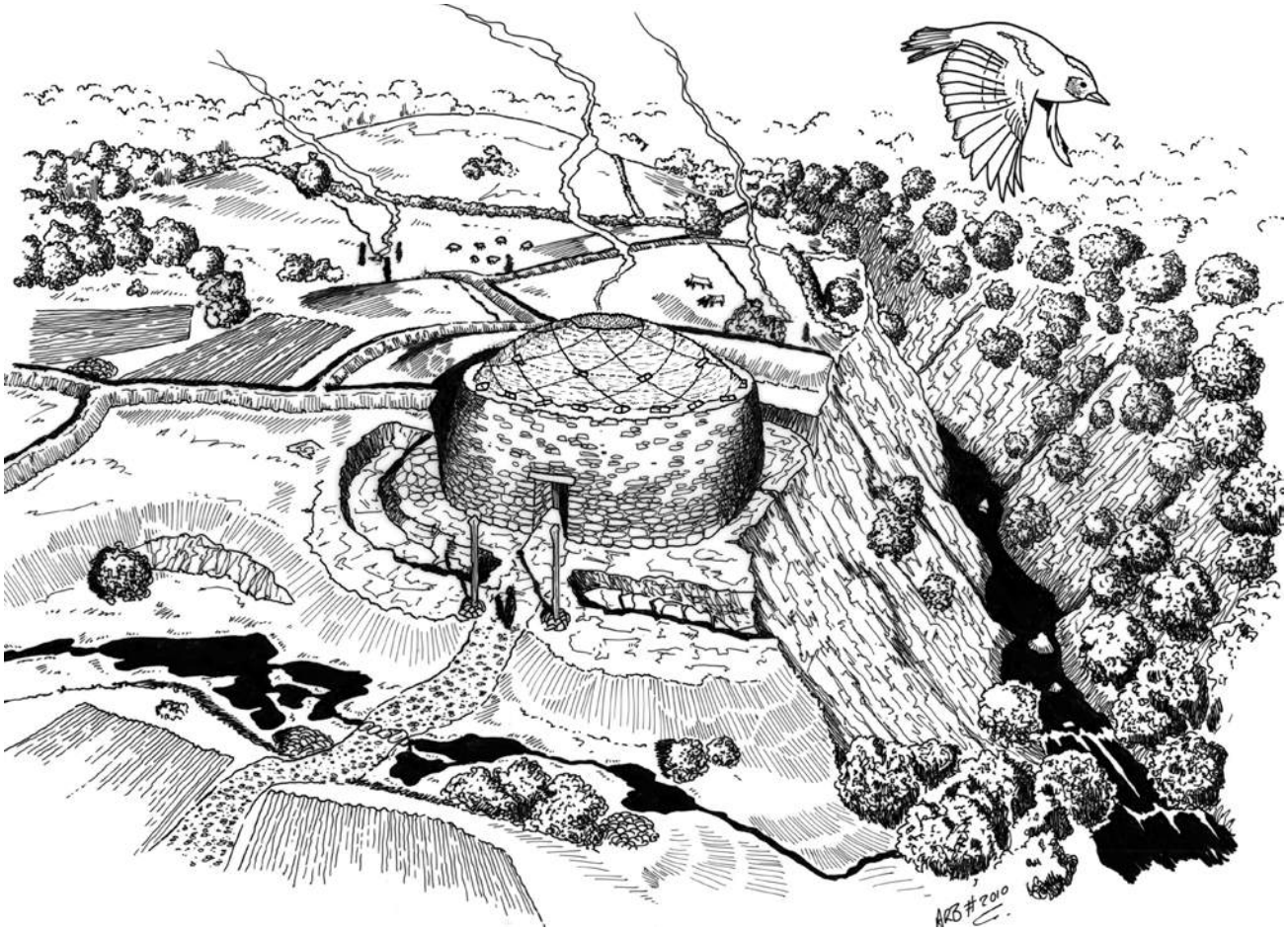


Queen's View

Black Spout

Excavations at the Black Spout ringfort near Pitlochry in Perthshire were undertaken by the Perth and Kinross Heritage Trust. A series of reconstruction drawings were prepared by Alan Braby, including one of the ringfort in its landscape setting alongside several interior views.

Alan decided not to use the cutaway technique as he felt that there would be enough structural detail in the series of illustrations as a whole. He used different viewpoints to build a narrative theme – although each individual illustration can be used on its own, viewing them as a series helps build understanding of the site.

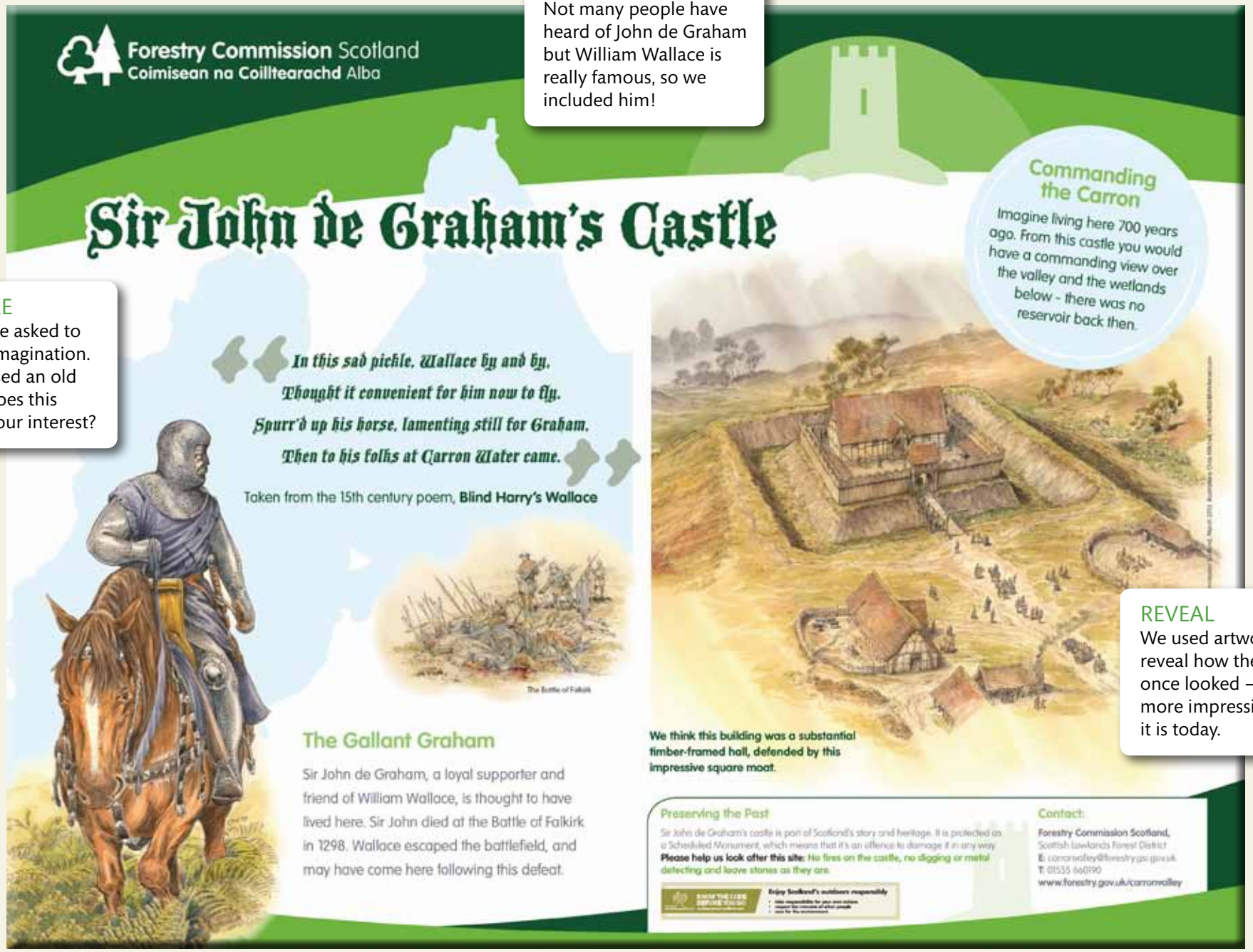


The view of the ground floor shows the interior of the building with cattle byres and storage. Looking out of the doorway and into the rain helps to emphasise being inside.

The view of the upper floor (left) shows domestic life within the ringfort, with a raised central hearth, storage within the roof rafters and a door leading out onto the wall head. Alan explains further: "the **theme** of this illustration is a domestic scene, all centred around the open hearth, which sits on a clay raft on top of the wooden floor timbers. A woman is cooking in a metal cauldron suspended over the hearth, while an animal carcase is being skinned in the background. The boy behind the cauldron is coming up a ladder from the ground floor below. There are various joints of meat and bunches of herbs and other material hanging from the rafters to smoke and cure. The various objects depicted within the image – such as the quern stones, pots and baskets – are based on those artefacts excavated from the site itself or from other contemporary sites within the surrounding area. In this illustration the eye is led to the background through an open door where a figure stands watch".

RELATE
Not many people have heard of John de Graham but William Wallace is really famous, so we included him!

PROVOKE
Readers are asked to use their imagination. We also used an old poem – does this provoke your interest?



REVEAL
We used artwork to reveal how the castle once looked – much more impressive than it is today.

6. You are here: create your own place-based interpretive poster

For teachers and archaeological educators

You'll often see interpretive panels at historic sites. They can be a great way of providing information to visitors to help them understand the site. But producing an effective panel takes time and effort.

Writing an **interpretive poster** or **panel** is a good exercise in creative writing and effective communication. You need to think about your subject, your objectives and your audience.

This example for Sir John de Graham's castle is a real panel, produced for a historic site near Stirling. There isn't much of the castle left for visitors to see, but there is still an impressive deep moat. We're not claiming this is a perfect panel, but it illustrates the process of producing visitor-focussed interpretation and of writing with the reader in mind.

Now it's your turn!

Ideally, choose a historic site you've visited or know well. You could use the information and observations gathered during your visit and the archaeological reconstruction drawings you created.

Clarify your objectives

What do you want your poster to achieve? Write down two or three objectives. For example 'we want visitors to help protect this interesting historic site'.

Know your audience

Who are you writing this for? If you know who might read the poster, it'll help you choose the most appropriate content and tone of voice. Should it be formal or friendly?

Choose your theme

Decide the overall story you want to tell. People can remember a story far more easily than a collection of facts. Try to write your theme in a single sentence. For example *'John de Graham's castle once controlled Carron Valley'*.

Choose your messages

What do you want readers to know or do once they have read your poster? Too many messages can be confusing. Three or four is enough. For example, visitors will know that:

- Sir John De Graham fought alongside William Wallace
- The castle had an unusual square moat
- The castle is an important place and needs protection

Write your poster

You need to attract and keep the attention of a range of people. Have a clear **title**, so readers know what it's about. If you can, use your title to provoke interest.

Make your words easy to read and understand. Avoid jargon and specialist words. Don't write too much – 200 words is plenty. Including all your key messages in so few words is challenging, so you may need to edit your content to reach this limit!

Interpretive posters and panels should try to:

- **Provoke** the visitor's attention. Think about the ways that news headlines and adverts attract your attention.
- **Relate** to something that readers already know about or care about. This will help them understand and connect to your story and messages. You may be able to include an analogy or metaphor.
- **Reveal** something interesting, enjoyable or surprising.

Choose artwork and images

Pictures should help tell your story. You might have heard the saying 'a picture is worth a thousand words'. Archaeological reconstruction drawings can really help to bring the past alive. Good images also make your poster look more attractive to potential readers.

You can add captions to the pictures to give more detail if necessary. Your title, text and artwork should all work together to help explain your key messages.

Design your poster

Good design will help visitors read and understand your messages. Use different text sizes to guide the reader: most readers will read the big stuff first. Break your text up into chunks – this makes it easier to read and understand.

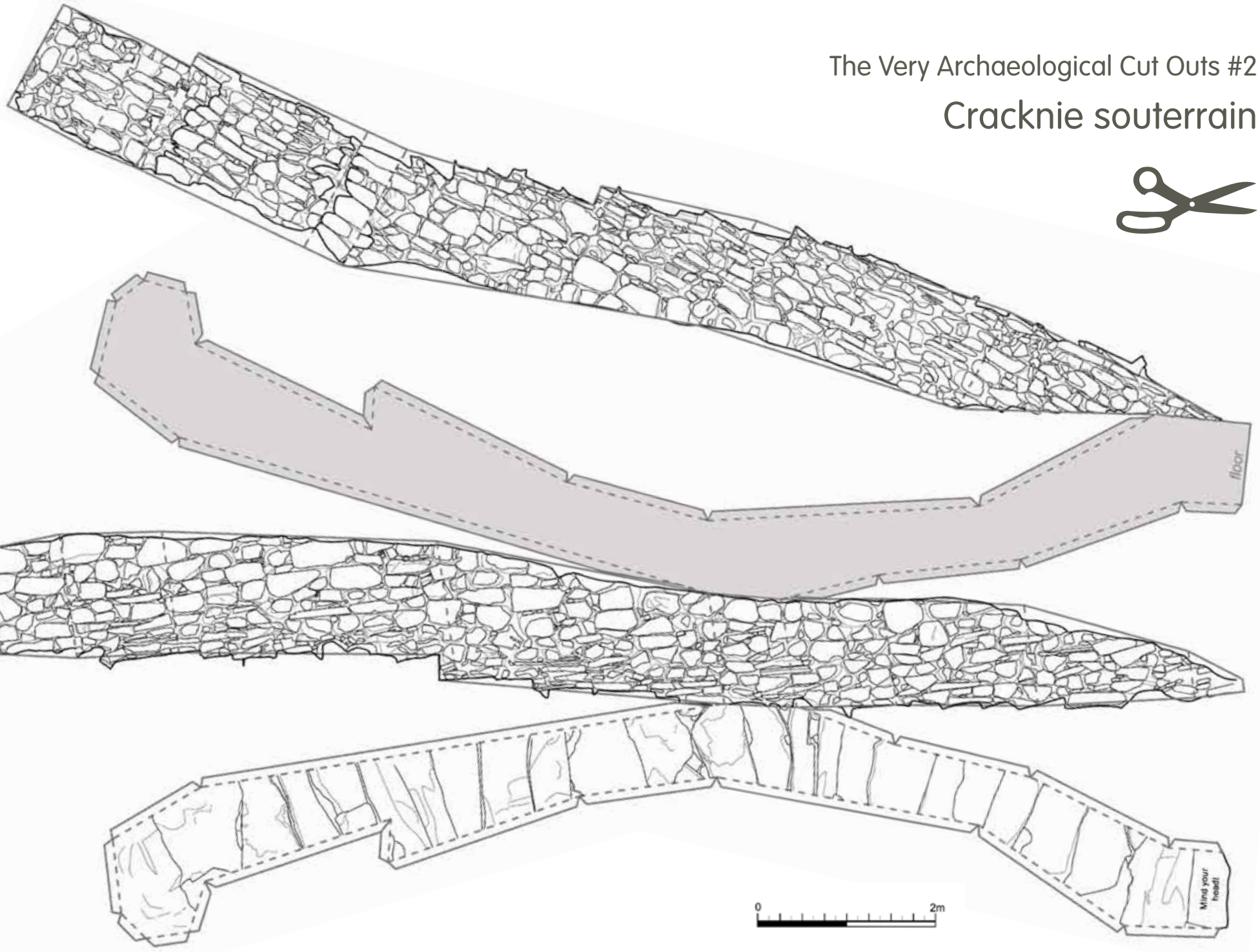
Further reading

Environmental Interpretation: A Practical Guide, Sam Ham (1992).

Designing Interpretive Signs, Moscardo, Ballantyne & Hughes (2007).

The Very Archaeological Cut Outs #2

Cracknie souterrain



Cracknie souterrain is a curving underground passage or cellar. It dates from the Iron Age and was probably associated with a roundhouse built on the ground surface above. It measures about 13m in length, sloping downwards to reach a small chamber at its end. Sites don't get much more mysterious than souterrains: was it a storage cellar, a secret refuge or even a prison for slaves?

7. Storylines: using myths and legends to bring sites to life

For teachers and archaeological educators

Storytelling around the hearths of roundhouses and halls was an important pastime and myths and legends can still be powerful tools to illuminate ancient sites and fire the imagination. We have used the ancient Celtic myth *The Sorrow of Derdriu* to demonstrate creative writing and narrative illustration; and a graphic interpretation of the early Anglo Saxon tale of *Beowulf* to demonstrate the classroom potential of long storylines such as the Bayeux Tapestry.

The Sorrow of Derdriu

The Sorrow of Derdriu is also known as *The Exile of the Sons of Uisliu*. The story was first recorded in the *Book of Leinster* in c. AD 1160 and forms part of the famous *Ulster Cycle*. The early medieval Irish myths represent an oral storytelling tradition many centuries old.

A carved Roman Pegasus found within the walls of the Crichton souterrain. The carving of this mythical beast had been recycled from a nearby Roman site.

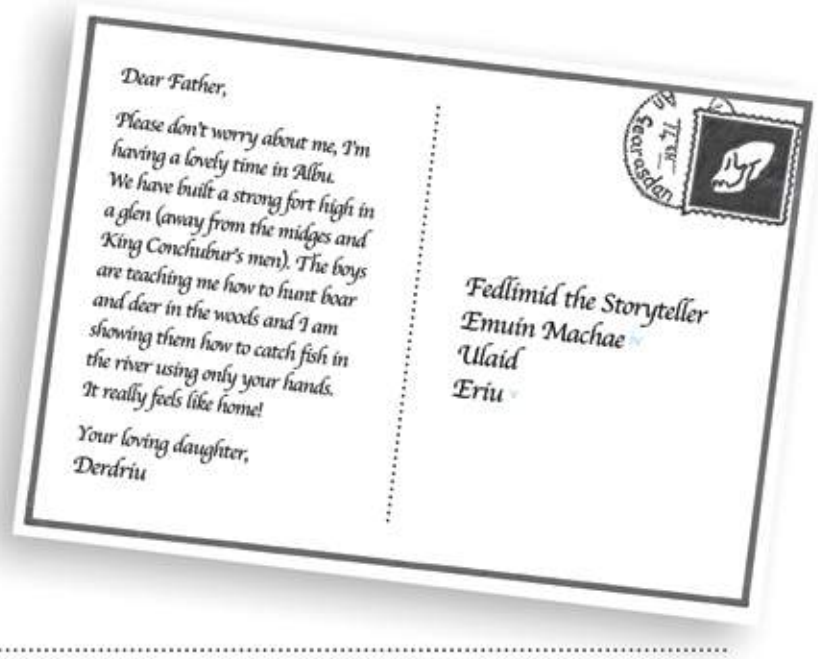
The Ulster Cycle describes an aristocratic Celtic society in which honour is of paramount importance. The colourful descriptions of the courts of kings are said to offer a 'window onto the Iron Age', where fighting and feasting, champions and chariots, and druids and demigods take centre stage.

The Inverness Young Archaeologist Club at the hillfort of Torr Dhuin. Following a site visit, the children created a pop-up exhibition of their archaeological reconstruction drawings.

TO: **King Conchubur of Ulaid**[i]
FROM: **Cathub the Druid**
SUBJECT: **There may be trouble ahead...**

O Great King, remember your young bride-to-be, the beautiful Derdriu? Well, it seems that she has run away to Albu[ii] with her lover Noisiu and his two brothers, Aindle and Arddán, the three sons of Uisliu (along with three fifties of warriors and three fifties of women and three fifties of hounds and three fifties of servants[iii]). Remember my prophecy at her birth that she would bring about the ruin of the Ulaid? Well, I council that you leave them be and don't send men to hunt them down.

Your faithful advisor,
Cathub the Druid



Fergus, go to Albu and tell the Sons of Uisliu that all is forgiven. Tell them that they are to be my special guests at a great feast in their honour. And tell her that I want my monkey back![vi]
King Concubur

On my honour it will be done. Fergus mac Roach

Eogan, come to Emuin Machae and ambush the Sons of Uisliu but spare Derdriu. Don't tell Fergus – let's keep this a nasty surprise!
King Conchubur

On our dishonour it will be done.
Eogan mac Durthacht

Great news! King Conchubur has forgiven us and our exile is OVER! Derdriu was worried that it was all just a trick and didn't want to go, so I burnt down the fort. Now we have to come home!

Like Comment Share

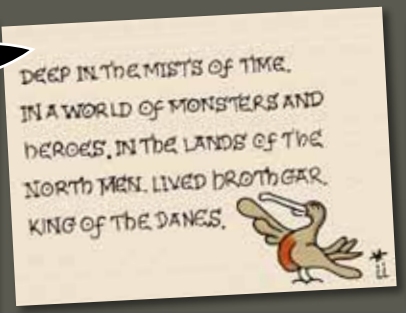
NEWSFLASH

Breaking news! Huge battle inside Emuin Machae, Sons of Uisliu murdered. Derdriu captured and miserable. Honour of Fergus mac Roach besmirched, vows revenge against treacherous King Conchubur. Ulaid riven with tension and fighting. Druid's prophecy of the sorrow of Derdriu has come to pass.

i Ulster
ii Scotland
iii The Celts liked things to come in threes (and never did anything by half...)
iv The royal capital of Ulster
v Ireland
vi The skull of a Barbary ape really was found by archaeologists at Emuin Machae!

Beowulf

Beowulf is the first tale ever to be recorded in Old English. It survives as a poem in an early medieval manuscript dating from the late 10th century AD, although it was probably composed many centuries earlier. Myths and legends both local to the site and from further afield can be used to add colour to the past and as the basis for any number of different activities.




AESCHERE CALLS ON ME AND
BENDS ME TO SUMMON AID.
WULFGAR
AESCHERE
xvii


I VOYAGE THROUGH THE LANDS OF
THE DANES.
UNFERTH
HROTHULF
IVAR
BRIAN
WULFGAR
xviii


TO GEATLAND, THE LANDS OF THE
SLEEPING WYRM AND THE HALL
OF KING HRETHEL.
xix


WHERE I COME ON A YOUNG
WARRIOR NAMED BEOWULF.
BEOWULF
WULFGAR
xx


BEOWULF TELLS OF HIS
FATHER ECGTHEOW.
WULFGAR
BEOWULF
xxi


AND HIS FATHER'S FRIENDSHIP
WITH HROTHGAR.
HROTHGAR
ECGTHEOW
xxii


AND BEOWULF SAILS TO HROTHGAR'S AID.


AND THERE, BEFORE HROTHGAR, BEOWULF PLEDGES
TO FIGHT GRENDEL.


HROTHGAR IS PLEASED AND PRESENTS
BEOWULF WITH A GREAT SWORD
xxv


THE SWORD CALLED NAEGLING
xxvi

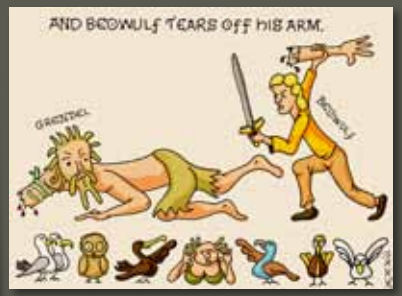

BUT AS WEALHTHEOW HANDS
BEOWULF THE SWORD, THE
ORACLE SPEAKS.
hoc
xxvii


BEOWULF FROM THE NORTH, I WISH, FOR I KNOW YOUR DESTINY.


NAEGLING WILL SERVE YOU WELL YET
YOU WILL STILL DIE IN BATTLE.
BEOWULF


GO NOW, FREE HROTHGAR AND PREPARE YOURSELF
FOR THE DAY WIGLAF STANDS ALONE.
hoc
BEOWULF
BRECCA
AESCHERE
WIGLAF
xxx


THAT NIGHT GRENDEL ARRIVES.
HEOROT
xxxi


AND BEOWULF TEARS OFF HIS ARM.
GRENDEL
BEOWULF


AND AFTER THE BATTLE BEOWULF PRESENTS
THE ARM TO HROTHGAR.
HROTHGAR
WEALHTHEOW
BEOWULF
GRENDEL
BRECCA
xxxii


THEY FEAST IN BEOWULF'S HONOUR.
WULFGAR
BEOWULF
HROTHGAR
WEALHTHEOW
xxxiii


HROTHGAR HANGS THE ARM HIGH IN THE HALL
TO CURE WITH THE OTHER MEATS.


BUT, AS HE DOES, GRENDEL'S MOTHER ARRIVES.


AESCHERE STEPS FORWARD
BUT IS KILLED.


BEOWULF AND HIS MEN CHASE
GRENDEL'S MOTHER TO
THE SWAMP.


WHERE BEOWULF FIGHTS AND KILLS HER.
XL


HROTHGAR'S LANDS ARE SAVED ONCE MORE.


BEOWULF NOW LEAVES HROTHGAR.

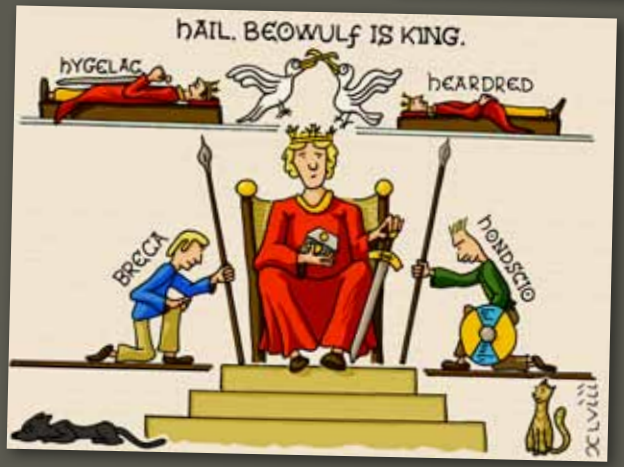

AND RETURNS TO GEATLAND.


WHERE HE IS REUNITED WITH HIS KING AND QUEEN.


BEOWULF PRESENTS THE TREASURE TO KING HYGELAC.

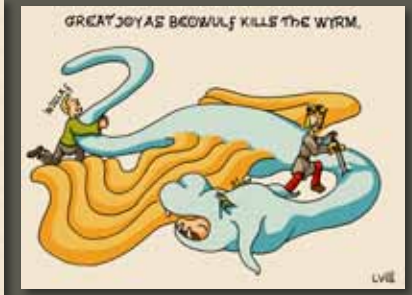

YET WOE AS HYGELAC IS KILLED AT RAVENSWOOD.


AND THEN HIS SON IS KILLED SOON AFTER.
BEOWULF


HAIL. BEOWULF IS KING.
HYGELAC
HEARDRED
BRECA
HONDSCIO
XLVIII


GEATLAND PROSPERS.


BUT NOT ALL ARE SATISFIED.
BALDUR



Further reading

The Celtic Myths: a guide to the ancient gods and legends, Miranda Aldhouse-Green (2015)

Early Irish Myths and Sagas, Jeffrey Gantz (1981)

Legendary, Dan Green and David Lyttleton (2015)

The Lore of Scotland, Jennifer Westwood and Sophia Kingshill (2009)

8. Lost and found: using local finds to add detail

For teachers and archaeological educators

This activity is based around the archaeological illustration of a Bronze Age funerary urn – the sort of pot found in burial cairns and cists throughout Scotland. The activity challenges children to use their observational skills and special measuring techniques to create their own drawing. Using objects and artefacts discovered at the site you have chosen to visit can be a great way of connecting with the past.

The background story

Almost 4000 years ago during the Bronze Age, a local Fife man or woman was cremated and their burnt bones and ashes interred within a pot and buried on the Cullaloe Hills in Fife. The burial lay undisturbed for thousands of years until it was discovered in the roots of a windblown tree by a sharp-eyed dog walker in the summer of 2012.

The replica Cullaloe urn

Within days, the Cullaloe Urn had been excavated, revealing a Bronze Age cinerary urn (of a type known as a 'Food Vessel') that had been filled with cremated bone and placed upright in a shallow pit. Without a dramatic burial cairn or stone cist with grave goods and offerings, it would appear that this was a simple burial – the body cremated on a funeral pyre and the remains placed in the ground by their family.

Although the urn itself was broken and fragmented, the pottery and bone fragments were sent for analysis and radiocarbon dating in the laboratory. Analysis of the cremated human bone enabled identification of an individual of adult age. A sample of bone submitted for radiocarbon dating returned a calibrated date of between 1886 BC and 1745 BC. A reconstruction of the pot was then drawn using the original broken sherds to help us to appreciate the urn's shape and decoration.

Although we will never know who the Bronze Age person was – we will never know their name or anything about their family – their burial was very similar to other examples from northern Britain at the time. It was clearly very important to be cremated and buried in an urn like this one.

When the Cullaloe Urn was discovered, only its rim could be seen poking out from the tree roots.

These were the only bits of bone and teeth to survive! Bones from part of the jaw were identified, alongside tooth roots and parts of a hand and foot. It was clear that the funeral pyre had been very successful – the bones were very well cremated. Unfortunately, nothing survived that could have told us if it was a man or a woman – and it was not possible to estimate what age they could have been at death. A sample of the bone was sent for radiocarbon dating – and the burial was found to be almost 4000 years old.

Excavation and laboratory analysis

The archaeologist, Douglas Speirs, said "excavating the urn was very difficult. Tree roots had knotted around the pot and even gotten inside! The urn had been buried standing in a small pit dug into the ground. It had broken into many fragments. I collected everything that I could see, took measurements and lots of photographs and put the burnt bone and potsherds in a big box."

Post-excavation specialist Dawn McLaren works in the laboratory. She said "I was very excited when the box arrived containing the burial! It is always very interesting cleaning and slowly picking apart this sort of discovery – you never know what you might find".

Illustrating the pot

Archaeological illustrator Alan Braby describes the process of illustrating a pot. "The method is relatively simple. The process uses tried and trusted methods and involves only the simplest mechanical tools, rulers, set squares and a set of accurate callipers."

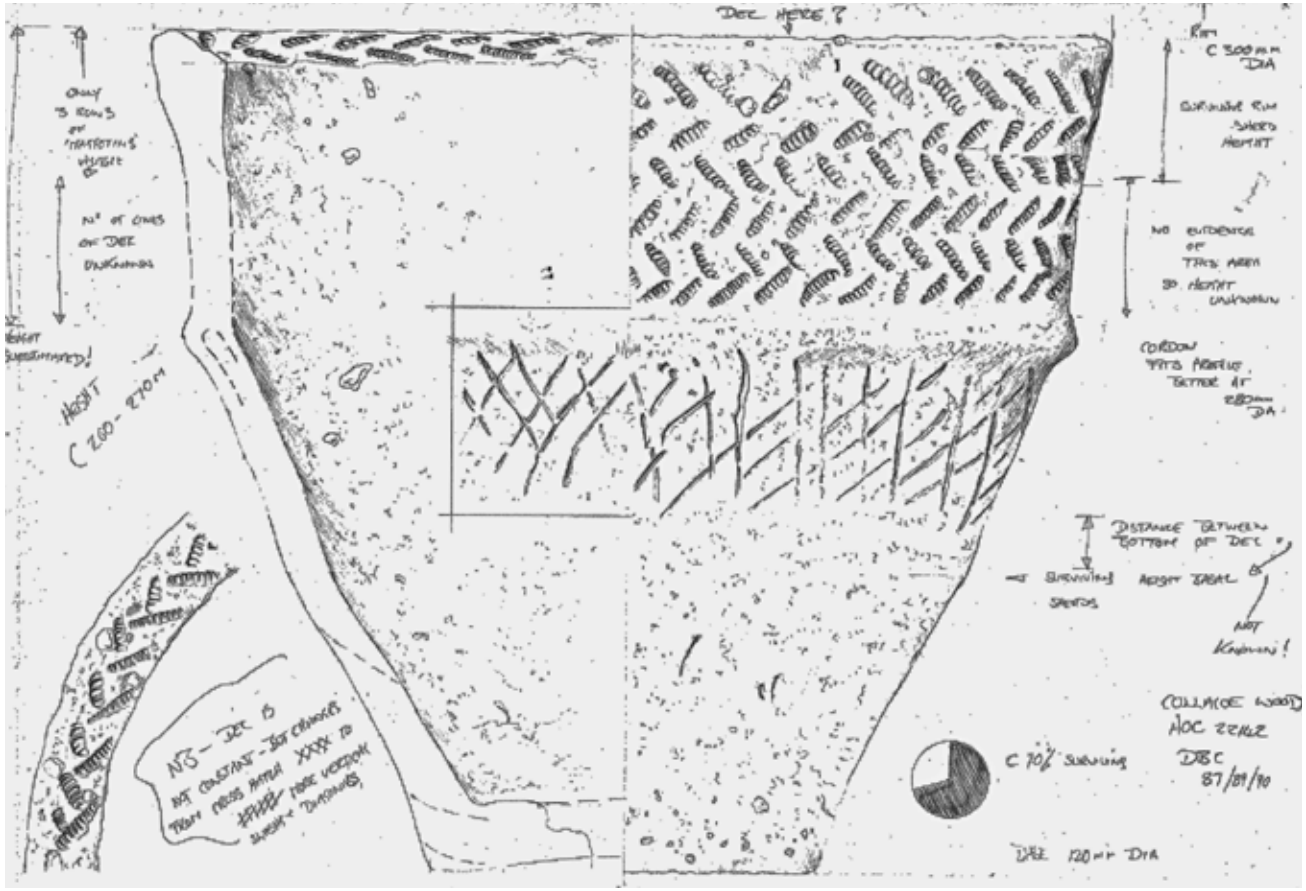
"Most pots recovered from archaeological contexts are broken, fragmentary and incomplete. This will be due to several factors: loss of parts due to ploughing, animal disturbance or earlier human activity. So I normally don't have the complete pot to illustrate, most likely just a bag or box of pot sherds. If I'm lucky, some of the rim and base sherds will have survived. These are the most helpful pieces in working out the size, shape and form of vessel."

Now it's your turn!

Explain the Bronze Age burial to the class, describing it's discovery, excavation and laboratory analysis. Show them the reconstruction drawing – only about 70% of the Cullaloe Urn was recovered, broken and in fragments. The artist had to carefully tape the matching pieces together (where possible) and then measure the rebuilt pot. Working individually or in pairs, challenge the children to try to do this for themselves! Each team will need drawing paper or drawing pad, a ruler, rubber, pencils, masking tape and the rim chart.
They will also need a small broken pot or bowl (a flowerpot with some decoration would be great) with at least 30% of the pieces missing. Make sure to sand down any sharp edges beforehand!

Preparation

Ask the children to lay out the sherds on their table and to try to see any of the sherds join.
If they do they can be temporarily joined together with masking tape. Explain that they should try to work out how many rim, base and body sherds they have and to try to work out their possible orientation. Then should they lay out the sherds in their relative positions ready to draw. They will only need to use a few of the pot sherds to be able to draw the pot – the rim, the base and enough of the body stuck together to be able to measure the height. However, if there is any decoration on the sherds this will have to be carefully drawn too.



This is Alan's preparatory sketch of the Cullaloe Urn. It was decided not to illustrate the individual pot sherds but to try and reconstruct the pot as if new (a process usually only done with complete and intact pots). This was done to enable a modern potter to have more information to enable him to create an accurate replica of the pot. The small pie chart lets the reader know how much of the original pot survived (almost 70%).

Sketch

Ask them to draw a preparatory sketch of the pot. They should think about what shape and size it could have been, and if it had any decoration.

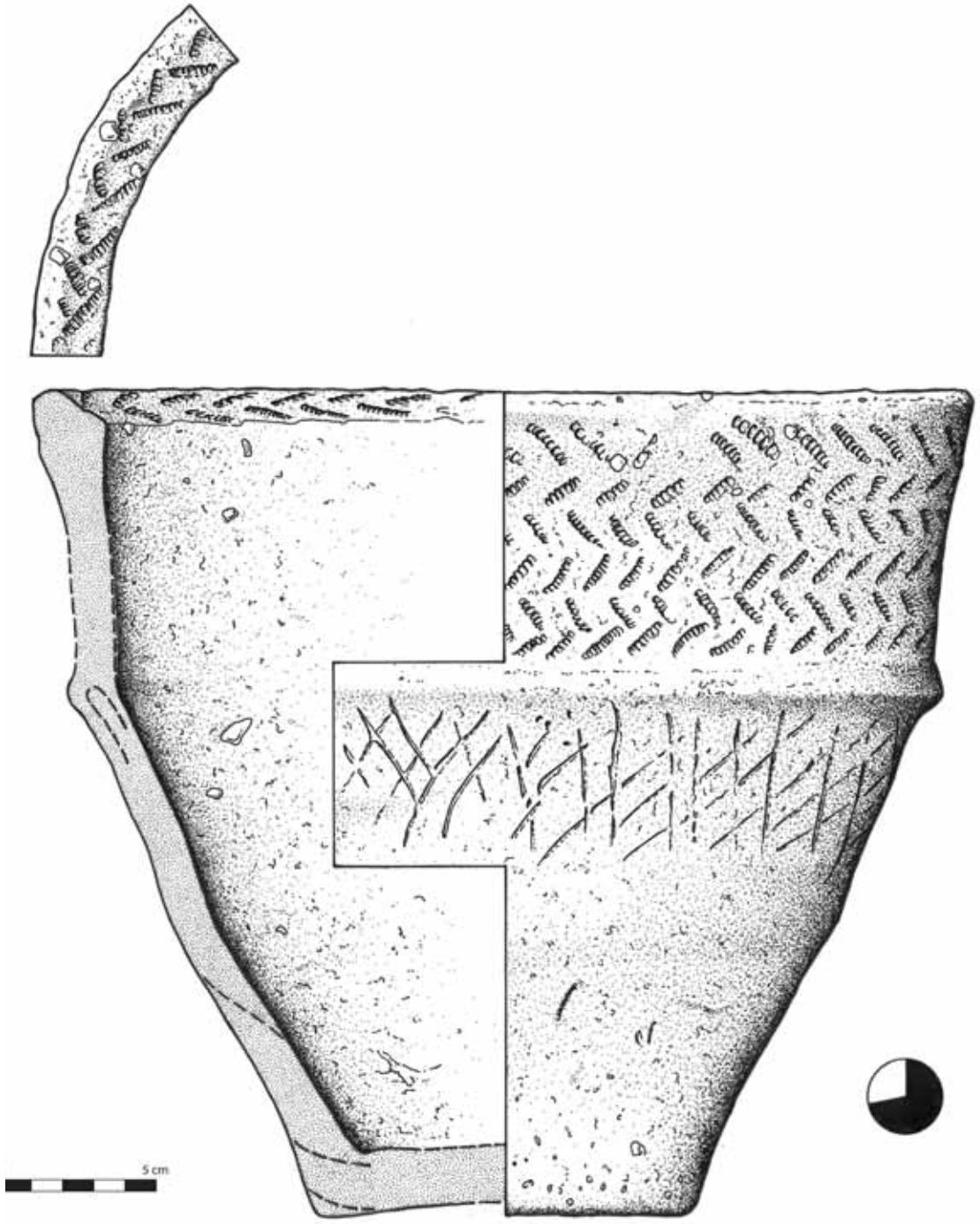
Measured drawing

When they are ready to begin the measured drawing, have them draw in pencil a large 'T' on the paper with a ruler; the horizontal line will become the rim and the vertical line will become the centre line of the pot. They can work out the diameter of the top of the pot by placing a rim sherd against the rim chart and getting the best fit. The rim can then be drawn in profile on the left side of the drawing – and the diameter across the top of the pot marked on the horizontal line. The outline of the sherd and its exterior view (and any decorations) can now be drawn on the right hand side. The basal sherds can be treated the same way. A complete profile of the pot, from rim to base, can be worked out using the stuck-together body sherds.

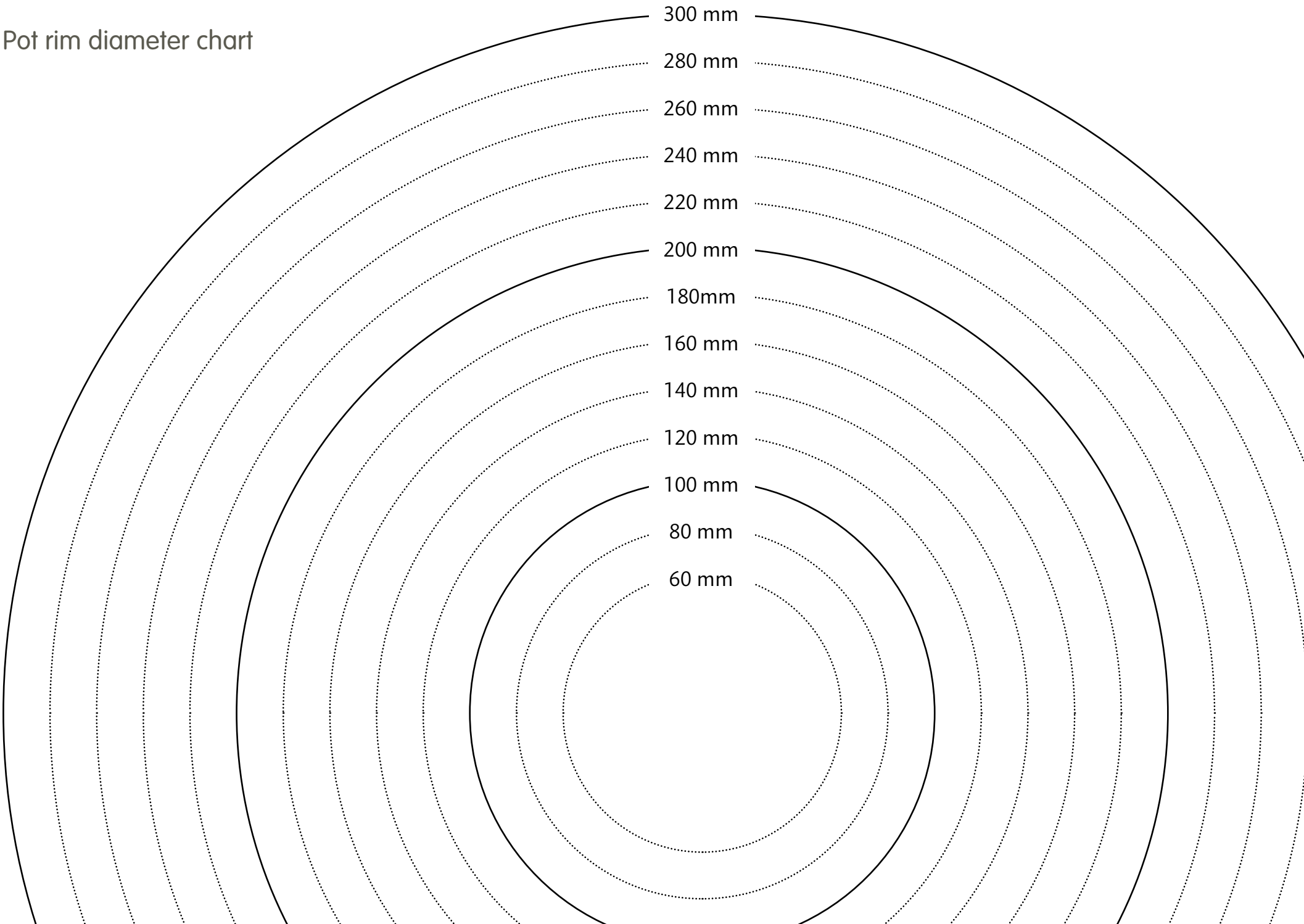
Final drawing

Finally, using a fine black felt tip pen or tracing paper, ask the children to carefully draw over their pencil work to create a 'clean' measured drawing. This process is known as 'inking up'. Don't forget to add a scale bar!

The children should now have their preparatory sketch, their rough measured drawing and their careful 'inked up' drawing. The series should demonstrate the importance of taking notes, their working draft and the final presentation.



Pot rim diameter chart



9. Spot the difference: photography and re-photography

For teachers and archaeological educators

Re-photography is a fun, creative, engaging and hands-on activity which highlights changes that have happened to a place over time. It compares historic photographs with the same places as they are today. A repeat photograph, or re-photograph is taken of the same scene shown in an historic image, capturing the changes which have occurred during the intervening years.

Re-photography involves finding and identifying historic images of familiar places, researching the sites shown, then going out with a digital camera to try to recreate the composition of your historic photographs to show the exact same place as it is in the present day. This creates a striking 'then and now' visual representation of a place and can be a creative starting point for further investigation into how and why places change over time.

Neolithic rock art at Achnabreac

A display of re-photography images makes an excellent exhibit to showcase and share all you have learned about the places you chose to investigate, and will prompt sharing of stories and memories from people who come to see them.

The value of photographs

Photographs are an incredible historical source for investigating places in the past. Every photo captures and preserves a moment frozen in time. They are primary historical sources (first hand evidence) that show what places and people looked like in the past. Of course, cameras were only invented within the last 200 years, so the extent to which you can 'travel back in time' might be somewhat limited. However, many historic photographers managed to capture images of places, sites and monuments before they were changed by the rapid developments of the 20th century.

Historic photographs can show us familiar places in unfamiliar ways. Comparing old and new photographs can provide dramatic and more subtle discoveries about how growth and development, change and reuse, or destruction and decay have affected the landscapes and places around us.

Sources of historic photographs

Luckily there are lots of easily accessible online sources where you can find historic photographs. Many villages, towns and districts have also had books of historic photographs published about them. Local museums and libraries look after thematic collections of historic photos about their areas, and increasingly these are being digitised and made available online. National organisations and universities have also undertaken digitisation programmes of their photographic collections, and these are searchable using online databases. Local and national newspapers also have substantial collections of historic images, and historic views can be shown on old postcards. You might even get lucky checking in that old shoebox of photos

Houses at Sandhaven, Culross being restored (1958)

Houses at Sandhaven, Culross (2016)

and postcards in the attic, or by rummaging through boxes on the shelves of a second-hand book shop or charity shop.

There are lots of useful online Scottish archive resources. You might also find it useful to start searching online by using a search engine to look up the term 'old photo' and the name of the place you are investigating.

Developing Skills

Re-photography can promote archaeological ways of thinking in the following ways:

- develop investigation skills by researching places using historical maps and images, and direct investigation of historic buildings;
- develop an understanding of the processes of development and change over time;
- appreciate survival and destruction process and understand how and why some historic buildings are conserved for the future;
- put creativity and imagination into practice by taking photographs, and by sharing them afterwards; and
- reflect on learning by sharing what has been discovered with other people and finding out their perspectives and stories.

Doing Re-photography

Equipment

To undertake a re-photography project you will need a copy (a printout will do) of an historic photo and a camera – and that's it! Most mobile phones have excellent cameras and are more than suitable for an activity like this. Make sure beforehand that you are confident in how to use the camera's features in order to save time when out in the field. The digital camera in your phone is far more complicated than the equipment historic photographers used to take their photos!

Activity plan

Once you have acquired a copy of an historic image you might like to begin your activity by identifying its location. Historic and modern maps are what you will need for this. The National Library of Scotland's Map Library has a wide online collection of digitised historic maps; perhaps the most useful of these are the historic Ordnance Survey maps. Ordnance Survey maps of Scotland, England and Wales are available dating from 1843 at a variety of scales. The Ordnance Survey 'six-inch to the mile' 1st edition maps are highly recommended.

The NLS online map interface has a slider to change the transparency of the historic map and show the location on a Google satellite photograph underneath. You can use these tools to discuss the level and impact of change across time. They will also help you find out where you need to go in order to take your re-photography image. Finding the place in the photo may take some detective work if the place in your historic image has changed a great deal, but usually old buildings, streets and landscapes can be identified without too much trouble. Thankfully, many photographs in digitized collections have been accurately catalogued to describe where they are.

The Study, Culross prior to restoration (1930s?)

The Study, Culross (2016)

Because of changes which people have made to places over the years it can sometimes be a challenge to pinpoint a location immediately. Precise observation skills might be needed to match your historic photo with the present day scene. Look for architectural details on any pictured buildings, identify landmarks and principal features, look at the shape of the landscape shown, find things in the present day which have survived since the photo was taken. All of these things can provide clues to help you pinpoint the place you are looking for.

Observe and discuss

As you explore outdoors to find the place shown in your historic image you could use the opportunity to look about you and think about how the scene has changed in the intervening years. What is the same? What has changed? Why might these changes have happened?

Safety first!

Be aware of any hazards around about you as you prepare to take you re-photograph. You may need to be aware of traffic on a road which has been built since the historic photo was taken. Has a building decayed over time and got into a dangerous condition? Be careful and sensible and assess any risks.

Take your re-photograph

Look closely at your historic image and try to discover where the original photographer stood in order to take their shot. Once you know the approximate location, try to stand at that same spot to take your re-photograph. Try to match your modern photo as closely as you can with the scene shown in the historic photograph. As camera technology has changed over the years, and as the quality of lenses has improved, it may not be possible to capture exactly the same scene with your digital camera. A close approximation is an excellent result.

Share your results

Many people love to look at old photographs, to reminisce, tell stories and make new discoveries. A display of re-photography would make an excellent talking point and an opportunity to share history more widely. It can also build connections within a community. You are almost guaranteed to unearth some interesting memories!

The photography undertaken by archaeologist Angus Graham in 1949 is an exceptionally useful record of the broch of Caisteal Grugaig. The interior elevation of the entrance passage is shown here in 1949 (on the right) and in 2011 (on the left).

10. Timelines with tapes

For teachers and archaeological educators

We are used to hearing terms such as the 'Ice Age', 'Mesolithic' or 'Bronze Age'. But what do they mean, and how long ago were they? This activity gives some suggestions for helping pupils develop a sense of chronology and time.

People have been living in Scotland since the end of the last Ice Age, around 10,000 years ago. Transitions between different chronological periods, technologies and cultures were often gradual, such as the introduction of farming in the Neolithic, or the introduction of bronze during the Late Neolithic / Early Bronze Age. Divisions are not absolute and transition periods should be considered as blurred.

However, they remain useful as descriptive tools – and specific events such as the Roman occupation of the south of Scotland can sometimes leave distinct archaeological remains. The 10,000 years of human settlement mean that the earliest remains have often been obscured or destroyed by later human actions. This means that most archaeological sites survive from the recent past. But significant built remains and museum artefacts survive from all periods, all contributing to our understanding of Scotland's past.

Creating a timeline

Explaining 10,000 years and concepts such as chronological periods and generations can be difficult for children to comprehend. Using a timeline, time can be explored to scale, with single events set alongside periods – and transitions can be visualised more easily. Use a 10m measuring tape to represent 10,000 years, with every metre representing 1000 years, every 10 centimetres representing a century and every centimetre representing a decade. You can draw this onto a long wall chart, or use coloured ribbons or cords to indicate periods, entwining the colours to indicate transition periods. You can also add pictures and labels to your timeline, or you could lay out the cords first and ask the children to measure them.

BC and AD?

Pupils may well have heard of the terms BC and AD. These terms refer to the birth of Jesus Christ and are the basis of the Christian (or Gregorian) calendar, today's most widely used civil calendar. The Christian calendar begins at 1 AD and marks the birth of Jesus Christ. Although BC means 'Before Christ', AD does not mean 'After Death' but 'Anno Domini', Latin for 'In the Year of our Lord'. There is no year zero: the year AD 1 immediately follows the year 1 BC. However, we suggest that you ignore this fact for the purposes of the timeline! The Christian dating system was devised in AD 525, but was not widely used until after AD 800.

If you are keen to enable an exploration of dates and encourage understanding of years BC and AD, you can stretch out two 10m measuring tapes to 8m and 2m respectively, with 0m meeting in the middle. You should have a line running from 8m to 0m (representing 8000 BC – 0 BC) and 0m – 2m (representing AD 0 – AD 2000). Explain that every metre represents 1000 years and that 0m is the start of the Christian calendar.

Metalworking in bronze, new ceremonial monuments such as stone circles and new funerary practices mark the **late Neolithic / early Bronze Age transition**. However, the transition period was not clearly defined and society only slowly began to change. You can entwine coloured cords to indicate gradual transition periods.

Populate your timeline!

You could use LEGO® mini-figures to show the different periods, peoples and characters in the timeline. It may be best to start with a figure that everyone recognises such as a Roman soldier. You can use real LEGO mini-figures (such as the Roman Legionary) and also create your own (such as the Celtic Warrior) – or use the cards provided here to start you off.

You can also use ribbons or cord to indicate periods (such as the Mesolithic), entwining them where they overlap (such as at the Mesolithic / Neolithic transition). You can also add your own mini-figures, pictures or post-it notes to show other events or characters you have been studying. Build on previous work or experience, perhaps by highlighting topics (such as the Ancient Egyptians) or holidays (such as visiting Hadrian's Wall, Stonehenge or even Pompeii).

Timelines

8000 – 4000 BC (8m – 4m)

After the ice retreated, woods and forests covered most of northern Europe. This period is called the **Mesolithic** and it lasted for over 4000 years. People lived close to coasts and rivers. We call them 'hunter-gatherers' because they were skilled at hunting, fishing and gathering nuts and berries. They were always on the move, following the migrating herds of reindeer and making use of seasonal resources. They made use of nature to make their tools and clothes and camped each night in temporary shelters. The book *Wolf Brother* (by Michele Paver) is set in the Mesolithic.

4000 – 2000 BC (4m – 2m)

Around 4000 BC a new way of living was introduced to the British Isles. People in the Middle East had discovered farming, by domesticating animals and growing particular types of plants. This meant people no longer had to rely on hunting and gathering and they could settle down to farm. This period is called the **Neolithic**. The settlement at Skara Brae in Orkney was built during this time – and the many chambered tombs that can still be found in Scotland were built during this period. *The Boy with the Bronze Axe* (by Kathleen Fidler) is set in Skara Brae.

2500 BC – 1000 BC (2.5m – 1m)

In the **late Neolithic / early Bronze Age** transition (c. 2500 BC – 2000 BC) a new technology was introduced – metalworking in bronze. However, the transition period was not clearly defined. Society slowly began to change, with more individuals visible in the archaeological record (such as the Amesbury Archer). Ceremonial stone circles are the definitive monument of the **Bronze Age**. They were built in many different shapes and sizes with many regional variations. The most famous stone circles in Scotland are probably the Ring of Brodgar in Orkney and the stones of Calanais on Lewis. Ceremonies may have involved fire and cremations.

1279 BC (1.27m)

Ramses the Great is considered to be the most powerful pharaoh of the Egyptian *'New Kingdom'*. Egyptian civilisation was made possible by the rich agricultural land of the Nile delta – farming enabled cities to develop and resulted in many social and technological advances. The Egyptian period lasted for over three thousand years, from 3150 BC (the first pharaoh) to 30 BC (when Egypt under Queen Cleopatra became a Roman province). The famous Great Pyramid of Giza was built around 2550 BC, at the same time as we were constructing stone circles.

1000 BC – AD 500
(1m on tape 1 – 0.5m on tape 2)

In the **Iron Age**, the native population in Scotland adopted new technologies, aspects of culture, ideas and perhaps languages from the peoples that they traded with. They were known as **Celts**. Native craftspeople mastered iron smelting and smithing and decorated their metal work with exquisite designs; they loved intricate decoration and ornament. Celtic people wore colourful dyed and patterned clothes; warriors wore golden torcs round their necks and fought from war chariots drawn by horses. Iron objects, including cauldrons and swords, were thrown into water – in lochs, rivers and bogs – as 'votive' offerings to pre-Christian gods and goddesses.

71 BC (0.07m)

Spartacus was a famous Roman gladiator (111 BC – 71 BC). The Roman historian Appian says he was *"a Thracian by birth, who had once served as a soldier with the Romans, but had since been a prisoner and sold for a gladiator."* He was a heavyweight gladiator called a *murmillo*. These fighters carried a big oblong shield (known as a scutum), had amazing huge helmets (*cassis crista*) and used a sword with a broad, straight blade (*gladius*). In 73 BC, Spartacus was among a group of gladiators who plotted an escape. The subsequent uprising inspired a famous Hollywood film starring Kirk Douglas.

AD 83 (0.08m)

The **Roman** military presence in Scotland is really better considered as a series of campaigns. It began with their advance into southern Scotland under Agricola in the AD 70s and their defeat of the major Scottish tribe known as the Caledonii at the battle of Mons Graupius in AD 83 (the first recorded battle on Scottish soil). The Roman return to Scotland in AD 139 saw the construction of the Antonine Wall, abandoned upon their withdrawal to Hadrian's Wall in the mid AD 160s (although their influence upon Scotland continued). Finally, a major but brief campaign was conducted by Severus between AD 208 and 210.

AD 565 (0.56m)

There is a story that the **Pictish** king Bridei, who is supposed to have lived in the fort of Craig Phadrig above Inverness, was visited in AD 565 by the Irish monk St Columba, who hoped to convert the Picts to Christianity. The Picts spoke a different language of Celtic than Gaelic and we do not know exactly how 'Bridei' was pronounced. Perhaps it was an early form of 'Bryce' or 'Bruce'?

AD 795 (0.79m)

The early Christian monks lived in monasteries – and one of the most famous in northern Britain was on the island of Iona on the west coast of Scotland. This monastery was one of the first to be attacked by the ferocious **Vikings** in AD 795. Over the next 200 years the Vikings continued to raid – but they also came to trade and to settle with their families, farming land and raising animals. This Viking woman has two oval 'tortoise' brooches and is very well dressed – she must have been very wealthy. Perhaps she lived in the Norse earldom of Orkney?

AD 1606 (1.60m)

William Shakespeare was born in AD 1564 and died in 1616. He is one of the most famous writers in the world and his plays and poems are still being performed and enjoyed. He wrote comedies, histories, tragedies and romances. One of his most famous tragedies was that of the Scottish king Macbeth, written in AD 1606.

AD 1937 (1.93m)

The famous American aviation pioneer **Amelia Earhart** was the first woman to fly solo across the Atlantic – this took her nearly 15 hours of flying. She is also a character from the film, *Night at the Museum.*

AD 1969 (1.96m)

Neil Armstrong became the first man on the moon. He was part of NASA's famous Apollo 11 moon landing. When he stepped off the Eagle landing craft and onto the moon he said *"That's one small step for man, one giant leap for mankind".*

Explaining generations

A generation can be considered as both a group of people born at a particular time (a social generation) and as each single step in a family's line of descent from an ancestor (a family generation). In developed nations, the average family generation length is around 25 to 30 years; in less developed nations, the average family generation length around 20 years.

Explaining time in terms of generations can be a great way for children to understand and connect with people in the past. Remember, they and their brothers and sisters form a single family generation – but could be of different social generations.

You can create a timeline to help children understand the timespans involved. Measure a length of 117cm and mark the year 1900 at the left hand end and 2017 at the other. Mark the start of each decade in between (one year is represented by 1 cm). The following dates can be marked on, or any other dates relevant to your pupils or to previous classroom work. If you decide to use the musical theme, you may have to explain what a 7" single actually is!

From 7" to MP3 in 67cm

1950 (50cm)

If your Grandma is in her sixties, it means that she was born in the 1950's. The 1950's were famous for *rock and roll* and were when Elvis Presley began to perform. The 7" vinyl single was king. Everyone listened to the radio, but not everyone had a TV – and they were only in black and white (and only had two channels!).

1967 (67cm)

When the Beatles released *Sgt. Pepper's Lonely Hearts Club Band* (thought to be one of the most influential albums ever made) there were no computers and no internet. However, TV was now very popular – and available in colour!

1975 (75cm)

If your Dad is in his forties, it means that he was born in the 1970's. Your parents and your grandparents are different generations.

1981 (81cm)

MTV was launched and CDs replaced vinyl records. Computer games were invented. Imagine: before the 1980's there were no computer games or music videos!

1995 (95cm)

If your big sister is in her twenties, it means that she was born in the early 1990's. Mobile phones and the internet began to be available in the 1990's. Before the mid 1990's there were no mobile phones!

2002 (1.02m)

If your big brother is in his teens, it means that he was born in the early 2000's. The first iPod was released in 2001 and digital music (streaming / MP3s) became popular. You and your brothers and sisters form a single family generation – but could be of different social generations.

11. All welcome: making outdoor archaeological learning inclusive and accessible

For archaeological educators

Archaeology is a rich and diverse subject that should be accessible for all. Outdoor archaeological learning can be both fun and engaging and good for your health and mental wellbeing. It should also be inclusive for all people, including those with disabilities and additional needs. Everyone should have the choice to participate in the activities and that choice should be made with all appropriate information being available.

In seeking to make your event or activity accessible you will need to consider the format, the risks and any adaptations that may be needed for someone with a disability. Risk assessments should be undertaken as usual, but where a participant has a known disability or additional needs, a specific risk assessment for that individual's needs may be required.

However, you may not know in advance about a specific individual's access requirements. The challenge is to make outdoor archaeological learning inclusive and accessible without having to make specific adjustments – to plan and prepare for accessibility in advance.

The following list highlights some issues for consideration, together with suggestions to help you make outdoor archaeological learning accessible to as wide a range of participants as possible.

Print material

If your activity involves any printed material, large print, audio format and electronic copy should be available on request within a reasonable timescale. This enables people with sensory impairments such as sight loss and hearing loss to access the resource in a way that is most appropriate to them. It can also assist with people with learning difficulties, as having the resource on a different colour of paper can drastically improve access for people with dyslexia. Technology can help and there are many software programmes available that can verbalise or enlarge the content.

Terrain

For members of the public with sight loss or mobility issues it is essential to use flat and clear paths where possible. It would also be beneficial to produce a ground guide that notes any changes in the ground underfoot. For example, it would be essential to forewarn participants of an undulating path, or a change from hard clay to sand or mud. Rest stops would also benefit those with conditions that limit walking; these can be unobtrusive and something as simple as a clearly signed tree stump would work. Gradients should also be noted on the ground guide, as this gives people information about the terrain and possible conditions before they reach it.

Signage

If your activity involves any signage, good contrast is essential. Make sure that all signs are clear with good contrast between the background of the sign and the wording. Be mindful of the sign's colour and its appearance amongst the foliage, as a green sign will blend into any surrounding vegetation and could be missed by those with sight loss.

Audio material

Any audio cues used in the outdoors need to be accompanied with a printed text. This ensures that those with hearing loss will be able to participate. Where talks are taking place, a script or summary could be made available for participants with hearing loss – and presenters should speak clearly, facing the audience to enable lip reading. Audio cues and descriptions can also be very useful for those with sight loss as they can be used to describe both the activity and the terrain.

Non-verbal communication

To help people who use non-verbal communication methods such as communication books, it may be possible to have symbols available relevant to the activity to enable full participation. Participation may be in the form of pointing to specific symbols and sounds.

Communication book for non-verbal communication

Touch and smell

It is also important to not underestimate the importance of touch and smell as both can help us better understand our surroundings. For some it can be the only way that they can interact with the world. Try to make as much of the activity as possible a tactile experience. Maps can be raised and artefacts and replica objects can handled. However, some people may not have dexterity in their hands or be unable to transmit the stimulus into something meaningful through de-sensitivity of their hands. In cases like this some people use other areas of the body to touch. Some people will use their feet to feel, others will use their elbows, noses or even tongues. Be supportive of such techniques and do not unintentionally exclude that person.

Memory

If the participant can compare a task or object to something that they have already experienced, this can provide a useful aid in identifying the task they are engaged in. Smells, taste, touch, sight and hearing all play a role in memory and each of these can be used as cues. Where someone has an impairment of any of these senses the others can be used to complete the picture.

With careful and considered preparation, outdoor archaeological learning can be inclusive and accessible. Try to meet the needs of prospective participants in a positive and empowering manner. Never be afraid to ask questions and always seek to improve accessibility.

12. How did it go? Evaluating success

For archaeological educators and other group leaders

Engagement with archaeology, especially outdoors, is a multisensory, emotive and often personally revelatory experience. In order just to capture a fraction of this experience requires careful evaluation planning and a variety of methods exist for evaluating activities and projects. Fundamentally, the methodology usually entails a mix of approaches depending on the objectives of the evaluation. These approaches may combine consultation with observation and often seek to understand the processes of engagement as well as the impact.

Consultation could include the use of interviews, with individuals or groups on site using carefully structured questions, as well as self-completion questionnaires. Observation could include listening in on conversations and recording behaviours during a session. Careful ethical scrutiny of these approaches is always required.

Ultimately, evaluation is about seeing how far you are achieving the aims of a particular project or activity. It's about understanding and sharing the how and why of what works well and what was less successful.

The results become useful when you are able to act on them either to modify your current approach or to help you to develop new projects in the future. Of course, much evaluation also proves useful in reporting to funders and other stakeholders. Data-rich numerical, or quantitative evaluation (addressing questions such as 'how many' and 'how much'), is frequently used to record the outputs from a project. However, the qualitative dimension of evaluation is often much more informative and touches on those 'intrinsic' outcomes which are sometimes seen as hard to capture.

Simple checklist for evaluation

- Identify and recruit user group;
- ensure you have agreed and understand the project objectives;
- decide what it is you actually want to find out;
- decide what you will do with the information;
- identify and gather your resources, including who is going to do the evaluation; and
- decide on your methodology – a range of consultation and / or observation approaches and a mix of qualitative and quantitative data.

Machrie Moor

Designing the 'perfect' evaluation

In relation to the users being evaluated, think carefully about how they may be encouraged to respond. There is no perfect form of evaluation because your approach should always be based on your particular evaluation goals. However, there are approaches to consultation and observation that work well and have been tried and tested over many years.

For many school age children, and even adults, the 'thought or word bubble' or 'memory cloud' (depending on what stage your evaluation is occurring), provides an opportunity for open ended responses and allows for drawn as well as written feedback. You may want to ask a group leader or teacher to help gather the data after a session or visit or conduct your own follow up visit. At the same time it is also worth gathering teacher or group leader testimony. You could use a self-completion questionnaire targeted at adults, which asks pertinent questions about the organisation and administration of an activity as well as the learning outcomes. You may also want to use other work generated by a user group as a result of the visit to help identify learning outcomes. For example, creative writing or artwork prompted by the visit can be useful for understanding a user response.

When to evaluate

The timing of your evaluation needs also to be carefully thought through. You may want to establish what users already know or feel about a space or concept before the activity takes place. This *front-end evaluation* establishes baseline data allowing you to examine changes in users' knowledge or skills or attitudes for example. It can also be used to establish how relevant your project is to the users. One type of evaluation that examines the change response is known as *personal meaning mapping*. This allows you to use interviews or other forms of consultation both before a project or session is delivered and then again after the event.

Formative evaluation describes the work done whilst actually engaged on a project or scheme and often utilises prototyping and testing to modify an approach. However, *summative evaluation*, which falls towards the end of a session or takes place on project completion is the most common form of evaluation. A mix of approaches allows for a balance of perspectives and a deeper understanding of the project's impact.

Generic Learning Outcomes

Never forget to try and understand the experiential component of any session or project. The social and emotional impact is as powerful as any purely knowledge-focused outcome. Children will remember and engage with the most obscure and unintended elements of a visit. The weather, the humorous incidents and most certainly the emotional complexity of getting to grips with learning all feature in the feedback that is captured in memory clouds and word bubbles.

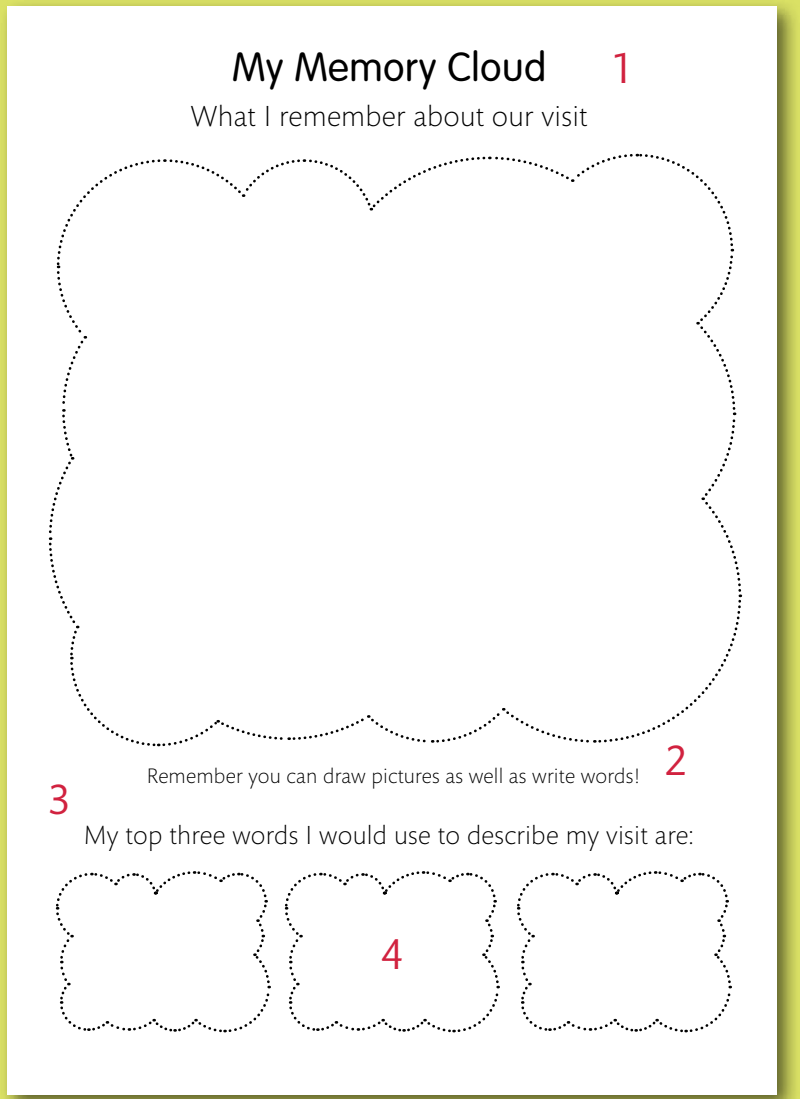
All of this feedback can be 'coded' or sorted into categories of response. You can choose your own emerging categories, based on the common themes that appear as you review the evaluation; or you can use pre-existing methods for categorizing learning outcomes, such as the heritage industry's Generic Learning Outcomes, which allows for expressions of 'enjoyment, inspiration and creativity' as well as 'knowledge and understanding' as a valid learning outcome.

The Generic Learning Outcomes were developed by the University of Leicester for the Museums, Libraries and Archives sector in 2003 and have gained widespread acceptance throughout the heritage sector as an essential tool for evaluation.

The 'Inspiring Learning for All' framework provides a 'Measuring Learning Toolkit' which uses Generic Learning Outcomes (see **www.artscouncil.org.uk/advice-and-guidance/inspiring-learning-all**).

Constructing your evaluation form

There are many ways to evaluate an activity. A 'memory cloud' or 'thought bubble' can help gather open-ended responses, often at the end of a project, and is especially useful for generating feedback from school age children. Once you have gathered the data, ensure you plan in time to analyse the results and then share your findings.



1
Keep text short and simple; and offer ownership by using words such as 'you', 'I' or 'my'.

2
Increase the opportunity for meaningful responses by offering different ways of responding; drawing and writing together form useful data for analysis.

3
Structure your evaluation to enable you to gather additional information but don't overtax the individual or group. Keep instructions simple.

4
Provide additional 'writing frames' to allow further reflection on the experience. Generate lists of words that can be coded, using Generic Learning Outcomes or your own emerging response categories. Generic Learning Outcomes divide learning into five measurable areas: Knowledge and Understanding; Skills; Attitudes and Values; Enjoyment, Inspiration and Creativity; and Activity, Behaviour and Progression.

The Very Archaeological Cut Outs #3

Roundhouse

Instructions

1 Cut out the base, roof support timber frame and thatched roof along the black lines.

2 Fold along the blue lines of the base. Turn each strip inwards and stick the grey tab down in the dark brown ring to make a turf bank.

3 Pinch the top of each bank section to give it a curved top. This is the foundation of your round house. You can still see these foundations all over Scotland – they are known as 'hut circles'.

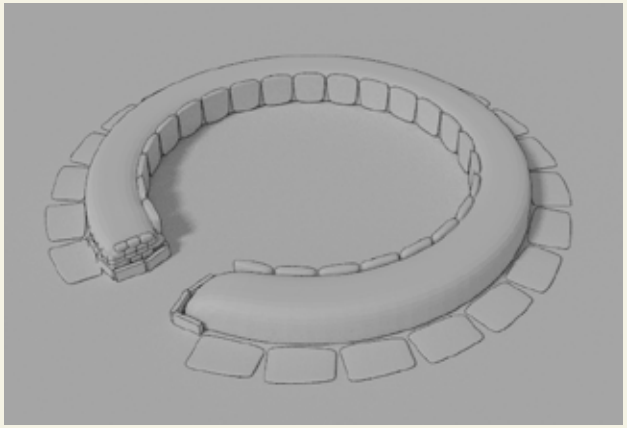
4 Roll the roof support timber frame into a tube and secure it using the grey tab. Cut out the entrance.

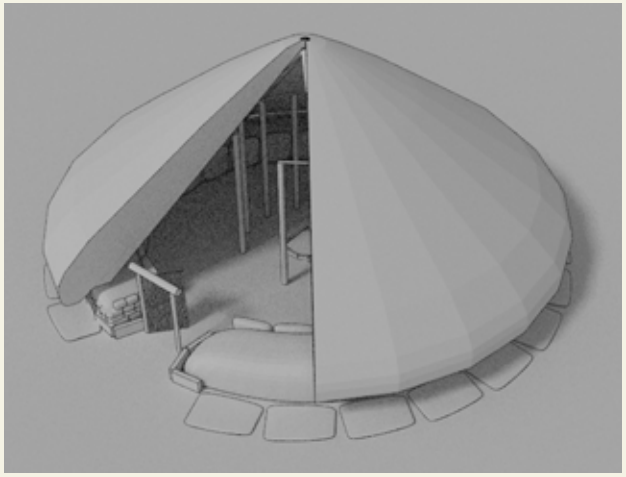
5 Place the completed tube in the centre of your bank with the hearth in the middle and the entrance aligned with the bank entrance.

6 Roll the roof into a cone shape and secure it using the grey tab.

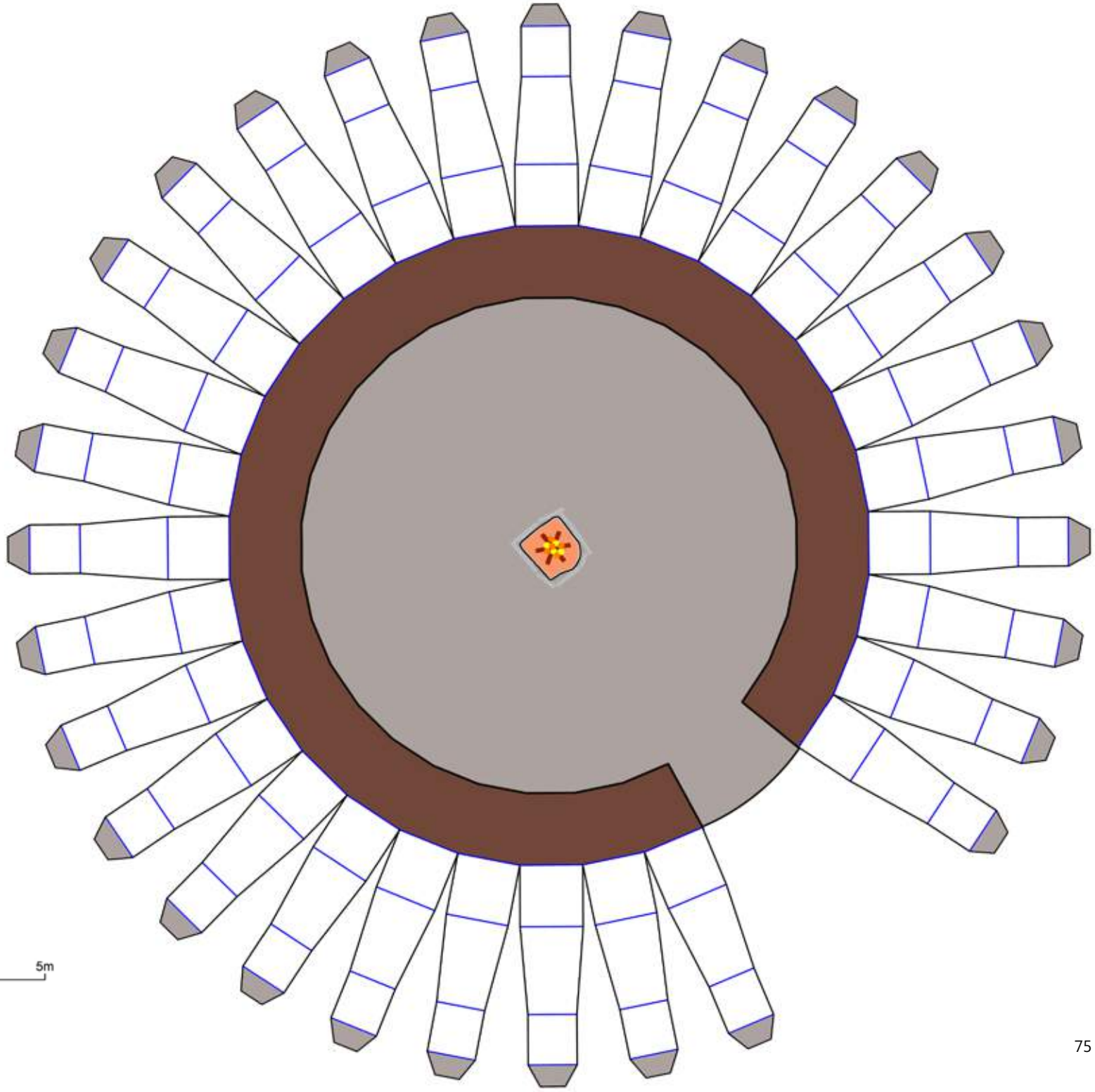
7 Place the finished roof onto the turf bank and timber frame.

8 Admire your roundhouse!





Roundhouse base



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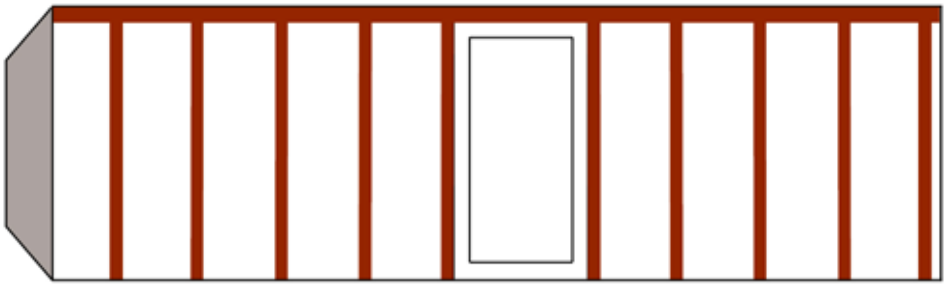
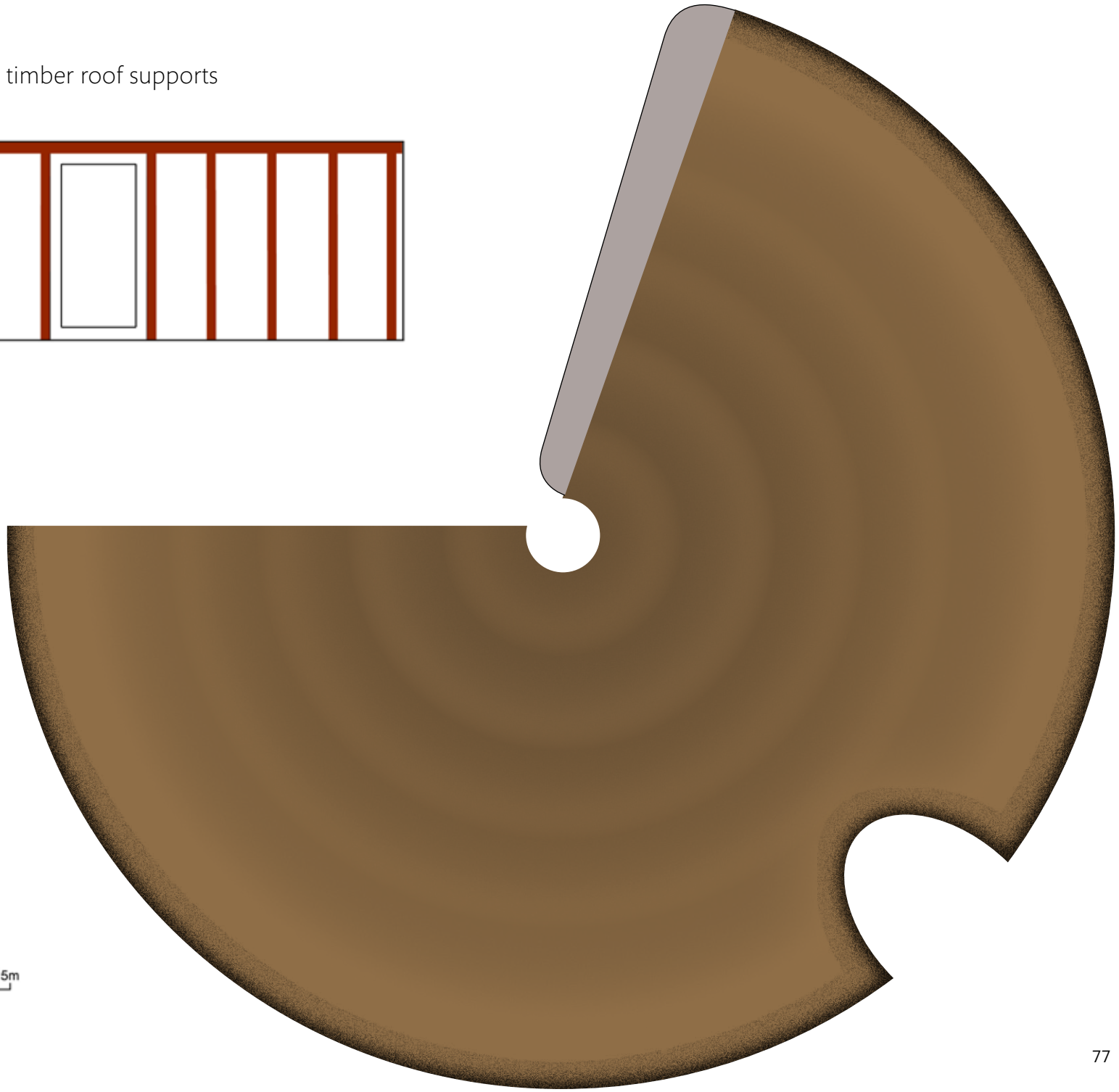
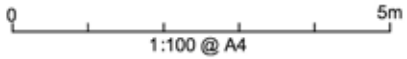
Roundhouse thatched roof and timber roof supports







13. Place-based learning and the Heritage Hero Awards

For teachers and archaeological educators

If this resource has inspired you to embark on an outdoor, place-based learning project then Archaeology Scotland's new Heritage Hero Awards are here to support you. They offer a framework, a focus and a reward element for your project.

How do the awards work?

The awards are about heritage: everything that has survived from the past into the present. Objects, documents, landscapes, buildings, even songs and stories. Although this means that a Heritage Hero Award does not have to been gained through outdoor learning, we do encourage groups to use them as part of an outdoor learning experience. Projects could involve anything from researching a Bronze Age burial site to recording the gravestones in your local graveyard and everything in between! Previous projects have included investigating the ruins of a medieval castle; recording the remains of a WWI Prisoner of War camp; and championing a local stretch of canal. Each of these projects has focused on what is local and relevant to the groups – sites that are a walk, or at most a short bus ride away and have local relevance.

There are five stages each project needs to include to gain the award. You don't have to complete the sections in order and there is no particular time you have to dedicate to any one section. The awards are open to everyone from primary school upwards, and there are five different levels. There are some fantastic resources available on the Archaeology Scotland website to support you in delivering all of the five stages suggested below.

Plan

The first part of the award is to plan what you want to do. The key thing is that you involve your participants as much as possible in the planning. This might be right from the start (deciding what site you are going to look at), or it might in the details of what you are going to do on site (and how you are going to share your knowledge). It is all about ensuring that the project is really owned by the group and that they all have a chance to show what they can do.

Investigate

The focus here is on finding out more about your site. This might be through reading books and websites, or it might be through looking at photos, maps and plans. Visits to local libraries, museums or archives might be useful. This section also includes any skills development. Think about how are you planning to record your site – are you going to measure, draw and / or photograph it? If you practice this before you get on site, it all counts as part of the 'investigate' stage.

Engage

Engaging with your site is the most exciting part of most projects! What you do is the big question (and this depends on many factors). What is your site, what interests your group and what equipment and expertise do you have? It is relatively easy to carry out many archaeological activities (and doesn't require a lot of equipment), including surveying and mapping sites and sketching and photographing buildings. Aerial photography using kites can create spectacular images and pick

up features we miss from the ground. There are also several free online applications that can turn photographs of features or whole buildings into 3D models. If you want to take a different approach, you could look at the condition of a site and make suggestions for looking after it. You could do a litter pick, investigate accessibility issues or plan how to make the site more welcoming. Just make sure you have permission for anything you intend to do!

Inspire

So your group has researched and investigated your site – but what do you want to do with this knowledge? Here you can all be as imaginative as you want. It might be about creating a blog or webpage, or an exhibition in your school or local museum. You might want to create a piece of performance or artwork related to it. Alternatively, you might want to organise an event to celebrate your site and your work. You could deliver guided tours, or an audio, video or written guide. You might want to write an article for your school newsletter or local newspaper.

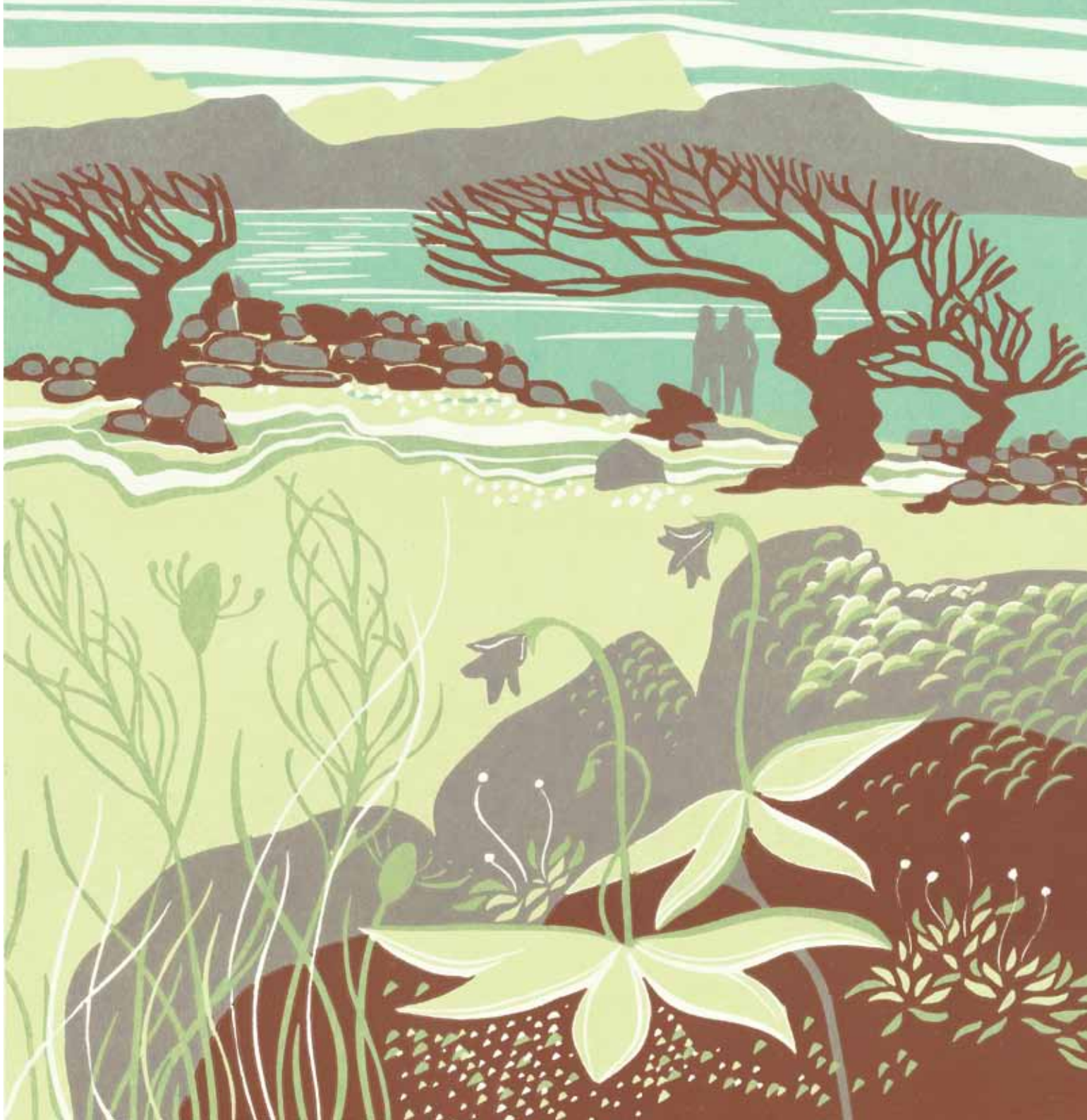
Reflect

This is your chance as a group to consider the success of your project and what you have learned from it. Are there further things you would like to do? What skills have you developed and how would you like to use them in future? This is also the perfect opportunity to complete the short form, summing up what you have done to achieve the award.

Find out more

Want to know more? You can find the Archaeology Scotland *Heritage Hero Award Handbook* (and much more besides) at **www.archaeologyscotland.org.uk/learning/Heritage-Hero-Awards**.

The past echoes in the present at the ruined township of Leitir Fura on Skye, set within native woodland overlooking the Sound of Sleat. A true sense of place can be achieved through appreciation of landscape, history and natural heritage. By exploring the evidence that our shared past has left in our culture and environment, outdoor archaeological learning can help develop critical thinking skills, inspire creativity and encourage discussion and teamwork.



14. Further Resources

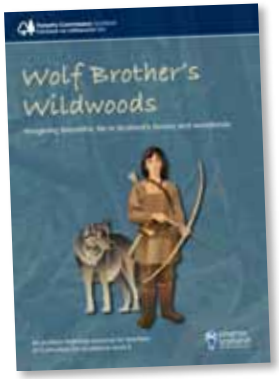
The Picts

A learning resource for teachers of Curriculum for Excellence Level 2

The Picts are one of Scotland's greatest mysteries: an apparently vanished nation, chronicled by others but not by themselves.
The Picts speak to us only through their inspiring creativity – their marvellous carved stones, their monumental hillforts and their beautiful jewellery.
This resource provides a great introduction to a topic rich in imagination, creativity and enquiry.
It helps to bring the Picts alive through a series of classroom and place-based activities (particularly focused on their hillforts and symbol stones) and aims to encourage teachers and pupils to explore their local museums, archaeological sites and historic monuments.

Wolf Brother's Wildwoods

Imagining Mesolithic life in Scotland's forests and woodlands



An outdoor learning resource for teachers of Curriculum for Excellence Level 2

This resource has been produced to support teachers who are reading the novel *Wolf Brother* by Michelle Paver with their classes. Set in Mesolithic times, the novel is not only an exciting read but also reveals much about the lives of hunter-gatherers who lived in Scotland 10,000 years ago. Much of the action is set within the forests of an unspecified northern European country. The characters are utterly at home in this environment, and know how to make the most of the resources the forest can offer. Understanding the woodland is therefore the key to understanding Mesolithic life.

Trees and the Scottish Enlightenment

A learning resource for teachers of Curriculum for Excellence Level 2

Scotland is the home of modern Forestry.
Forests here are managed now very differently to how woodlands were managed in the past.
This resource tells the story of how Scottish forestry developed during a particular historical time period, known as the Enlightenment and in a particular sort of place, the Scottish Country Estate. The Enlightenment happened throughout Europe, especially in England, Holland, France and Germany but Scotland played an important part despite being smaller, poorer and, at times, at civil war. It wasn't a single event, rather it was a complicated series of developments that happened over a long time, starting in the 17th century and continuing through into the 19th century.

MESOLITHIC MAN

NEOLITHIC BOY

BRONZE AGE MAN

RAMSES THE GREAT

CELTIC WARRIOR

SPARTACUS

ROMAN LEGIONARY

PICTISH WARRIOR


Outdoor&
Woodland
Learning
SCOTLAND


Outdoor&
Woodland
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VIKING SETTLER

WILLIAM SHAKESPEARE

AMELIA EARHART

NEIL ARMSTRONG

HIPPIE

BIG BROTHER

NANA

DAD


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Woodland
Learning
SCOTLAND


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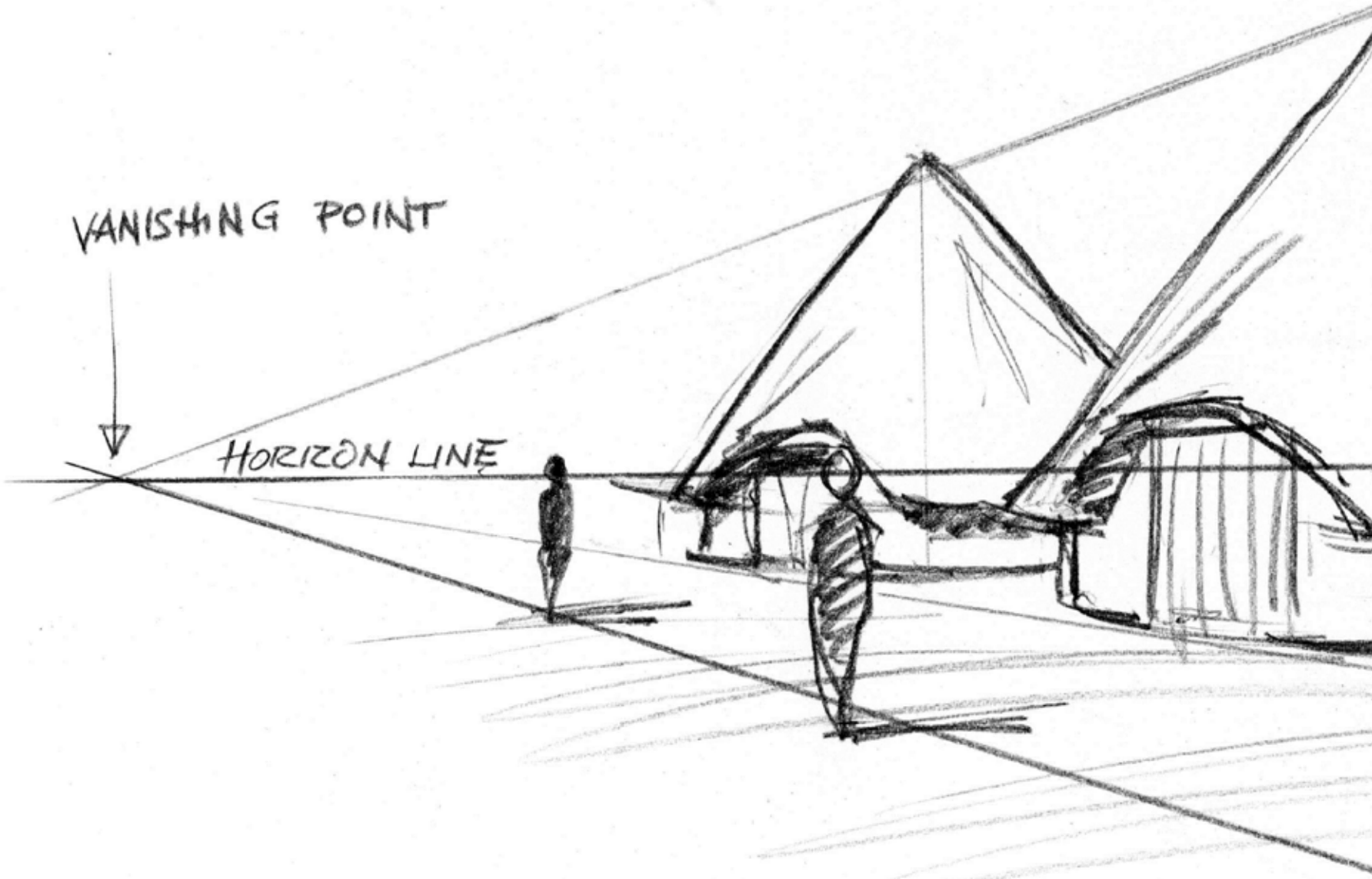
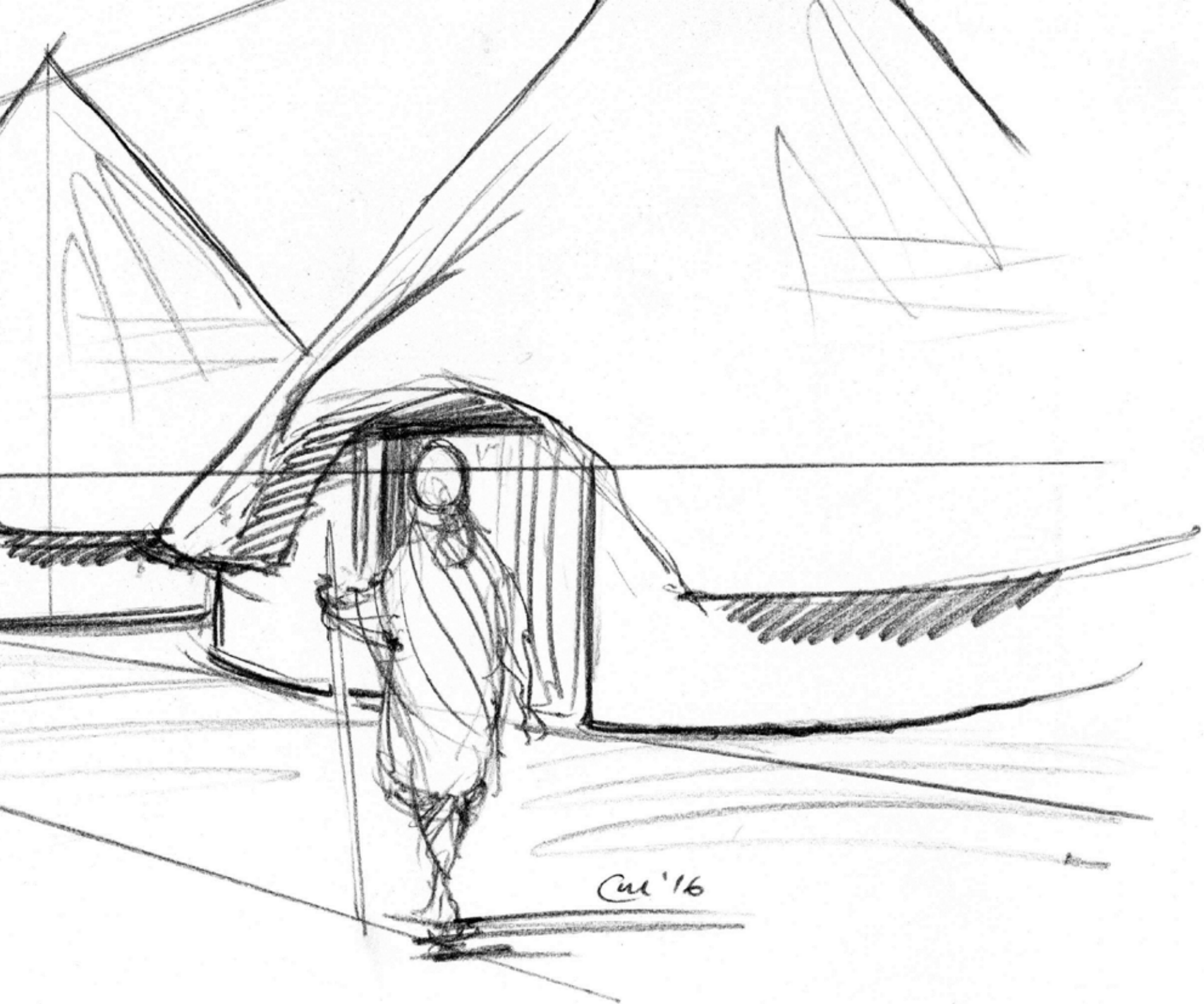
A LEGO model of the Na Clachan Aoraidh four poster stone circle


VANISHING POINT
HORIZON LINE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Forestry Commission Scotland
Coimisean na Coilltearachd Alba

Forestry Commission Scotland serves as the forestry directorate of the Scottish Government and is responsible to Scottish Ministers

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