what's in the box?

Prehistory Box

Teachers' Guide

KERRY COUNTY museum
PRÍOMH MHÚSAEM CHIARRAÍ

LOAN BOX PROGRAMME

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An Chomhairle Oidhreachta
The Heritage Council

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what's in the box?

Introducing the Loan Box Programme

Kerry County Museum's interactive Loan Box Programme is an important part of our education, community and outreach strategy. The boxes bring a little piece of the museum to the outside world as each contains artefacts and replica objects from the Museum's collections. We are providing pupils with a unique hands-on experience to actively discover and explore the past.

The boxes are aimed primarily, but not exclusively, for the use of primary schools in County Kerry. The 20th Century Box for example may also be used by other groups for reminiscence workshops.

This service, which has been funded by the Heritage Council, Kerry County Council and Tralee Town Council, is a new venture for the museum. We hope that the loan boxes will not only support and enhance the experience of the primary school curriculum for children but also proof to be a valuable educational tool for teachers and other educators. We believe that it will increased appreciation for our heritage, local history and the Museum.

As already mentioned, many of the items in the boxes are genuine artefacts. Some, for example the Stone Age arrowhead, are thousands of years old and it is imperative that the artefacts are treated with the utmost care. Please read the Guidelines for Handling (page 6) prior to using the box and complete the artefact inventory checklist when returning the box to the Museum.

We would also be grateful if teachers using the box in the classroom could complete an evaluation form. This will assist us in developing more loan boxes and classroom materials.

We hope you enjoy using the box and the resource materials with your group!

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Aims and benefits of the scheme

AIMS OF THE LOAN BOX SCHEME

By introducing this service to schools in Kerry it the aspiration of Kerry County Museum that a number of aims will be achieved:

- To allow schools and groups in the county of Kerry to borrow museum collections and to help children ecognise the importance of primary sources.
- To provide support to the primary school curriculum through the use of museum artefacts in the classroom.
- To extend access to the museum collections and increase awareness of the role of the regional museum.
- Encourage children and parents to use the museum.

BENEFITS OF HANDLING PROGRAMMES

The loan box service at Kerry County Museum is a new undertaking for the museum. Handling programmes, which involve making objects in a museum accessible to the public, has been ongoing in many British museums for many years and has proven to be of immense benefit, to both young and old. Handling original objects gives users an enhanced experience of museum collections, with the senses of sight, hearing, smell and touch, all being used; removing physical and sensory barriers for everyone. Val Munday, referring to the experience of museums in Britain (2002, Guidelines for establishing, managing and using handling collections and hands on exhibits in museums, galleries and children's centres) has listed a number of the benefits associated with handling collections and loan services:

- It is and inclusive activity, breaking down barriers and encouraging group interaction.
- It has a proven track record in reminiscence work.
- Outreach of original objects through loan services allows people who may not be able to get to the museum, to appreciate objects and use them to support their learning.
- Access to real objects can play a powerful role in both stimulating and supporting learning. The curriculum emphasises the importance of using a variety of different sources and of introducing children to primary and secondary source material. The evidence suggests that attainment is raised and the learning of under-achievers is stimulated.

Overview of box contents

Each box contains: *artefacts and replicas, activity sheets and information about the objects*

PREHISTORY BOX –

This box contains artefacts dating to the Neolithic and Bronze Age in Ireland. The artefacts include a stone axehead, flint arrowhead, three flint scrapers, a mining hammer and a bronze axehead. There is also a box with a number of pieces of unworked flint. A number of replica items are also included; a flint arrow, bronze axe, flat bronze axehead with handle and leather binding and a stone mould for casting bronze axeheads. These replica items can be handled freely and give opportunity to experience the weight and uses of the objects.
It is hoped that the information included will provide the children with a context for the artefacts, by showing them how people lived in the Stone and Bronze Ages, the type of food that they ate and what type of houses they lived in etc. The realisation from the children's point of view should be that people in prehistoric Ireland depended on these types of tools for their very lives.

BALLINSKELLIGS CASTLE BOX –

Ballinskelligs Castle is the ruin of a tower house located on the Iveragh Peninsula, Co. Kerry. A rescue archaeological excavation at the site some years back yielded hundreds of artefacts and these provide the main focus for the loan box. The artefacts in the box include glass, pottery, bone, shell, and iron nails. Replicas of items that generally do not survive in an excavation context are also included, such as a pair of gentleman's leather gloves, clothes, a leather belt, leather boots, an arrow and two ceramic pots.

While the main focal point of the box is centred on Ballinskelligs Castle, the support information accompanying the box provides information not only on the castle itself, but also on the arrival of the Anglo-Normans in the twelfth century and the beginnings of castle building in Ireland.

Information sheets in the booklet provide additional information on the finds e.g. the bone and shell come under 'Medieval food'. Other topics covered include 'Medieval pottery and glass', 'trading in medieval times', and 'clothes in medieval times'.

Similar to the Prehistoric box, there are question sheets for each of the artefacts.

20TH CENTURY BOX –

The format of this box is slightly different to the previous two. Firstly, all the objects are 'real' and are from our more recent history, generally dating to different periods throughout the 20th century.
They fall under the categories of 'household', 'travel and communication' and 'school'. Secondly, the support information included is artefact specific, with an information card, included for each object. The blank pages of the notebook provide an opportunity for any group using the objects, to record their own thoughts or memories about the items.

Guidelines for handling the objects

The objects contained in the loan boxes are original artefacts, which form part of the collections usually held in storage at Kerry County Museum. In loaning objects to schools and groups we wish to stress that their care is a priority, as these objects are irreplaceable. In order to ensure the safety and care of the objects, we would ask schools to strictly adhere to the following guidelines:

- *Designate one person (teacher or group leader) who is responsible for the box and its contents.*

- *Please use both hands to carry boxes containing objects. Carry and store the box in an upright position. Seek assistance to carry a heavy box. Keep the box locked away when not in use.*

- *Wash hands before and after handling objects and please use gloves provided for handling sensitive objects such as the bronze axehead. Items should only be handled under the supervision of the teacher.*

- *Handle the objects using both hands, over a firm surface such as a table.*

- *Only handle one object at a time and do not walk around with objects.*

- *Please do not try to open any of the sealed boxes as the artefacts inside are extremely fragile.*

- *Do not expose the items to strong sunlight, excessive heat or damp.*

- *Please use pencils when working with the artefacts. Do not use ink pens.*

- *Please be careful when handling the replica axes and arrowheads as they are sharp, and misuse can lead to accidents.*

- *Please re-pack the box carefully and ensure the objects are replaced in the box in their original packing. Heavier objects should be placed in the bottom of the box, with lighter ones on top.*

- *Please complete a check that all the objects have been returned undamaged to the box.*

- *Report damage, loss or theft of an object to the museum immediately. Do not, under any circumstances, attempt to repair a damaged or broken object, but ensure all the broken pieces are retained.*

Activity sheet 1 | Stone axehead

Found in 1974 at Ballincollig, Co. Kerry

Stone was the earliest material people used to make tools, weapons and domestic utensils before the discovery of metal. The period in which stone was the main material is called the Stone Age.

REAL ARTEFACTS • HANDLE WITH CARE!

1 The axehead is made from green sandstone. What material do you think the haft (handle) was made from? (Hint: think of a modern axe.)

2 More than 20,000 axeheads have been found in Ireland but only five hafts have survived. Why do you think this is the case?

3 How do you think the haft was attached to the axehead? Can you draw a picture of what the complete axe would have looked like?

4 What could it have been used for? Who might have used it?

5 What do we use axes for today? Do we use them for the same things as people did in the Stone Age?

6 Axeheads were produced in Ireland but they were also imported from Britain and in small numbers from continental Europe. What does this tell us about the people who lived during the Stone Age?

Bileog oibre 1 | Ceann-tua cloiche

Aimsithe i 1974 ag Baile an Chollaigh, Co. Chiarraí

B'é cloch an t-ábhar is luaithe a d'úsáidtí le huirlisí, airm agus uirlisí chistine a dhéanamh roimh aimsiú miotail. Glaotar An Chlochaois ar an dtréimhse ina raibh cloch á húsáid mar phríomhábhar.

FÍOR-IARSMAÍ • LÁIMHSEÁIL GO CÚRAMACH!

1 Tá an ceann-tua déanta as gaineamhchloch ghlas. As cén ábhar a bhí an sáfach (lámh) déanta, meas tú? (Leid: smaoinigh ar thua nua-aimseartha.)

2 Aimsíodh os cionn 20,000 ceann-tua in Éirinn ach níor tháinig ach cúig sháfach slán. Cad na thaobh é seo, meas tú?

3 Conas go raibh an sáfach ceangailte leis an gceann-tua? An féidir leat líníocht a tharraingt ar chuma chinn-tua iomláin?

4 Cad chuige a bhí sé? Cé aige a bhí sé?

5 Cén úsáid a bhainimid as cinn-tua inniu? An mbíonn an úsáid chéanna againn astu agus a bhí ag daoine sa Chlochaois?

6 Dheintí cinn-tua in Éirinn ach tugadh isteach iad chomh maith ó Shasana agus ó mhór-roinn na hEorpa. Cad deireann sé seo linn faoi na daoine a mhair le linn na Clochaoise?

Activity sheet 2 | Flint pieces

Collected for the loan box

In Ireland, flint occurs mainly in Antrim. It is a very hard stone but can be chipped easily. Flint breaks like glass, creating razor-sharp edges.

1 Flint was used to make tools and weapons, such as arrowheads. Can you think of other weapons and tools that were made from flint?

2 Look at the flint pieces. They are actually just pieces of stone. If you lived 5,000 years ago and your job is to make them into a tool or a weapon, how would you go about it?

3 Spear and arrowheads made from flint were highly effective for hunting animals. Imagine you are a Stone Age hunter and you have just killed a deer. Why would your tribe be very happy about it? (Hint: Apart from the meat for a nice dinner, think of all the other useful animal parts, such as the hide, the antler or the bones.)

4 Hunting was hard work. Do you think this was a reason why people started to domesticate animals? Can you see other advantages of keeping animals?

5 Flint stones were also used for lighting fires. Can you think of three reasons why fire was important?

6 To light a fire in 'Stone Age fashion' you will need a flint stone, a pyrite rock ('fool's gold') and tinder (dried fungus or hay). By hitting the flint and the pyrite together, a spark will be ignited. If you travelled back in time with a lighter, do you think it would be a good trading item? Why do you think so? What would you trade it for?

Bileog oibre 2 | Píosaí clocha tine

Bailithe don mbosca iasachta

In Éirinn, is in Aontraim go mórmhór atá cloch thine le fáil. Is cloch an-chruaidh í agus is furasta í a shliseadh. Briseann sí mar ghloine, ag cruthú faobhair géara.

1 D'úsáidtí cloch thine le huirlisí agus airm, ar nós reanna saighde, a dhéanamh. An féidir leat smaoineamh ar airm agus uirlisí eile a bhí déanta as cloch thine?

2 Féach ar na píosaí clocha tine. I ndáiríre is píosaí clocha iad. Cuir i gcás gur mhair tú 5,000 bliain ó shin agus é mar chúram ort uirlis nó airm a dhéanamh as cloch thine, conas go dtabharfá faoi?

3 Bhí reanna sleá agus saighde déanta as cloch thine agus iad an-éifeachtach i gcomhar sealgaireacht ainmhithe. Samhlaigh gur sealgaire tú sa Chlochaois agus tá fiadh díreach maraithe agat. Cad na thaobh go mbeadh do threibh an-shásta faoi seo? (Leid: chomh maith leis an mbia chun dinnéar deas a dhéanamh, cuimhnigh ar na páirteanna eile den ainmhí a bheadh áiseach – an craiceann, na beanna nó na cnámha.)

4 Obair chruaidh ab ea sealgaireacht. An cheapann tú gurb shin an fáth gur thosnaigh daoine ag cur ainmhithe i gclós? An bhfuil buntáistí eile ann as ainmhithe a choimeád?

5 D'úsáidtí cloch thine chomh maith le tine a lasadh. An féidir leat cuimhneamh ar thrí chúis go raibh tine tábhachtach?

6 Chun tine a lasadh 'ar nós na Clochaoise', beidh cloch thine riachtanach, píosa charraig phiríte agus sponc (fungas nó féar tirim). Lasfar spréach le cloch thine agus carraig phirítea bhuaileadh le chéile. Dá raghfá siar san am agus lastóir agat, an mbeadh sé go maith mar áis thrádála? Cén fáth, meas tú? Cad a ghlacfá leis mar mhalartú air?

Activity sheet 3 | Arrows

Real arrowhead and replica arrow

The arrowhead is a real artefact found near Castleisland. It is probably about 4,000 years old. The replica arrow is included to demonstrate how arrows were made and used.

1 Look at the arrow: How was it used? Who might have used it?

2 What kind of animals would have been hunted with bows and arrows?

3 Can you think of other ways to use bows and arrows other than fishing and hunting?

4 What materials would you need to make an arrow and where would you get them from?

5 How do you think the arrow was made? Would it have taken long to make? Do you think it took a lot of skill and experience to be a flint worker?

6 Can you think of a reason why only arrowheads are found and not a complete arrow? (Hint: think of the difference between stone and wood.)

Bileog oibre 3 | Saigheada

Fíor-rinn saighde agus macasamhail saighde

Is fíor-iarsma an rinn saighde agus í aimsithe gar d'Oileán Chiarraí. Meastar gur thart ar 4,000 bliain d'aois isea í. Tá an macasamhail saighde ann chun a thaispeáint conas a dheintí agus a d'úsáidtí saigheada.

1 Féach ar an saighead: Conas a d'úsáidtí í? Cé úsáideadh í?

2 Cén sórt ainmhithe go mbíodh seilg déanta orthu le bogha agus saighead?

3 An féidir leat cuimhneamh ar aon tslí eile chun bogha agus saighead a úsáid seachas sealgaireacht agus iascaireacht?

4 Cad iad na hábhair a bheadh riachtanach chun saighead a dhéanamh agus cá n-aimseófá iad?

5 Conas ar deineadh an saighead, meastú? An dtógfadh sé i bhfad le déanamh? An raibh an-chuid scile agus taithí i gceist mar oibrí chloiche thine?

6 An bhfuil aon tuairim agat cén fáth nár aimsíodh ach reanna saighde in ionad an saighead iomlán? (Leid: smaoinigh ar an ndifríocht idir cloch agus adhmad.)

Activity sheet 4 | Stone scrapers

Found at Ballycarty, Tralee, Co. Kerry

These three scrapers were found by archaeologists during the excavation of a passage tomb at Ballycarty, near Tralee, Co. Kerry. They were used for scraping animal hides.

1 What type of stone do you think they are made of? (Hint: Have a look at the pieces of flint in the box. What differences or similarities do you notice?)

2 Pretend you are an archaeologist and you just found the scrapers. Can you draw one of them? You will have to think of their size, shape, colour and texture.

3 Scrapers were used for preparing animal hides. What does that tell us about the people that used them? (Hint: Think about their clothes, how they stored food and what their tents were covered with.)

4 Can you come up with a story of how the scrapers might have been used? Who might have used it? Do you think they were used by men, women or children?

5 How do you think they ended up in the passage tomb at Ballycarty? Do you think someone lost them by accident or could they have been placed there for a ritual reason, perhaps as grave goods for the dead?

6 Some people consider stone tools as primitive but scrapers were still in use long after the invention of metal tools. What does this tell us about how effective they were?

Bileog oibre 4 | Scríobáin cloiche

Aimsithe ag Béal Átha na Ceártan, Trá Lí, Co. Chiarraí

D'aimsigh seandálaithe an trí scríobán seo le linn tochailt ar thuama pasáiste ag Béal Átha na Ceártan, gar do Thrá Lí, Co. Chiarraí. D'úsáidtí iad le craicne ainmhithe a scríobadh.

FÍOR-IARSMAÍ • LÁIMHSEÁIL GO CÚRAMACH!

1 Cén sórt cloiche atá iontu, meas tú? (Leid: téir ag féachaint ar na píosaí clocha atá i mbosca na clocha tine. Cad iad na difríochtaí nó cosúlachtaí a thugann tú faoi deara?)

2 Lig ort gur seandálaí tú agus tá tú díreach tar éis na scríobáin a aimsiú. An féidir leat líníocht a tharraingt ar cheann acu? Caithfidh tú smaoineamh ar a dtoirt, múnláin, dathanna agus ábhair.

3 D'úsáidtí scríobáin le craicne ainmhithe a ullmhú. Cad deireann sé sin leat faoin chineál duine a bhain úsáid astu? (Leid: smaoinigh ar a gcuid éadaí, conas a bhí a gcuid bia stórálta agus cad a bhí acu mar dhíon ar a gcuid puball.)

4 An féidir leat scéal a chumadh faoi úsáid na scríobán. Cé bhí á n-úsáid? Fir, mná nó leanaí, meas tú?

5 Conas ar chríochnaíodar suas i dtuama pasáiste i mBéal Átha na Ceártan? An cheapann tú gur chaill duine éigin iad trí thimpist nó an amhlaidh gur cuireadh ann iad ar chúis dheasghnách, mar thionlachan dos na mairbh?

6 Ceapann daoine go bhfuil uirlisí cloiche ró-bhunúsach, ach bhí scríobáin in úsáid i bhfad i ndiaidh chumadh uirlisí miotail. Cad deireann sé sin linn faoi cé chomh éifeachtach is a bhí siad?

Activity sheet 5 | Bronze age hammer

Found at the shore of Ross Island, Killarney

This mining hammer is about 4,000 years old and was used in the copper mines at Ross Island on Lough Leane, which is the largest of the Killarney lakes.

REAL ARTEFACTS • HANDLE WITH CARE!

1 What is it made of? Do you think it is a good type of material to make a mining hammer?

2 What does it look like – shape, size, texture? Do you think it was heavy to use?

3 Some hammers were hand-held; others were used with a handle (hafted). Do you think this hammer had a haft? If yes, where was the haft attached to the stone and how do you think it was attached?

4 Are there any signs of damage or wear? Do you think damaged or broken hammers were thrown away?

5 To be working in the mines was a dangerous job due to high water levels and the danger of roof collapse. Would you like to be a miner in Ross Island in the Bronze Age? Why?

6 The miners at Ross Island lived in simple huts at a nearby work camp. Can you think of a story of how they lived and work (e.g. where did their food come from, what type of activities went on in the camp etc.)

Bileog oibre 5 | Casúr Cré-umhaoise

Aimsithe ar chlúdach Oileán an Rois, Cill Airne

Tá an casúr mianadóireachta seo thart ar 4,000 bliain d'aois agus bhí sé in úsáid ag mianaigh copair ag Oileán an Rois ar Loch Léin, an loch is mó de locha Chill Airne.

1 Cad as a bhfuil sé déanta? An cheapann tú gur ábhar maith é chun casúr mianadóireachta a dhéanamh?

2 Cén cuma atá air – múnlán, toirt, uigeacht? An raibh sé trom, meas tú?

3 Bhí cuid de na casúir á n-úsáid sa láimh; bhí sáfach (cos) ar chuid eile acu. An cheapann tú go raibh sáfach ar an gcasúr seo? Más ea, an raibh an sáfach ceangailte leis an gcloch agus conas é sin?

4 An bhfuil aon rian damáiste nó caithimh air? Ar chaitheadh amach casúir briste nó damáistithe, meas tú?

5 Obair dhainséarach ab ea miandóireacht toisc an leibhéal ard uisce agus baol titim an dín. An dtaitneodh sé leat a bheith i do mhianadóir ar Oileán an Rois sa Chré-umhaois. Cén fáth?

6 Mhair na mianadóirí ag Oileán an Rois i mbotháin simplí ag campa oibre in aice láimhe. An féidir leat cuimhneamh ar scéal faoi conas a mhaireadar agus a d'oibríodar? (m.sh. cad as a tháinig a gcuid bia, cad a bhí ar siúl sa champa, agus araile?)

Activity sheet 6 | Axe and stone mould

Replicas

The mould in the box shows you how Bronze Age tools were made. One of the commonest objects made by using such one-piece-moulds are flat axeheads, which date to the beginning of the Bronze Age.

1 Moulds for making Bronze tools and weapons were often made from stone or clay. How do you think the moulds were made?

2 To produce bronze you have to mix 90% copper with 10% tin. Copper needs to be heated above 1300° Celsius for smelting (to extract the metal from rocks containing metal ore) and for melting. Do you think everybody could have made bronze objects or was it done by skilled metal workers? Why?

3 After the smelting and melting, the liquid Bronze was poured into specially made moulds. Why did our ancestors go through this complicated procedure when they could have just continued using stone tools? (Hint: Think of the advantages of metal tools and weapons.)

4 Archaeologists made a stone axe using the same tools our ancestors would have. It took them 20 hours! Do you think it would have taken longer or shorter to make bronze axeheads with a stone mould?

5 Can you think of other advantages making tools with stone moulds? (Hint: Do you think they could use the stone moulds only once or many times?)

6 Do you think bronze axeheads were recycled by melting the metal and making it into new tools or weapons if they got damaged? Why do you think so?

Bileog oibre 6 | Tua agus múnla cloiche

Macasamhla

Taispeánann an múnla sa bhosca conas ar deineadh uirlisí na Cré-umhaoise. Ar cheann des na nithe is comónta a deineadh sna múnlaí-aon-phíosa mar seo ab ea cinn-tua cothroma, a théann siar go tús na Cré-umhaoise.

1 Dheintí múnlaí d'uirlisí agus airm go minic as cloch nó cré. Conas ar deineadh na múnlaí, meas tú?

2 Chun cré-umha a dhéanamh, tá meascán de 90% copair le 10% stáin riachtanach. Chaithfear copar a théamh os cionn 1300° Celsius len é a bhreithniú (chun an miotal atá i gcarraigeacha go bhfuil mian mhiotalach iontu a bhaint) agus a leá. An raibh sé ar chumas gach éinne nithe chré-umha a dhéanamh nó an raibh san déanta ag ceardaithe miotail? Cén fáth?

3 Tar éis é a bhreithniú agus a leá, líonadh an cré-umha leachtach isteach i múnlaí ar leith. Cad na thaobh gur thug ár sinsear faoin bpróiseas casta seo nuair gurb fhéidir leo leanúint ar aghaidh ag úsáid uirlisí chloiche? (Leid: cuimhnigh ar na buntáistí a bhaineann le huirlisí agus airm miotail.)

4 Dhein seandálaithe tua cloiche ag úsáid na huirlisí céanna a bheadh ag ár sinsear. Thóg sé 20 uair a' chloig dóibh é a dhéanamh! An dtógfadh sé níos mó nó níos lú ama chun ceann-tua cré-umha a dhéanamh le múnla cloiche?

5 An féidir leat smaoineamh ar bhuntáistí eile le huirlisí a dhéanamh le múnlaí cloiche? (Leid: an raibh siad in ann na múnlaí a úsáid uair amháin nó arís agus arís eile, meas tú?)

6 An cheapann tú go raibh athchúrsáil déanta ar na cinn-tua, má bhí damáiste déanta orthu, len iad a leá agus uirlisí agus airm nua a dhéanamh? Cén fáth, meas tú?

Activity sheet 7 | Axehead, haft & binding

Replicias

In the box you will find a flat bronze axehead, handle and leather binding. Put the axehead into the haft and try to work out how the axehead would have been held in place with the leather binding.

1 Would you know that it is an axe if you were not told?

2 What are the three different parts made of and what do they look like? (Hint: compare their shapes, sizes and textures?)

3 Do you think it was easy or difficult to put it together and to use? Why?

4 What was the axehead used for and who might have used it?

5 During the Stone Age people used stone axes. From the Bronze Age onwards people used mainly tools made from metal. Can you think of reasons why bronze axes were better than stone ones?

6 Do you think this bronze axe is well designed to do its job? Can you suggest any improvements if you compare it to a modern axe?

Bileog oibre 7 | Ceann-tua, sáfach & ceangal

Macasamhla

Sa bhosca tá ceann-tua cothrom, sáfach agus ceangal leathair. Cuir an ceann-tua isteach sa sáfach agus dein iarracht ar conas a bheadh an ceann-tua curtha i gcóir leis an gceangal leathair.

1 Gan é ráite leat, an mbeadh fhios agat gur tua é?

2 Cén bun-ábhair atá sna páirteanna éagsúla agus cén chuma atá orthu?

3 An raibh sé furasta nó deacair é a chur le chéile agus a úsáid? Cén fáth?

4 Cad chuige a bhí an ceann-tua agus cé bhaineadh úsáid as?

5 Le linn na Cré-umhaoise bhí tuanna cloiche á n-úsáid ag na daoine. Ón Cré-umhaois ar aghaidh d'úsáidtí uirlisí déanta as miotal. An féidir leat cuimhneamh ar chúiseanna gurb fhearr na cinn-tua chré-umha ná na cinn chloiche?

6 An cheapann tú go bhfuil cuma mhaith ar an gceann-tua Cré-umhaoise chun a chúram a dhéanamh? An féidir leat aon mholadh a dhéanamh chun feabhas a chur air i gcomparáid le tua nua-aimseartha?

Activity sheet 8 | Socketed Bronze Age axe

Replica

This bronze axehead in the box is a replica. Bronze tools and weapons such as this one were not always just practical objects. They represented symbols of wealth and power and were also used as currency.

1 Describe the axehead as accurately as possible: What size, shape, material and colour is it?

2 Explain what condition the socketed axehead is in: Do you think it looks old? Why?

3 If it was a real artefact, do you think there might be any marks or signs of damage on it?

4 Compare the flat axehead (activity sheet 6 and 7) to the socketed axehead. Both date to the Bronze Age but one is earlier than the other. Which one do you think is older and which one is newer? Why? (Hint: look at the design and think about which one looks easier to make.)

5 Flat axeheads were made with open one-piece moulds. They were easier to make than socketed axeheads for which a closed two-piece mould was needed. Which design do you think is better? Why?

6 Compare the hafting (the way the axehead is attached to the handle) of the two axes: which one seems better? Could that explain why people started to make socketed axes?

Bileog oibre 8 | Ceann-tua soicéid

Macasamhail

Macasamhail isea an ceann-tua sa bhosca. Ní mar nithe phraiticúla amháin a bhí uirlisí agus airm cré-umha mar seo. Ba shiombail rachmais agus cumhachta iad agus baineadh úsáid astu mar airgead reatha chomh maith.

1. Dein cur síos chomh cruinn agus is féidir ar an gceann-tua: cén toirt, múnlán, ábhar agus dath isea é?

2. Mínigh cén ordú ina bhfuil an ceann-tua soicéid: an cheapann tú go bhfuil cuma chaite air? Cén fáth?

3. Dá mba fíor-iarsma é, an cheapann tú go mbeadh aon mharc nó rian damáiste air?

4. Dein comparáid idir an ceann-tua cothrom (bileoga gníomhaireachta 6 agus 7) agus an ceann-tua soicéid. Téann an dá cheann siar go dtí an gCré-umhaois, ach tá ceann acu níos luaithe ná an ceann eile. Cén ceann is ársa agus cén ceann is déanaí? (Leid: féach ar an ndearadh agus cuimhnigh ar cén ceann is fusa le déanamh.)

5. Bhí cinn-tua chothroma déanta le múnlaí aon-phíosa oscailte. Bhíodar i bhfad níos fusa le déanamh ná cinn-tua soicéid go raibh múnla dhá-phíosa riachtanach. Cén dearadh ab fhearr, meas tú? Cén fáth?

6. Dein comparáid idir sháfaigh an dá cheann-tua (an slí go bhfuil an ceann-tua ceangailte leis an gcos): cén slí is fearr? An tugann sé sin le tuiscint dúinn an chúis gur thosnaigh daoine ar thua soicéid a dhéanamh?

Activity sheet 9 | Bronze Age pot

Replica

People started making and using pottery in the New Stone Age (Neolithic). During the Bronze Age some pottery vessels were placed into graves.

1 Look at the pottery vessel. What raw material is it made of?

2 What does it look and feel like? (Is it rough, smooth, heavy, light? What colour is it? Does it look old to you?)

3 Find the decoration on the pot. How do you think it was done?

4 During the Mesolithic (Middle Stone Age) people did not live in permanent settlements but moved from place to place to find food. These people did not make and use pottery vessels. Their containers were made of leather and wood. Can you think of reasons for that? (Hint: think of the differences between wood, leather and pottery. Which of these materials breaks easily and which is very durable?)

5 To make pottery one needs clay, water and fuel for firing. Can you make up a story how the pot was made? Who do you think would have made it?

6 During the Bronze Age pottery was used the same way we use pottery today. Pottery vessels, however, were also put into graves, sometimes together with flint knives and bone pins. Can you think of reasons why this is the case?

Bileog oibre 9 | Pota Cré-umhaoise

Macasamhail

Thosnaigh daoine ag déanamh agus ag úsáid cré-earraí sa Nua Chlochaois (Neoiliotach). Le linn na Cré-umhaoise, cuireadh potaí cré in uaigheanna.

1 Féach ar an bpota. As cén bun-ábhar atá sé déanta, meas tú?

2 Cén chuma atá air agus conas a bhraitheann sé? (An bhfuil sé garbh, mín, trom nó éadrom? Cén dath é? An fhéachann sé ársa duit?

3 Aimsigh an maisiúchán ar an bpota. Conas a bhí sé déanta?

4 Le linn na Meán-Chlochaoise (Méisiliteach) níor mhair daoine in aon lonnaíocht amháin ach bhogadar ó áit go háit ag cuardach bia. Ní raibh cré-earraí ag na daoine seo. Bhí a gcuid earraí déanta as adhmad agus leathar. Cén fáth é sin, meas tú? (Leid: cuimhnigh ar na difríochtaí idir adhmad, leathar agus cré-earraí. Cén ábhar a bhriseann go héasca agus cén ábhar atá buan go maith?)

5 Chun cré-earra a dhéanamh tá cré, uisce agus breosla len é a bhácáil riachtanach. An féidir leat scéal a chumadh faoi conas a deineadh an pota? Cé dhéanadh é, meas tú?

6 Le linn na Cré-umhaoise, d'úsáidtí cré-earraí ar nós an lae inniu. Ach chuirtí cré-earraí in uaigheanna agus uaireanta bhí clocha tine, sceana agus cnáimhbhioráin ann chomh maith. Cén chúis a bhí leis seo, meas tú?

MY FAVOURITE OBJECT

Test your archaeology skills and fill out this form...

KERRY COUNTY museum
PRIOMH MHÚSAEM CHIARRAÍ

ARCHAEOLOGIST'S NAME: _____ DATE: _____

DETAILS OF OBJECT...

OBJECT *(WHAT IS IT?)*: _____

MATERIAL *(WHAT IS IT MADE OF?)*: _____

_____

CONDITION *(GOOD? WORN? BROKEN?)*: _____

_____

COLOUR: _____ SHAPE: _____

THICKNESS: _____ mm LENGTH: _____ mm WIDTH: _____ mm

SKETCH OF OBJECT...

MO ROGHA RUDA FÉIN

Bain triall as do scileanna seandálaíochta agus comhlíon an fhoirm seo...

KERRY COUNTY museum
PRIOMH MHÚSAEM CHIARRAÍ

AINM AN SEANDÁLAITHE: _____ DÁTA: _____

SONRAÍ AN RUDA...

AN RUD *(CAD É?):* _____

ÁBHAIR *(CAD AS ATÁ SÉ DÉANTA):* _____

_____

CUMA *(GO MAITH? CAITE? BRISTE?)* _____

_____

DATH: _____ MÚNLÁN: _____

TIÚS: _____ mm FAD: _____ mm LEITHEAD: _____ mm

LÉARÁID AN RUDA...

Discover more about: The Stone Age

Why is the Stone Age called Stone Age?

People made tools from stone during the period between 500,000 BC and 2,000 BC and this is called the Stone Age. There were three different stages:

Paleolithic *(Old Stone Age)* 500,000 – 10,000 BC

Mesolithic *(Middle Stone Age)* 7,000 – 4,000 BC

Neolithic *(New Stone Age)* 4,000 – 2,400 BC

BC = Before Christ (years are counted from before the birth of Christ)

IRELAND'S FIRST SETTLERS

The first people probably came to Ireland about 7,000 BC during the Mesolithic (Middle Stone Age). They must have arrived by boat. Ireland was heavily forested and the rivers were full of fish. These first settlers hunted animals and gathered edible plants and shellfish and for that reason they are called hunters and gatherers. In order to find food Mesolithic people did not live in permanent settlements but had to move around the countryside.

Q This display in Kerry County Museum shows an early settler. Can you tell what he's doing?

FIRST PEOPLE IN KERRY (MESOLITHIC)

The earliest evidence for settlers in Kerry comes from Ferriter's Cove on the Dingle peninsula. The site dates to around 5,000 BC. It was a good location because of the

availability of **rhyolite** (a flint-like stone) to make tools and the sea was a good source for food. The people at Ferriter's Cove lived mainly on fish, supplemented with nuts and berries; pig and hare bones were also found at the site. They used flint-like stones to make tools which they used to kill and cut their food and to prepare animal hides for clothing and tent covers. The people probably lived in temporary camps during times of the year when food was plentiful.

IRELAND'S FIRST FARMERS (NEOLITHIC)

The first farmers came to Ireland about 4,000 BC during the Neolithic (New Stone Age). We do not know exactly where they came from – probably from Britain or even from further away places. They arrived in boats and also brought animals, tools and seeds.

Neolithic people were the first farmers in Ireland and they stayed in one place to tend their crops and animals. Their life was different to the life of the Mesolithic people. They made a variety of tools and implements to farm their land and build their houses.

The tools were made from stone, wood and animal bone. Because materials such as wood and bone do not survive over thousands of years we generally find only objects that were made from stone such as axeheads, arrowheads and scrapers. The axehead, arrowhead and the scrapers in the box are all stone tools.

Q Can you describe what job the Neolithic farmer performs in this display?

Q Can you locate Ferriter's Cove on the map in the Box? (Hint: it is on the Dingle peninsula)

Discover more about: Stone axes

Stone axes were one of the most common tools used during the Neolithic period. They are found all over Ireland and about 20,000 have been recorded so far.

Stone Age farmers cut down forests to make fields. They used axes like the one in the box to chop down the trees.

STONE AXES

Our ancestors used several types of rocks to make axeheads. A thorough knowledge of the different types of rocks and their qualities was needed to select the right stones for the right purposes. To make a polished stone axe for example, it was necessary to look for stones that are hard and of high density. Yet, it had to be possible to grind and polish them. They also needed to be resistant to fracturing so that a high quality axe could be made suitable for large-scale forest clearance.

Axeheads were made in different sizes; most of them measure between 8 to 16 centimetres. Interestingly, archaeologists have discovered some very small and some very big axes. Their size tells us that they could not have been used as tools or weapons. Could the miniature axes were perhaps toys for children? Generally, archaeologists believe that

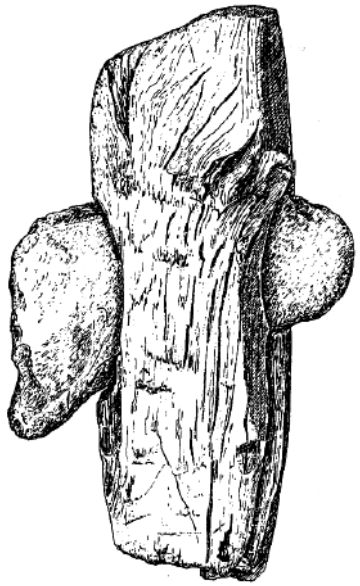
these unusual-sized axes were ceremonial objects.

Another interesting fact is that axes were probably not only seen as simple tools but they were also highly valued objects. To produce a good axe, the blade needed to be polished to make it more durable. Yet, very often the axe was polished all over, for which there is no practical reason. Our ancestors apparently did not only want a practical tool but they also felt that it should look a certain way. We may never discover what exactly our ancestors were thinking or what they believed in but every new artefact will shed more light at our ancient past.

NEOLITHIC AXE FACTORY IN ANTRIM

The porcellanite stone at Tievebulliagh Mountain in County Antrim was so good for making axes that one Neolithic community set up a tool making factory there around 3,000 BC so they could mass produce them. Archaeologists have found axes from Tievebulliagh throughout Ireland and Britain, which means there was an active trade network at the time.

The original Neolithic toolmaker would have inserted the axehead into a hole in a wooden handle, and tied it in place with leather bindings and **resin** (a sticky substance that comes from plants or trees). When archeologists find axes, they don't usually find the wooden handle because the wood has decayed. However, archaeologists did find one axehead with part of its wooden handle intact, in a bog in Co. Longford.



Drawing of a polished stone axehead found in a bog in County Longford. Only a few axes with handles have ever been discovered.

Q Do you think our ancestors valued stone axes? Why do you think so?

Q Can you think of a reason why the wooden handle survived in the bog?

Discover more about: Arrows

The Neolithic people used arrows to hunt with, and may also have used them as weapons.

HOW ARROWS WERE MADE

First they shaped the arrowheads from a hard rock called **flint**. Next they glued the arrowhead into a carefully made **splice** or cut in the wooden handle or shaft. A sticky substance called **resin** that comes from plants or trees was used as glue. They further secured the arrowhead in place, and prevented the arrow from splitting, by tying threads of animal **sinew** around the shaft. Sinew is the strong tissue that joins a muscle to a bone and was used by Neolithic toolmakers in much the same way as we use string today. Finally they inserted the **flight** – usually a trimmed feather – into splices made at the end of the shaft and secured it with more sinew.

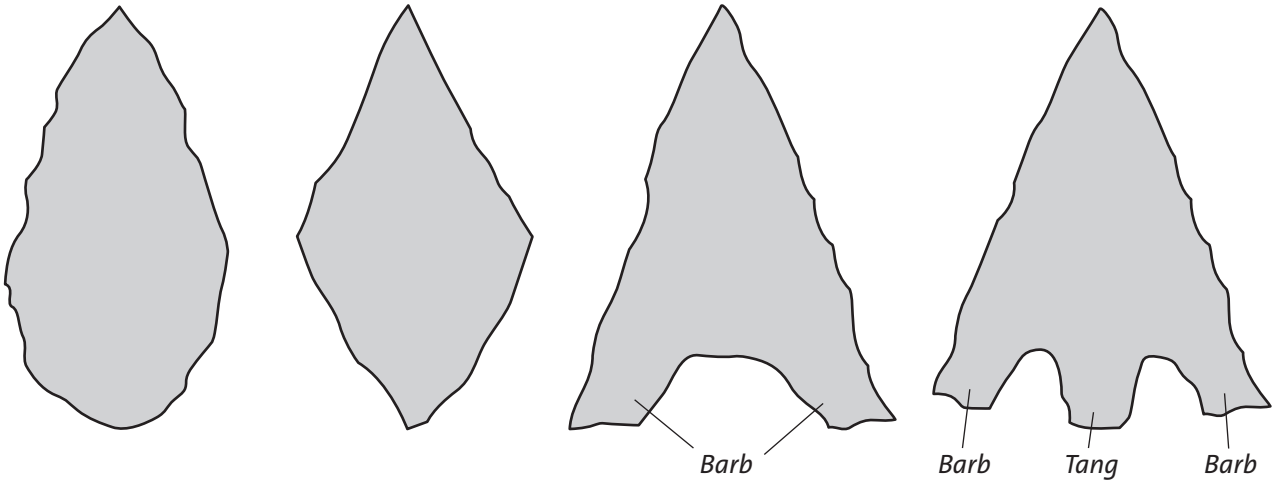
Q Do you think arrowheads were only used once or several times? Why?

Q After thousands of years in the ground, which part of the arrow is most likely to survive?

ARROWHEAD TYPES

Arrows were fired with a bow. As with Neolithic axes, we usually find only the stone part of the arrow – the arrowhead – as the wooden shaft has decayed. Remember that these have been in the ground for thousands of years.

Archaeologists have found four different types of arrowheads. They named the different types according to their shape:



Leaf shaped *Lozenge shaped* *Hollow-based* *Barbed and tanged*

THE TYTHER ARROWHEAD

The arrowhead in the box was found at Farna near Castlemaine and was shaped from a dark gray flint-like stone seems to be unfinished because some parts of it are more finely worked than the rest. The body of the arrowhead thickens as it narrows towards its point and the sides are uneven. Perhaps it's an unfinished piece made by an apprentice?

Q The Tyther Arrowhead doesn't belong to the four major arrowhead types. What is its nearest match?

Q Which design do you think is the best? Why?

FLINT PIECES

As we have learnt, flint was one of the most popular rocks for making tools in the Stone Age. This is because of two main reasons:

- Flint is very hard but it can be broken off in chunks easily
- When flint breaks it leaves a razor-sharp edge, like glass

Examine the flint pieces in the box closely and see for yourself why it was used to make weapons (such as arrowheads) and tools (such as scrapers). Be careful, as the edges of the flint pieces are sharp!

Q This cartoon character lives in the Stone Age. Do you know his name?

HOW THE ARROWHEAD ENDED UP IN KERRY COUNTY MUSEUM

In the summer of 2003 a young boy called Ciaran Tyther made a special discovery at Farna near Castlemaine. He tells the story:

"I was walking across a field and was looking for a stone to throw. I came across a stone that looked very interesting. Instead of firing it at something I put it in my back pocket and brought it home. I showed it to my grandfather who thought it might be something more than just a stone. He cleaned it and I put it away. I really forgot all about it until the following summer when I was looking for something interesting to do. I brought the stone into Kerry County Museum to get their opinion on whether it was special or not. I was delighted when their expert told me that the stone was in fact an ancient arrowhead from the Stone Age. I was proud to donate it to the Museum's collection and they've christened it 'The Tyther Arrowhead' after me!"

This is Ciaran five years later holding the Tyther Arrowhead in his hand beside our Stone Age man.

Q Do you think Ciaran made the right decision to donate the arrowhead to the Museum or should he have kept it for himself?

Discover more about: Neolithic pottery

Pottery was one of the great inventions of the Neolithic. The breakthrough came when people discovered how to control fire at specific temperatures.

Pottery was made for cooking and storing food. Sometimes it was also placed in tombs or graves with the dead. Perhaps they believed that the pottery could be used in the afterlife? Archaeologists often find broken bits of pottery at Neolithic excavation sites because they survive well in the ground over thousands of years.

This replica pottery vessel is decorated using sticks and other natural materials. The pot had a flat bottom but that was not always the case.

Look closely at the pots in this picture: They have round bottoms which was more practical when putting the pot down on the ground.

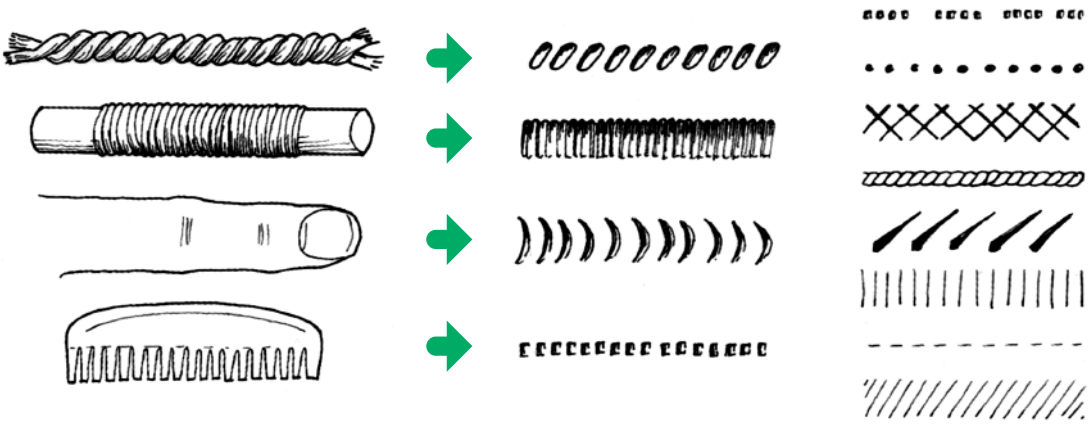
Q Do you think the invention of pottery was important?

Q Do you think it was a strange idea that pottery was placed in tombs and graves? Why?

HOW TO DECORATE A NEOLITHIC POT

The Neolithic people made different types of pottery vessels, in different shapes and with different decorations. Broad-rimmed bowls were popular in the Neolithic era and were decorated with finger impressions and incised (scraped with a sharp object) lines.

As you can see from the drawings below, it was very easy to decorate a pot. You could just use your finger, a stick, a comb or a piece of cord. The decoration was made on the wet clay before it was fired.



Q Can you think of anything else you could use to decorate a pot?

Q Can you draw the type of pattern it would leave?

Discover more about: Megalithic tombs

Our ancient ancestors believed in an afterlife, and they built large tombs for the dead. We call these tombs 'megalithic.' The word megalithic comes from two Greek words 'mega' and 'lithos,' meaning 'great stone'.

Neolithic people used large upright stones to create the burial chamber of a megalithic tomb. Then they placed other stones – called capstones – across the upright stones to create a roof for the chamber. There was an entrance at one end. The chamber was then covered by a cairn of smaller stones or a mound of clay. The remains of their dead, either the body (this is called **inhumation**) or the burnt bones (this is called **cremation**) were placed in the chamber of the tomb. They also placed grave goods such as tools (like the scrapers from Ballycarty in the box) and pottery vessels in the tombs.

Today, all that survives of many of the tombs are the large chamber stones.

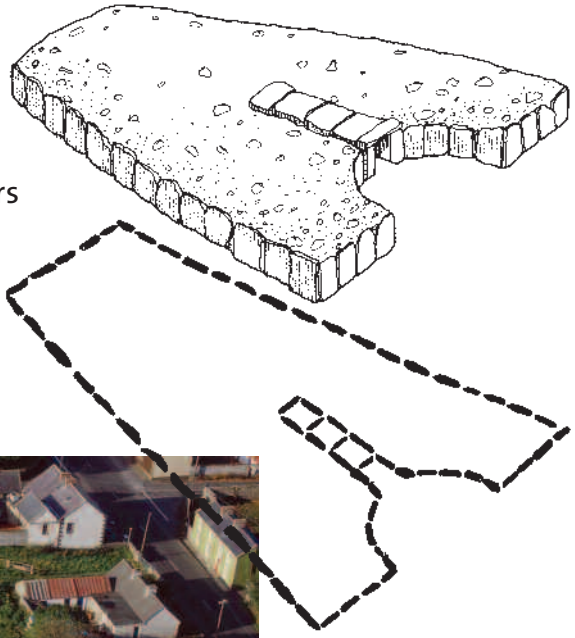
TYPES OF MEGALITHIC TOMBS

There are four types of megalithic tombs in Ireland, named because of their different forms and layouts. The four types are:

1. ***Court tombs*** 2. ***Portal tombs*** 3. ***Passage tombs*** 4. ***Wedge tombs***

➔ *COURT TOMBS*

In this type of tomb there is a courtyard around the tomb entrance. The entrance leads into one or more **chambers** (rooms inside the tomb). A **cairn** (large mound) of stones covers the tomb, but not the court. Court tombs date to around 3500 BC.



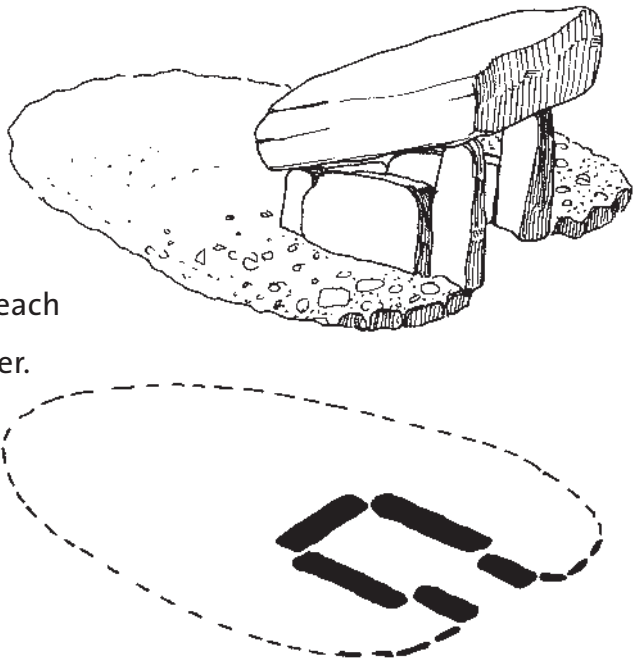
Court tomb at Creevykeel, Co. Sligo.

Q How many thousand years ago is 3500 BC?

Q Can you see the entrance leading into the tomb chamber?

Discover more about: Megalithic tombs

➔ *PORTAL TOMBS*



The portal tomb is simple in design. A large stone on top (weighing up to 100 tonnes!) is supported by three stones underneath, like a huge stone table with three legs. Stones on each side form the sidewalls to create a chamber. Stones on top of and around this chamber formed the cairn. Today, only the large chamber stones survive in most of these tombs. Portal tombs date to around 3500 BC.

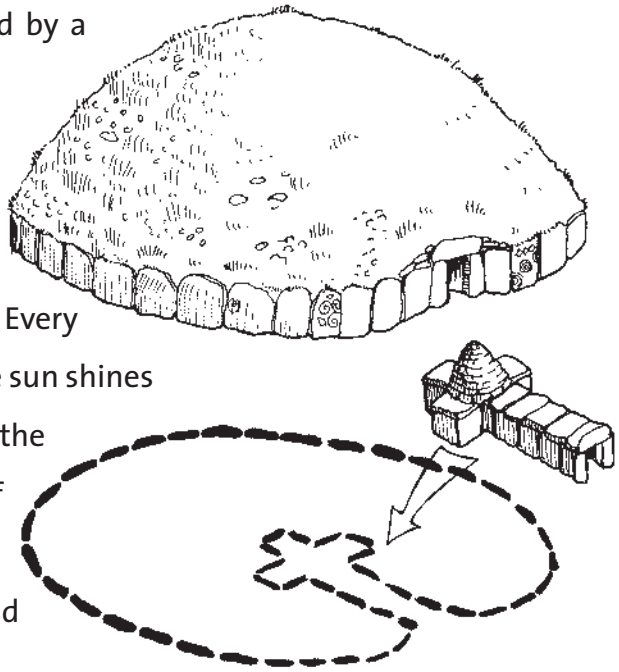
One of Ireland's most famous Portal Tombs; Poulnabrone, Co Clare.

Q How do you think such heavy stones were lifted into place?

Q Do you think it could have been done by one family or did it take the whole tribe?

➔ *PASSAGE TOMBS*

This type of tomb gets its name from having a long passage leading into the burial chamber. The passage and chamber are covered by a mound of earth and/or stone.



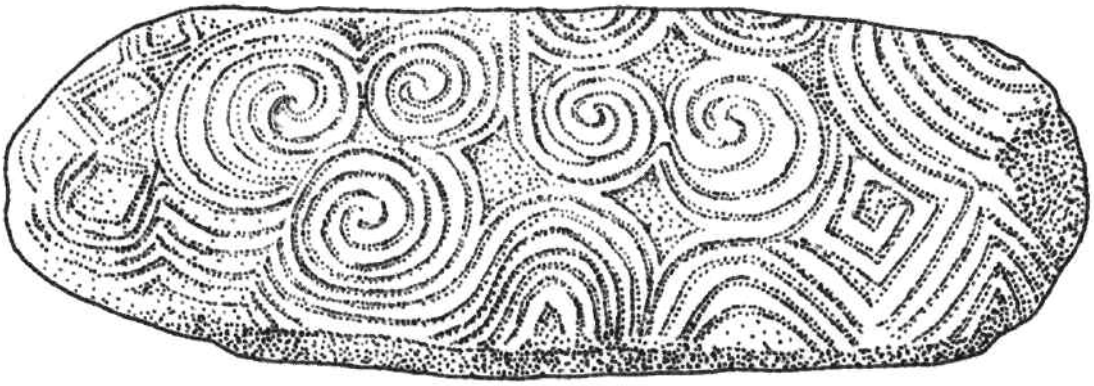
The best known passage tomb in Ireland is in **Newgrange**, County Meath. Newgrange is part of a cemetery of tombs at Brú na Bóinne (Bend of the Boyne). It was built about 3000 BC. Every year on the 21st of December (**winter solstice**), the sun shines into the central chamber through a roof box over the entrance. The kerbstones around the outside of the tomb at Newgrange are decorated with megalithic art, with motifs such as spirals and triangles carved onto the stones.

Newgrange is the largest passage tomb in Europe!

Did you know that Newgrange is 500 years older than the pyramids in Egypt?!
Did you know that there are about 230 passage tombs in Ireland but only one passage tomb has been discovered in Co. Kerry yet?!

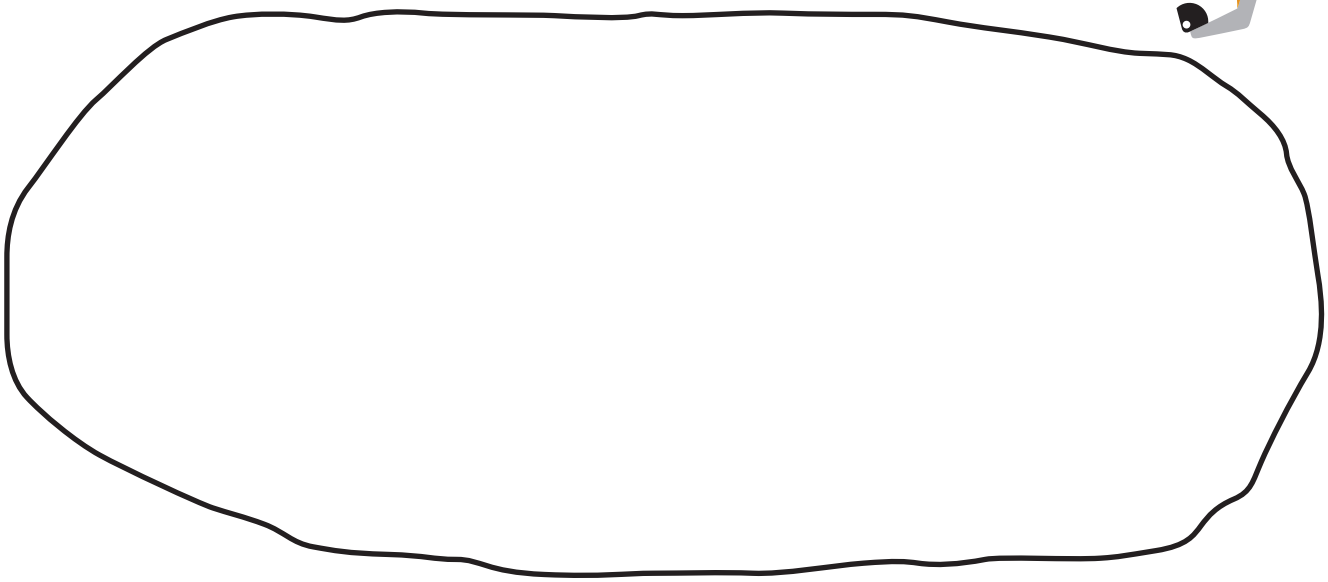
NEWGRANGE STONE

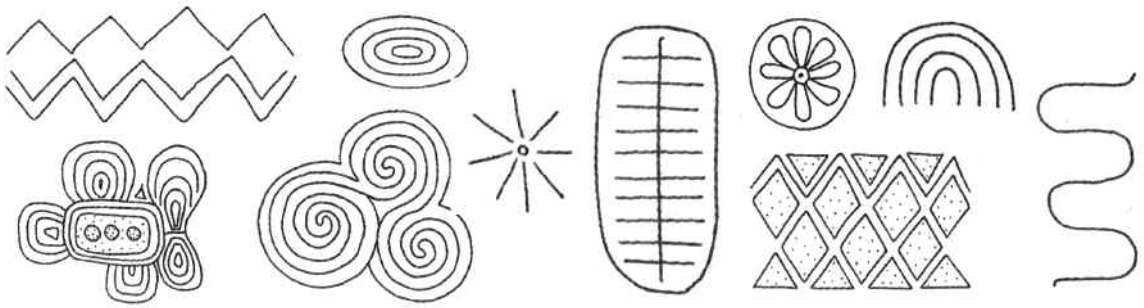
This is a drawing of the stone at the entrance to Newgrange.



Draw a stone like the one above and add in your own designs.

You can use any design you want.

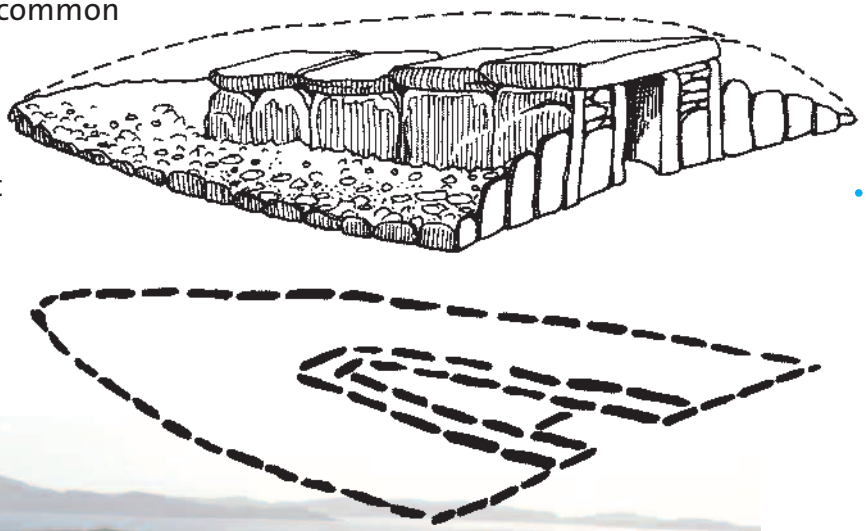




➔ *WEDGE TOMBS*

In a wedge tomb the burial chamber is built from large stones that are wider and higher at the entrance (forming a **wedge shape**), then covered by a cairn of stones. These tombs were built from around 2200 to 1800 BC (that is, from the Stone Age into the Bronze Age).

The wedge tomb is the most common type of megalithic tomb found in the south-west of Ireland. In Kerry, there is a wedge tomb at Coom, near Ballinskelligs.



Wedge tomb at Waterville.

Q ***Can you find Ballinskelligs on the map?***

Q ***Study the photo above. Can you see why this type of tomb is called a Wedge tomb?***

Discover more about: Megalithic tombs in County Kerry

Of the four main types of megalithic tombs, only two can be found in County Kerry. Of these all but one are Wedge tombs. Wedge tombs are the only type of megalithic tombs that were not built during the Mesolithic (New Stone Age) but in the Bronze Age.

The one megalithic tomb in County Kerry that is not a Wedge tomb is a Passage tomb at Ballycarty, near Tralee.

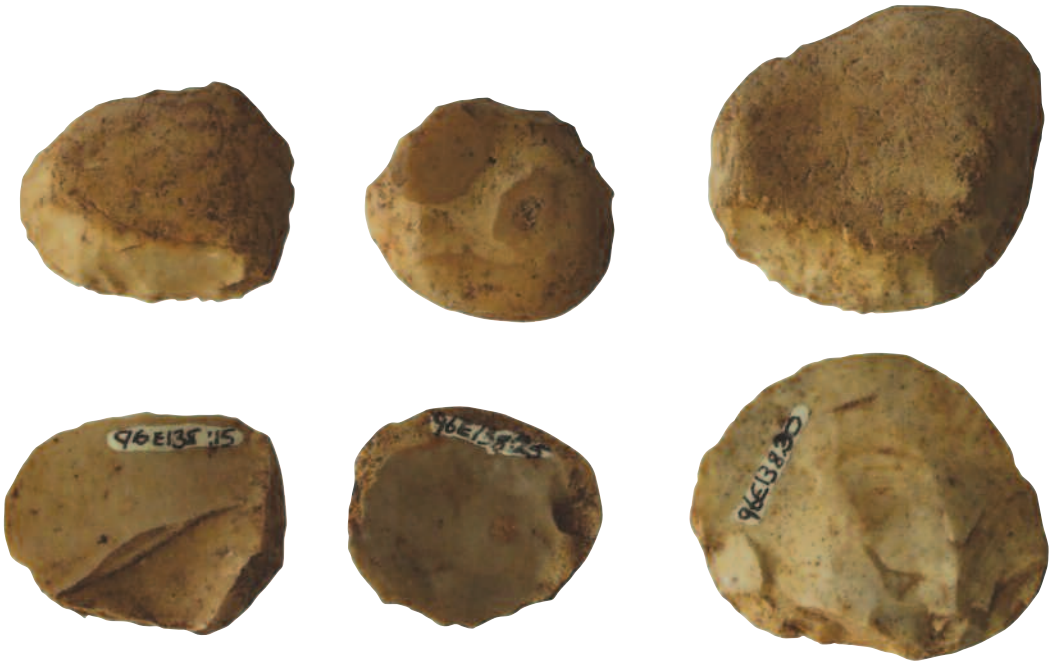
During the excavation of the tomb archaeologists found cremated human bone. They also found bones from many different animals, including cattle, sheep and dog. Some of the bones may have been left behind by the builders of the tomb after eating. Near the remains of the dead, buried thousands of years ago, archaeologists found grave goods, such as a stone bead, a bead made from antler and several flint tools like the three scrapers in the box. The archaeologists also found some flint tools, like the three scrapers in the loan box.

Passage tomb at Ballycarty.

Q Can you remember why this type of tomb is called passage tomb?

Q Can you find Ballycarty on the map in the box?

Discover more about: Megalithic tombs in County Kerry



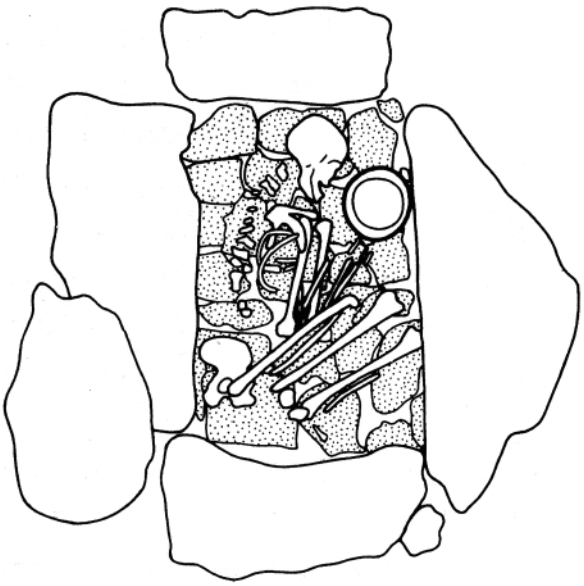
Look at the scrapers from Ballycarty that are in the box. There are only about the size of a €2 coin. Can you imagine how careful and thorough archaeologists have to be when excavating a site so that they do not miss small artefacts?

Archaeologists excavating Ballycarty Passage Tomb.

Discover more about: Burial in Prehistory

The way people were buried changed between the Neolithic (New Stone Age) and the Bronze Age. In the Neolithic period, people were often buried together, but in the Bronze Age they were often buried separately.

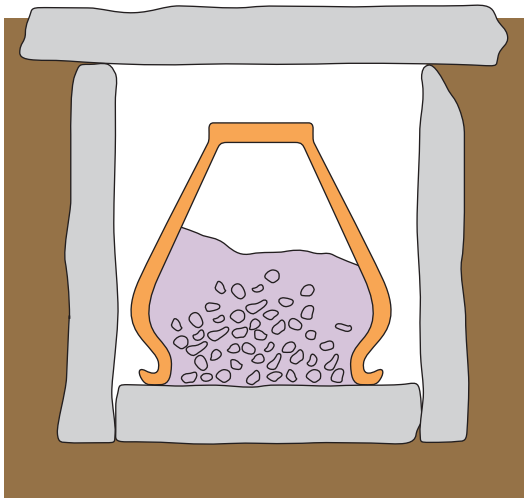
Our Bronze Age ancestors often buried their dead underground in stone boxes (**cist burials**). Sometimes, the bodies were not put in a stone box but in a simple pit (**pit burials**). Excavations often reveal skeletons that have been laid to rest in a crouched position and it is also common to find burnt bones. It is quite common to find grave goods or offerings, such as weapons, tools or jewellery, when excavating a Bronze Age grave.



The photo and drawing show a typical Bronze Age burial.

GRAVE POTTERY

The most common grave good of all is pottery. Some of these pottery vessels are believed to have contained food and hence they are called **food vessels**. So far, no trace of food has been found in any of them. For that reason some archaeologists don't think that they were made to contain food but perhaps as a resting place for the buried person's soul.



It must have been difficult to put the pot into the grave without spilling its content.

Another type of pottery in Bronze Age graves was made to contain burnt bones and these vessels are called **urns**. Urns are larger than food vessels. They are a lot wider at the top than at the bottom, which would make it easy for them to fall over. The reason why they were made that way is that they were never meant to stand 'the right way up'. Instead, they were filled with cremated bones and then put upside down into the grave.

These three pots are replicas of Bronze Age food vessels. Have you noticed they have neither lids nor handles?

Q Do you think that food was placed in the grave with the dead person and if so why?

Discover more about: The Bronze Age

Why is the Bronze Age called Bronze Age? The Bronze Age in Ireland was between 2,400 and 600 BC. It is called the Bronze Age because the people of that time discovered how to make objects from metal. The main metal they used to make tools, weapons and other items was bronze.

At first, people made tools using only copper. Then they discovered that they could make a stronger metal by mixing the copper with tin. The **alloy** they created (an alloy is a mixture of two metals) was called bronze. Because it is stronger, bronze is much better for making tools and weapons.

There is very little tin in Ireland, so Bronze Age people imported metal, probably from Cornwall in Britain. Copper, however, is found in a few places in Ireland, including Ross Island, a small island on Lough Leane, near Killarney, County Kerry.

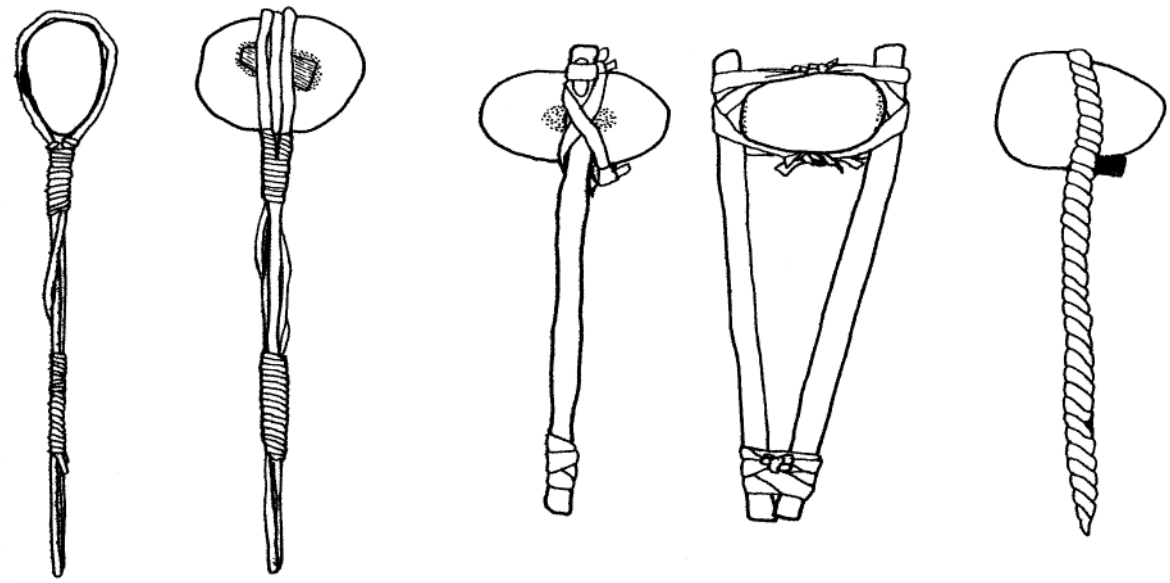
This display in Kerry County Museum shows a Bronze Age metalworker from Ross Island. Ross Island was the first place in Ireland where copper was produced around 2,400 BC.

Q Can you find Ross Island and Lough Leane on your map from the box?

Q Can you tell what the worker is doing in the above photo?

EXTRACTING THE COPPER

To use metal, you first have to get the rocks containing **metal ore** out of the ground. This process is called mining. To use the ore, the miners had to take the copper out of the rock. They did this by lighting a fire near the rock face, making the rock very hot (this is called **fire setting**). When the rock was hot enough, the miners threw cold water against it to crack it. Then they hammered on the rock with special mining hammers called **mauls** to break it up. Next, they mixed the rock with **charcoal** and burned it in a process known as **smelting**. Charcoal fires are very hot. Eventually, the copper melted and separated from the rock and charcoal as liquid metal.

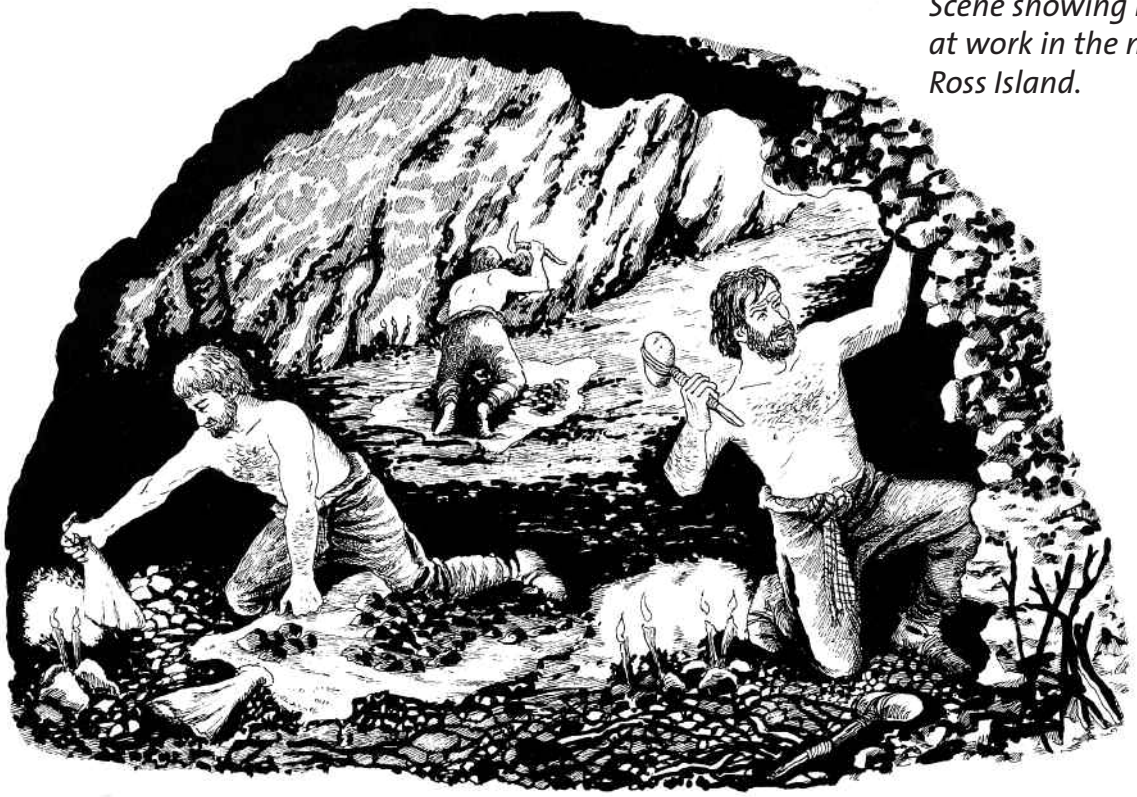


Some types of Bronze Age hammers like the one in the box.

Discover more about: Bronze Age mining in Kerry

Let's look at how Bronze Age people in Ireland mined for copper at Ross Island. Our ancestors discovered copper ore (it looks like green stains on a rock) at Ross Island about 2,400 BC.

At Ross Island, the miners made hammers from rounded stones they found at the lake shore. They scraped a line or groove in the stone and fitted a handle into the groove using bindings made from leather or animal sinew to hold it in place. The handle was probably made from wooden stems or branches. Look at the drawing to see how mining hammers were used.



Scene showing miners at work in the mine at Ross Island.

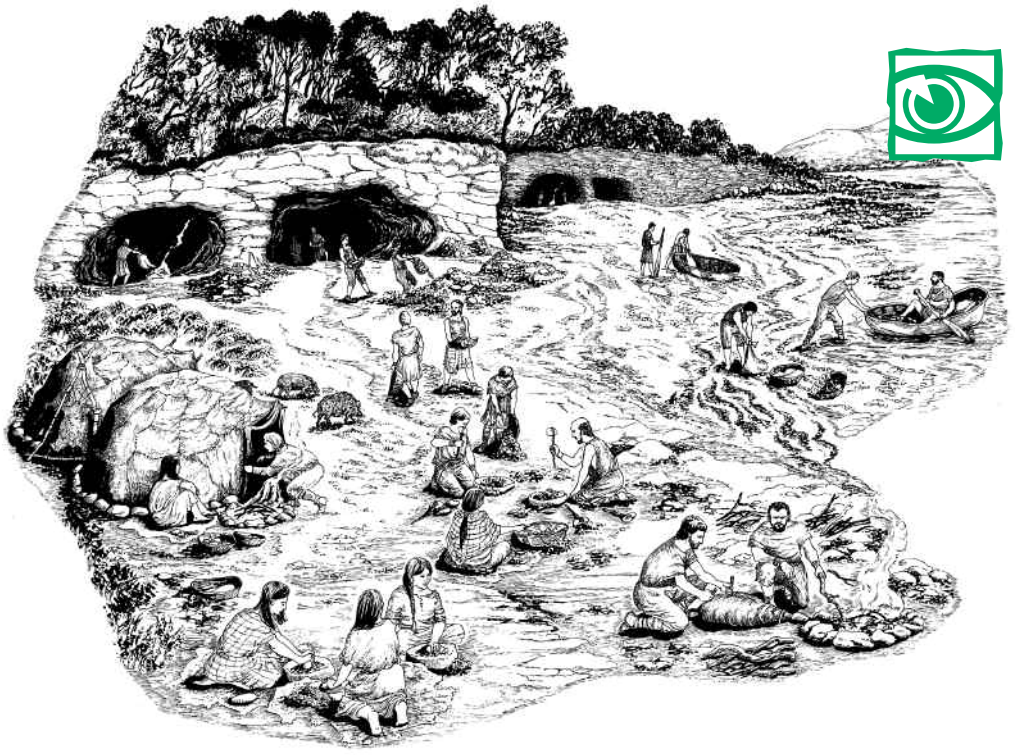
Carefully examine the drawing above. What is each of the men doing? Can you spot the mining hammers in the picture? What are they using for light?

Discover more about: Bronze Age mining in Kerry

Describe what is going on in this picture. Why are there no trees near the copper mine?

LIVING AT ROSS ISLAND MINE

The miners who worked at Ross Island lived beside the mine. We know this because the archaeologists who excavated the site discovered traces of the miners' huts. The archaeologists also found pieces of pottery that Bronze Age people used for cooking and storing food. Bones from animals such as cattle, pig and sheep were also found at the site. These bones are the remains of meals eaten by the people who lived at Ross Island.



There are many different types of work going on in this drawing. Apart from mining, can you name three of them?

Discover more about: Bronze Age tool-making

Making bronze tools with moulds

Once the miners had extracted copper from the rock at the mine, they mixed it with tin to make bronze. First, they melted the copper and tin together to make liquid bronze. Then they poured the hot, molten, bronze into moulds (see the miner in the picture below). Next, they allowed the bronze to cool and harden. When the metal had cooled, it was taken from the mould, and polished and sharpened with a sharpening stone.

Part of the Bronze Age display in Kerry County Museum.

Have a look at the moulds in the box. Can you see the mould in the photograph above?

TYPES OF BRONZE AGE MOULDS

➔ *STONE MOULDS*

Early Bronze Age people used a small stone hammer to carve out the shape of a tool in stone, smoothing the inside with sand. Stone moulds were open, one-piece moulds that produced simple, two-dimensional tools such as flat axeheads.

➔ *CLAY MOULDS*

New text: Later in the Bronze Age metalworkers developed new skills. This allowed them to make more sophisticated tools, weapons and even instruments, such as horns. With the help of closed two-pieced clay models with a wax core in the middle they produced hallow objects. The wax core would melt when the hot metal was poured into the mould, hence creating a hallow space.

BRONZE AGE AXES

Like those who came before them in the Stone Age, Bronze Age people used axes to chop down trees for wood. They also used them as weapons. They made axes by attaching axeheads to a wooden handle with bindings of animal hide or sinew. Archaeologists have found some axeheads that are decorated, and are too precious for everyday use. Bronze Age people probably used these decorated axeheads for ceremonial or religious purposes.

Look at the moulds in the box and see if you can figure out what type of tools they were used to make?

Discover more about: Bronze Age monuments

During the Bronze Age people built stone monuments to use in rituals or ceremonies. Excavations revealed that these monuments were used for burials. It is believed that some monuments marked the changing seasons and they may also have been territory markers.

Archaeologists have found the remains of many Bronze Age settlements in Ireland, including ceremonial monuments such as **stone rows, stone circles** and **standing stones**. and remnants of daily life such as **fulachtaí fiadh**.

STONE ROWS

The stone row is a row of closely-set big stones. Some of the stone rows are aligned with a point in the horizon where the sun or moon may rise at the equinox (the equinox happens twice a year, in March and September, when day and night are equal length) or the solstice (longest day - June 21st or shortest day - December 21st).

You can see fine stone rows at Eightercua, near Waterville and Dromkare in Co Kerry.

Q Can you find these stone rows on the Kerry map in the box?

Q Do you know of any stone rows in your area?

Over 170 stone rows exist in Cork and Kerry. The stone row in the picture is from Eightercua.

STONE CIRCLES

Another important ritual monument is the stone circle, which is a ring of free-standing, upright stones. The number of stones forming the circle is always uneven. The smallest stone circle in Ireland has just five stones but others have more than 100 stones. About 200 stone circles are known in Ireland, many of which can be found in Munster.

In County Kerry, there are many stone circles, including the Lissivigeen stone circle near Killarney, Druid's Circle near Kenmare, and Dromroe.

This Bronze Age community perhaps celebrates the end of winter or the beginning of the harvest season.

Q Can you find these stone circles on the Kerry map in the box?

Q Do you know of any stone circles in your area?

This stone circle is from Kenmare, Co Kerry.

STANDING STONES

Standing stones always consist of only one free-standing, upright stone. Some standing stones were erected as burial markers, probably indicating the grave of a high-status person. It is also believed, that they may have been boundary markers or route indicators, similar to modern sign posts today. They can often been seen from a great distance and are usually located on higher up areas.

The Iveragh and Dingle peninsulas in Co. Kerry are dotted with standing stones.

This standing stone is from Doory, Co Kerry.

Q Can you find Doory standing stone on the Kerry map in the box?

Q Do you know of any standing stones in your area?

FULACHTAÍ FIA (COOKING SITES)

Fulachtaí fiadh are the remains of cooking sites. Bronze Age people cooked their food by placing heated stones into a pit filled with water.

The fulacht fiadh was set up beside a stream, which made it easier to collect the water. One of the men is bringing wood for the fire used to heat the stone. The other man is putting the hot stones into the pit filled with water. When the water was hot enough, they put a joint of meat wrapped in straw into it to cook. Once they finished cooking, they took out the stones and threw the heat-shattered stones away. Over time, the broken stones built up and formed the C-shaped mounds we can see in the picture.

Q There are over 6,000 fulachtaí fia in Ireland. Have you ever seen one?

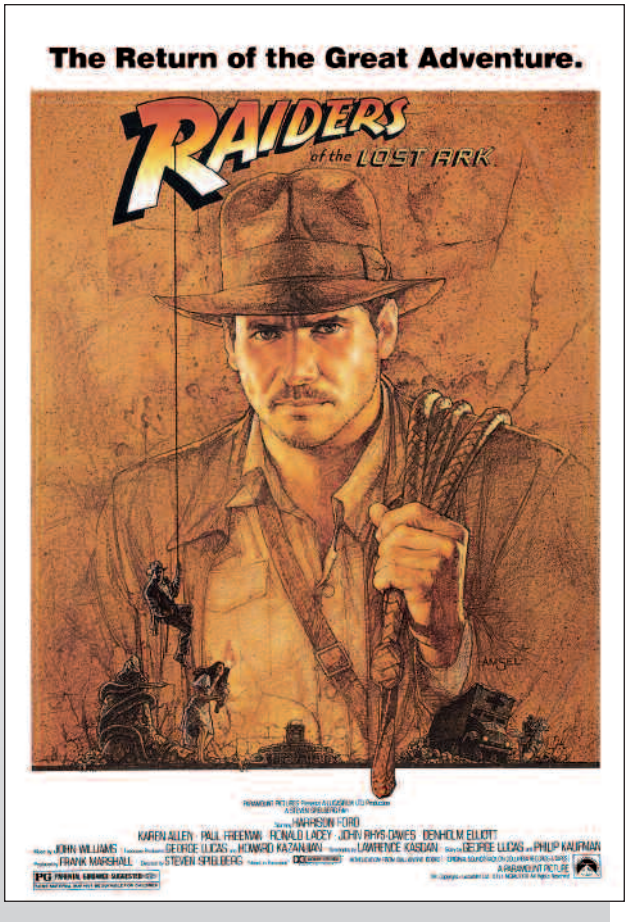
Q Some archaeologists think that these monuments were not used as cooking sites at all but that they were perhaps sweat houses or used for dying cloth. We don't know for sure as only a few examples have been excavated yet. What do you think?

Take a closer look at Archaeology

You may be wondering how archeologists go about their job. How do they find artefacts? What do they do with them? How do they work out the age of a little piece of bone or pottery? And why studying these artefacts teaches us about what life was like long ago?

WHAT IS ARCHAEOLOGY?

Archaeology is the study of how people lived in the past by examining the things they left behind, such as houses and tools. The buildings people leave behind (like castles or tombs) are called **monuments**. The portable objects they leave behind (like pottery or jewellery) are called **artefacts**. Archaeologists excavate (**dig**) monuments and try to piece together how people lived or worked by examining the artefacts found there. Unlike in the movies, archaeologists do not dig to find gold or treasure (although they might occasionally find it).



Okay, so in real life an archaeologist's job is not quiet as thrilling as that portrayed by Indiana Jones. No boobie-traps, shoot-outs, head-hunters or snakes pits! However there is the real excitement of hunting for clues and the satisfaction of piecing together what life was like long ago.

HOW DO ARCHAEOLOGISTS FIND THINGS?

All archaeological monuments are protected under the law. So before an archaeologist can excavate a site, they must get a licence from the government.

Once they are granted a license, a team of archaeologists carry out a survey of the site. They draw detailed maps and take many photographs. That way they have an accurate record on what the area looked like before the dig begins. Next they divide the site into a grid so that the location where artefacts are found can be placed on the map. Now the excavation can begin!

The site is first photographed, mapped and marked out in a grid. The archaeologists are divided into teams and given a space in the grid to work in.

The teams dig carefully in the soil often using small hand held trowels.

Some tools of the trade; camera to photograph the site and on going work, trowel and brush to clean dirt from artifacts, ruler and tape measure to make accurate records

Take a closer look at: Archaeology

Archaeologists dig a site layer by layer. Each layer is known as a **strata** and the build up of layers is called **stratigraphy**. The older ones are at the bottom, the newer ones at the top. So the deeper you dig, the further back in time you go. It's time-travel with a shovel!

The actual digging is carried out slowly and carefully, however, a mechanical digger may be used to remove the top soil as artefacts are unlikely to be found there. Shovels are also used at the begining but as they go deeper and there's a danger an object could get damaged, they use smaller tools like trowels. Sometimes they even use soft brushes to remove any soil from small or fragile pieces.

3

*Loose soil and stone can be passed through a **shaker screen** (sieve) to check for little artefacts that may have been missed.*

4

Accurate measurements, drawings, maps and photographs are made of what is being uncovered during every stage of the dig.

5

All the information gathered during the work is carefully written into an excavation log. This is very important as there may be many people working on a big dig and lots of artefacts, some very tiny, found. This log is used when the final report is written at the end of the excavation.

The team carefully records everything they uncover with photographs and drawings, because once the site is gone, it is gone forever. When the team have finished the excavation, a report is written detailing everything uncovered.

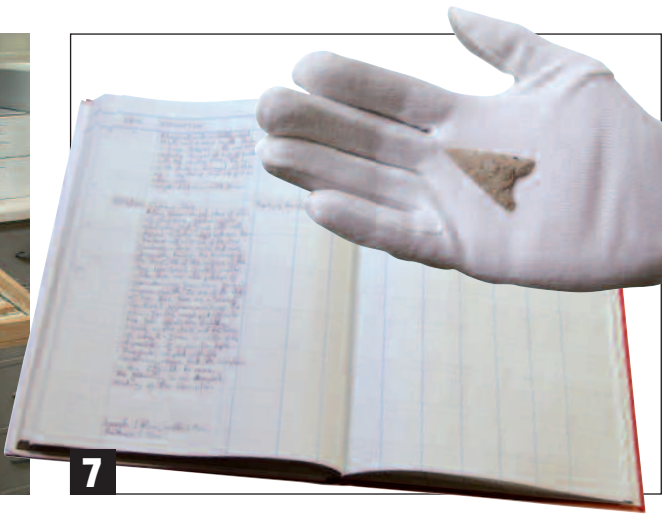
WHAT HAPPENS TO THE EXCAVATED ARTEFACTS?

Artefacts from excavated sites go into a museum once archaeologists are finished examining them. In the museum the artefacts might be put on display or they might be kept in a store room for safekeeping. In this way, they are preserved for future generations.

At the Kerry County Museum in Tralee, you can see many different kinds of artefacts found in Kerry. Some were excavated by archaeologists, and some were found by people working in bogs and fields. Others were the personal property of people who gave them to the museum. Many objects date back thousands of years, to the Stone Age but some are only 50 or 100 years old.

6

The artefacts are brought back to the archaeologists' office where they are cleaned and placed in drying racks. Later they are carefully studied by different specialists. When they are finished, they pass the objects on to the Museum.



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Every item that comes into the possession of the Museum is given a registration number. This number is listed in a register book and on a computer data base. This register book includes a brief description of the object. It also lists other basic information such as who found it, when and where, along with the specialist's opinion of the object.

BUILDING A PICTURE OF THE PAST

The archaeologist is like a detective trying to tell a story, but with pieces of evidence missing. Using the artefacts and building remains found on the excavated site as clues, the archaeologist will try to determine what life was like for the people who lived or worked there long ago.

HELP FROM SPECIALISTS

One way to find out as much as possible is to have specialists examine the artefacts. For example, the pottery is sent to a pottery specialist who will figure out where the pottery was made, and how old it is. They might also try to put some of the pieces back together. If the archaeologist found bone fragments on the site, they send them to an **osteo-archaeologist**. The osteo-archaeologist can determine if the bones are animal or human, and, if animal, the type of animal they come from.

8 *The artefacts are examined and if they are in bad condition they are **conserved**. Many different methods are used to stop them from falling apart altogether. They are then placed in specially designed boxes. Each object and it's box is labelled.*

9 *The individual artefact boxes are placed in storage boxes. These larger boxes are also carefully labelled.*

10 *The storage boxes are put into the Museum Store by the **Collections Officer**. Their job is a bit like a librarian's, but instead of books, they look after artefacts. Specialists with an interest in the artefacts are allowed to visit the store and examine them.*

RADIOCARBON DATING

It is important to archaeologists to find out how old artefacts are. One of the ways they figure this out is by **radiocarbon dating**. Every living organism has a set amount of **carbon isotope C14**. When the organism dies, the amount of C14 it contains decreases over time at a measurable rate. By measuring the amount of C14 remaining in organic artefacts (such as bone and wood), it is possible to calculate how old it is.

WHAT ELSE DO ARCHAEOLOGISTS DO?

Not all archaeologists work on excavations. Some study maps, books and photographs to get background information on the area in which an excavation is taking place. Others survey the excavation site, which means they measure, draw plans and take photographs of the site. Some archaeologists work in the laboratory, carefully examining artefacts under a microscope or treating them so they don't decay now that they're out of the ground. And some archaeologists even work underwater, examining things like old shipwrecks.

11

The Museum Store has it's own climate controlled environment. It's not too hot or too cold, too humid or too dry. This is very important in keeping the artefacts in good condition. They are regularly checked to insure all is okay.

12

Finally when the opportunity arises, the artefacts are taken from the store and put on display in the Museum Gallery. That way everyone can see and enjoy objects left behind by people who lived long ago.