



This Resource is designed to introduce students to Pre-Christian Ireland and the archaeological evidence that helps us understand what life was like during this time period. It focuses on key areas that frequently appear in the Leaving Certificate examinations.

The presentation explores the principles of production methods, design techniques, and religious practices. These core learning scenarios aim to support students in developing the knowledge they will need to complete the activities on the 3D viewers.

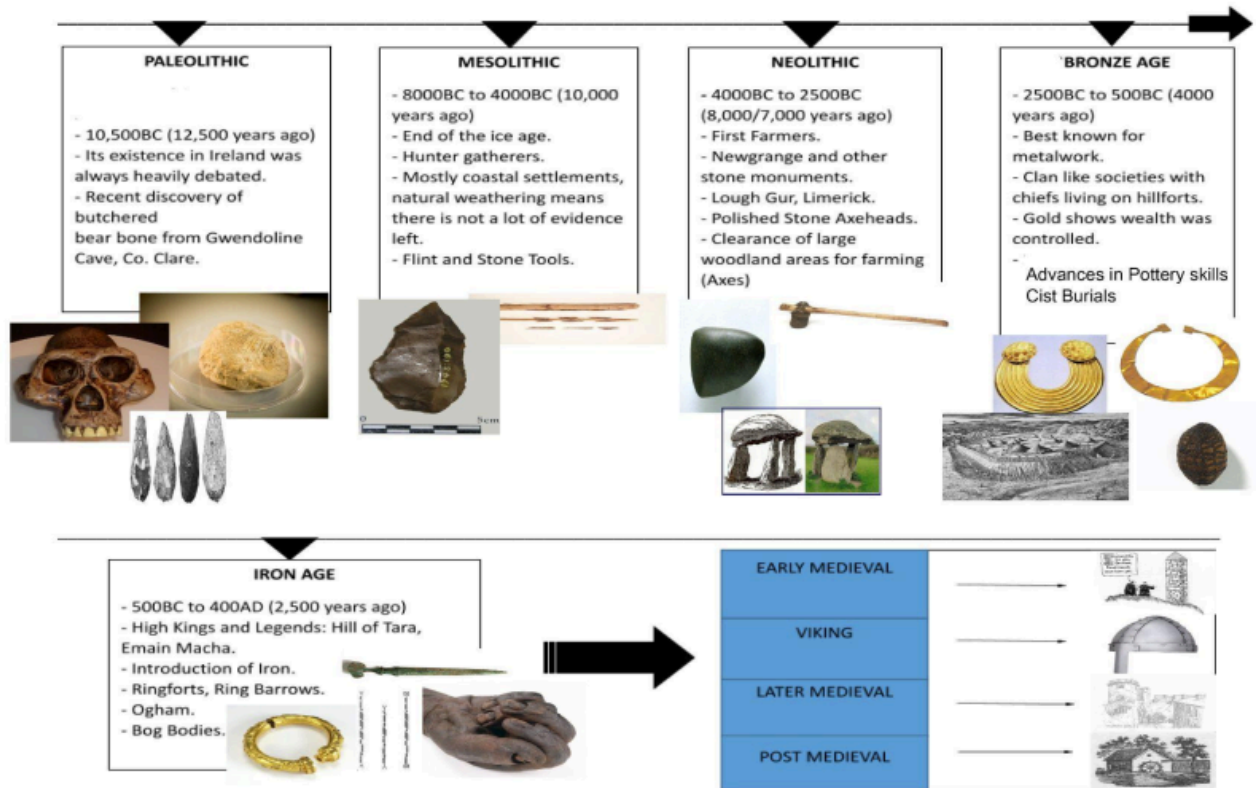
Learning Objectives

This resource aims to support students in:

- Analysing how societal development was shaped by the introduction of new materials and technological innovation.
- Evaluating the sourcing, trade, and economic significance of key Bronze Age materials, including copper, tin, bronze, gold, and clay.
- Investigating the production processes, skills, and craftsmanship involved in Stone Age and Bronze Age artefacts.
- Critically examining Bronze Age pottery and burial rituals as reflections of social structure, belief systems, and identity.
- Applying an understanding of historical design principles and construction techniques.
- Identifying, analysing, and interpreting key visual and formal elements characteristic of Bronze Age design.

KEY WORDS

- Bosses**
Small raised bumps or dots often used as decoration on metal objects.
- Rivets**
-small metal fasteners, arranged in horizontal rows with conical heads
- Flange Twisting**
A technique where the edges of a gold bar are hammered thin and then twisted to look like a rope.
- Concentric Circles**
Circles that share the same center, like a target
- Repousse**
A common decoration method where a design is hammered into the back of a thin metal sheet so the pattern appears raised on the front.
- Incision**
Cutting or carving a design directly into the front of an object to make it look fancy or detailed.
- Chevrons**
Zig-Zag :Pattern
- Lozenges**
Diamond shape pattern



The **Bronze Age** began around **2500 BC** in Ireland, after the **New Stone Age (Neolithic)** and before the **Iron Age**. These time periods were named after the materials used to create tools and weapons. They show how society progressed through the discovery and use of new, innovative materials.

To understand how the discovery of bronze revolutionised people’s lifestyles, we first need to understand the ages that came before.

The **Stone Age** can be divided into three periods:

The Old Stone Age (Palaeolithic)

During the Palaeolithic period, Ireland was covered in ice during the last Ice Age. Because it was too cold and harsh, there is no clear evidence of permanent human settlement in Ireland at this time.

The Middle Stone Age (Mesolithic) – 8000 BC to 4000 BC

As the climate warmed, people began arriving in Ireland in dugout canoes. These people were hunter-gatherers who moved from place to place in search of food and water. They mostly lived near rivers and coastal areas.

They used flint stone tools such as arrowheads and axes. These tools were made using a technique called “flint knapping,” where sharp flakes were chipped off stone to create cutting edges.

The New Stone Age (Neolithic) – 4000 BC to 2500 BC

The Neolithic period saw major changes. The introduction of polished stone axe heads allowed people to clear forests more effectively. This led to permanent settlements and the beginning of farming.

People built large stone monuments, the most famous being Newgrange. These monuments show advanced building skills and religious or ceremonial beliefs.

The Bronze Age – 2500 BC to 500 BC

The Bronze Age began with the discovery and use of copper, bronze (a mixture of copper and tin), and gold. This marked a huge technological advancement.

Metal tools and weapons were stronger and more durable than stone ones. Axes, spears, and arrowheads were now commonly made from bronze and were used both for farming and for warfare.

More people arrived in Ireland during this time, increasing competition for land and resources. Trade became more important, especially for obtaining tin, which was needed to make bronze.

Gold also became significant during the Bronze Age. It was used to create jewellery such as torcs and lunulas. The possession of gold objects showed wealth, power, and high social status, suggesting that society was becoming more structured and hierarchical.

Overall, the discovery of bronze transformed daily life, improved farming and warfare, increased trade, and led to greater social organisation.

Timeline of axe heads

Progression of tools from mesolithic period - bronze age



Flint Axe Head
Mesolithic Period
Made from type of stone called flint, through a process called "Flint Knapping" - banging large stone across edges of flint to create sharp edges.



Polished Axe Head
Neolithic Period
Stronger stone, allowed neolithic people to clear more areas of dense forest)



Flat Axe Head
Early Bronze Age
Cast in molds, bronze flat axe heads were more uniform in shape and size than Polished stone axes. This standardization made them easier to produce



Socketed Axe Head
Mid-Late Bronze Age
Socketed axes improved on earlier flat and flanged designs. They had a hollow socket for a stronger haft attachment. A side loop allowed binding to secure the head firmly in place.

The first metal to be used in Ireland was copper. There were large copper mines at Ross Island (near Killarney) and Mount Gabriel in Co. Cork. A stone lamp would have enabled the miners to see while working in the mines. Some mines were in the ground or in caves so Bronze Age miners used a stone lamp to see. This lamp was made out of stone, with the centre filled with animal fat. Moss (polytrichum) was used as a wick. They would place the moss on top of the animal fat , and light the moss on fire to give them some light in the dark mines.

Copper was mined using a technique called fire setting which involved setting a fire against the rock face and then throwing water on the heated surface. The copper ores were then prised from the rock face using mauls and hammer stones. The ores were crushed before being smelted. The smelting process involved removing the sulphurs by heating. A waste product was created during this process called slag. As a result of the smelting process the metallic copper could be formed into ingots or 'copper cakes' for transport to the metalworkers. While copper is easy to shape and mould it is a very soft metal so it was not very suitable for making tools and weapons.

Gold

Gold was the next metal to be used in Ireland. It was available in Ireland's rivers and streams but it was not plentiful. It was the preferred metal to make non-functional objects such as jewellery and decorative ornaments. Ireland had rich gold reserves, gold was a highly valued and precious metal because of its rarity and its malleable and flexible properties and can be worked by hammering rather than having to be worked through casting, annealing or soldering. Its use may have coincided with the rise of the first 'aristocracies' in these communities, who would have adorned themselves in gold to show their wealth and power.

Bronze

Bronze was the next metal to be discovered. It was found by mixing copper with tin. Bronze is a much harder metal therefore Bronze tools could be used for longer periods of time before they had to be sharpened. This flat axehead was the first type to be made during the Bronze Age. It was cast by pouring liquid bronze into a hollowed out stone mould.

As the Bronze Age progressed so did casting techniques. The next type of mould to be developed was the two-part mould which used two hollowed out stones which fit together to create a cast. Using this casting method it was possible to create daggers and socketed axe heads. Pass around the socketed axehead and looped arrowhead – (made using a two-part mould) In the latter part of the Bronze Age clay moulds were used to create detailed objects such as jewellery.

Timeline of Burial Practices

Newgrange
Neolithic Period
3200 BC



Wedge Tombs
Neolithic- Early Bronze Age
2500 - 2300 BC



Boulder Burial
Mid-Late Bronze Age
1500-800 BC



Cist & Pit Burials
Bronze Age
2500- 500BC



Newgrange



3D Viewer

Neolithic people built impressive monuments called megaliths to honour and bury their dead. In Greek the word 'Megalith' means 'Big Stone'.

I am sure you have heard of Newgrange in the Boyne Valley, Co. Meath? It is a very large passage tomb built in 3200BC - so is 600 years older than the Pyramids in Egypt.

Newgrange Burial Mould built circa 3200 BC

Every year at dawn, the Winter Solstice sunrise on December 21st lights up the internal 19m long passage and main chamber within this burial mound. This takes place when a shaft of sunlight shines through the roof box located above the entrance door. The New Stone Age people knew that the Winter Solstice was the

shortest day of the year. It is thought that they built the burial mound in this way so that they could honour the Sun, who would make the days longer, and whose sunshine would make the crops grow.

It was a burial site so you would expect human bone to be found and some grave goods. 750 human bone fragments were found, animal bone, and two ancient gold torques (torcs), a golden chain and two rings. These were believed to have been grave goods.

There are many beautiful geometric stone carvings at Newgrange including on the chambers walls and on the large kerb stones arranged around the outside of the burial mound.

The building of Megalithic burial sites came to an end at the end of the New Stone Age period but were replaced with other burial methods.

The Spiral Motif

Excavations and restoration carried out between 1962 and 1975 by Michael J. O'Kelly brought renewed scholarly attention to the site. In his work *Newgrange – Archaeology, Art and Legend*, O'Kelly referred to the motif as the “Three-Spiral symbol” and investigated local beliefs that the rising winter solstice sun illuminated the stone in the chamber’s recess. His research confirmed the intentional solar alignment, reinforcing the likelihood that both the monument’s structure and its internal artwork were conceived as part of a unified symbolic and ceremonial design. The tri-spiral motif inside Newgrange stands as one of the most compelling elements of Irish megalithic art. Carved into a stone within the back recess of the chamber, the design consists of three interconnected spirals arranged in a triskelion formation. Its flowing, continuous lines create a sense of rhythm and motion, suggesting balance, continuity, and cyclical renewal. Though its precise meaning remains unknown, the motif continues to inspire interpretation and fascination.

Dating back over 5,000 years, Newgrange predates the arrival of the Celts in Ireland by approximately 2,500 years, making the tri-spiral a pre-Celtic symbol. The monument itself is a UNESCO World Heritage Site and one of the most sophisticated prehistoric structures in Europe. A 19-metre (62-foot) passage leads from the entrance to a central chamber adorned with intricate megalithic carvings. The builders demonstrated remarkable architectural and astronomical knowledge: each year, around the winter solstice, sunlight enters through a specially constructed roof-box and travels along the passage to illuminate the inner chamber.

The alignment with the winter solstice sunrise reveals a deep understanding of celestial cycles. This annual event, during which light penetrates the monument’s darkest interior, is often interpreted as symbolic of renewal and the triumph of light over

darkness. Such symbolism aligns naturally with the spiral motif, which itself may represent cycles of life, death, rebirth, or cosmic movement.

The tri-spiral measures approximately 30 cm (12 inches) in diameter, smaller than the more prominent triple spiral carved on the entrance stone. Despite its modest size, it is executed with exceptional precision. The evenly carved grooves and balanced composition suggest careful planning rather than spontaneous decoration.

Burials Rituals



Burials and Monument Structures

The transition from the Neolithic to the Bronze Age in Ireland was gradual. Burial practices show continuity and change rather than a sudden shift, reflecting evolving beliefs and traditions.

Wedge Tombs (c. 2500–2000 BC)

Wedge tombs belong to the Neolithic–Early Bronze Age transition and are the most common megalithic tombs in Ireland, with over 500 examples.

Key features:

- Wedge-shaped chambers that narrow toward the back
- Usually face west or southwest
- Covered by a cairn (stone mound)
- Used for multiple burials, often cremated remains

They show the continuation of earlier Neolithic burial traditions.

Boulder Burials (c. 1500–800 BC)

From the Middle to Late Bronze Age, boulder burials are mainly found in southwest Ireland.

Structure:

- Large stone resting on three or more supports
- No burial chamber or covering mound
- Built at ground level

They are often associated with ritual sites like stone circles and were likely ceremonial rather than used for burials.

Cist and Pit Burials

These were the main burial types of the Bronze Age and were simpler than earlier monuments.

Cist Burials:

- Stone-lined rectangular grave covered with a capstone
- Often held a crouched body or cremated remains
- Sometimes included pottery or personal objects
- Over 700 recorded in Ireland

Pit Burials:

- Simple unlined holes in the ground

- Contained bodies, cremations, or pottery
- Varied in size and shape

Key Developments

- Shift from large communal tombs to individual burials
- Emergence of cemeteries
- Increased importance of grave goods

Overall, burial practices show a move toward greater individual identity and changing religious beliefs, with simpler burial forms becoming dominant over time



Cist Burials

Cist burials provide valuable insight into the burial practices and belief systems of Bronze Age communities. The inclusion of grave goods suggests people were buried with items they believed were needed in the afterlife.

Items found in cist burials:

- Pottery vessels, often containing food such as oats, typically placed near the head of the crouched body
- Gold jewellery such as torcs, gorgets, and lunulae, indicating wealth and status
- Tools and weapons, possibly included for protection

Burial Traditions & Pottery



Burial Traditions & Pottery

Substantial finds have been made in peat bogs, where objects were often deposited as votive offerings, as well as in burial tombs. This suggests that people of this time were buried with their possessions in the belief that these objects would follow them into the afterlife. These objects were referred to as “grave goods”. The most common items found in Bronze Age graves are weapons, tools, and jewelry, but other objects such as pottery, baskets, and clothing have also been found.

Pottery

Pottery in Neolithic Period- Simple hand made coiled pots with a round base. Potters used stones to smooth the coils of clay together to make it shiny and waterproof. Impressions or marks on clay were made using fingers, fingernails or bird bones. These pots were then fired over an open hearth or bonfire at a temperature of 600- 800 degrees. The clay itself was mixed with crushed flint to make it stronger and long lasting.

In 2000 BC -Beaker people from France and Spain (Central Europe) named after their characteristic pottery, introduced Irish bronze age people to a new form of pottery This was quite different from the crude, round -bottomed pottery of the Neolithic and was highly decorative.

The Bronze Age beakers/ groove vessels were large vessels with curved sides and lots of decoration. Much like the Tripartite bowl food vessel and the Incised Groove vessel in our collection.

Tripartite bowl food vessel

This is an early Bronze Age food vessel. The tripartite bowl is largely intact, with a beveled rim with impressed comb decoration; its external surface is divided into three zones by two cordons or raised bands, decorated with triangular motifs. Either incised or comb-stamped lines decorate each zone. There are incised horizontal grooves immediately under the rim, with a band of vertical grooves below this. There is an area of vertical grooving in the middle of the vessel and horizontal comb-impressed lines on the lower section. There are lime accretions on the vessel surface. Found in Mitchelstown, Co. Cork.

Incised Groove Vessel

The vase has an angular profile and is decorated entirely with incised grooving. While a her-ring-bone motif rings the internal rim, the external decoration is zoned. There is a vertical ladder pattern on the rim/ neck, a band of alternate vertical and horizontal panels on the shoulder with a herring-bone design beneath, and the lower body has infilled chevron patterning with a her-ring-bone motif on the lower section. There is a circular hole in the base. This vessel was found in Mitchelstown, Co. Cork.

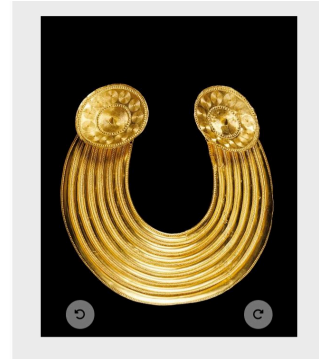
The Bell Beaker folk got their name from the distinctive upside down (or inverted) bell shape they used to produce their pottery. Much of the Bell Beaker pottery found in Ireland is undecorated, but across Europe, archaeologists have found large amounts of highly decorated examples which used uniform geometric designs separated into horizontal zones. Archaeologists in Ireland have found beaker pottery in settlements where people lived, at ceremonial sites where people worshiped their gods, in burials sites and early copper mines. The term 'beaker' suggests that these vessels were initially small and used for drinking liquids, such, as beer or meade. Larger examples of beaker pottery have been found which have charring and food residue on them, proving that they were used for cooking. Beaker pottery has been found in Neolithic megalithic tombs including at Newgrange but also in stone lined cist graves from the Early Bronze Age period, such as in the wedge tomb at Lough Gur, CO. Limerick.

Scientists have found that these vessels have traces of porridge or ale inside, and because of this they are often called food vessels. However, groove-ware vessels are usually found buried with the dead and not in a house. Because of this, some archaeologists believe that the food inside was needed by the dead on their journey to the afterlife.



A stone circle is a monument of standing stones arranged in a circle. Sizes and numbers of stones varied from each location they were found. Stone circles are the most common field monuments from the Bronze Age. The largest stone circle found in Ireland is located in Lough Gur, Co.Limerick. Stone circles were built for ritual or religious purposes. On June 21st (the longest day of the year) people would gather around the standing stones to worship the god of the sun. This demonstrates the people had a strong understanding of astronomy. During the solstice they celebrated the power of the sun and its important role in growing their crops.. At sunrise each year they watched a large shaft of sunlight shoot through the circle's entrance and then exit it via a 'v' shape cut into two touching standing stones. These are located directly opposite the entrance. There are 113 standing stones in Grange Stone Circle. Some of these weigh several tonnes. As you know, machinery such as diggers and trucks did not exist then so a huge amount of manpower would have been needed to move and position each of these stones. The local chief would probably have organised his subjects to do this work. Archaeologists found lots of broken pottery at the base of the standing stones. This has led them to believe that the drinking of beer and smashing of their beer beakers was part of ceremonial ritual here.

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Influences of Patterns and Design in Bronze age Jewellery

During the Bronze Age, the sun appears to have played a central role in both daily life and spiritual belief systems. Many patterns and decorative designs from this period are thought to reflect solar influence, demonstrating how closely ancient communities observed and revered the natural world.

Gold, with its radiant yellow sheen and resistance to tarnish, was widely associated with the sun. Its brilliance and enduring quality made it an ideal material for objects that may have symbolised light, power, and divinity. Across Bronze Age Europe, finely crafted gold ornaments such as lunulae, torcs, and discs suggest a symbolic link between precious metalwork and solar imagery.

Circular shapes were also prominent in Bronze Age design. The circle, mirroring the sun's form in the sky, became a powerful visual motif. This can be seen in artefacts such as sun discs and ceremonial shields, where concentric rings, radiating lines, and spiral patterns evoke the sun's energy and movement.

Decoration from the Bronze Age frequently incorporated circular impressions, spiral forms, and radiating patterns. These repeated designs may have symbolised cycles of time, seasonal change, and renewal concepts closely tied to the sun's daily rising and setting and its yearly path through the seasons.

Shields, too, often featured bold circular bosses and intricate concentric ornamentation. While functional in warfare, some highly decorated examples were likely ceremonial, possibly representing the sun's protective or life-giving power. The recurring use of radial symmetry and flowing patterns across different materials seen in pottery, bronze and gold of this time, suggests a shared symbolic language rooted in solar reverence.

Overall, interpretations of Bronze Age art and design suggest that the sun was seen as a powerful force influencing farming, the measurement of time, survival, and spiritual beliefs. Through the use of gold, circular shapes, and radiating patterns, craftspeople

expressed the sun's importance in both everyday objects and ceremonial items.



Yetholm Shield

- Made by hammering bronze into thin sheets.
- This metalworking skill developed in the Late Bronze Age.
- Originally believed to be from Antrim, but actually taken from the River Thames at Mosley (England) in 1864.

Decoration & Design

- Central **umbo (boss)**
- Eleven concentric raised ribs
- Rows of small decorative bosses
- Made using the repoussé technique (hammered from the back to create raised designs)

Purpose

- Likely ceremonial rather than for combat
- Too thin and fragile for real battle use
- Damage occurred when it was removed from the river



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Cape Castle Bucket

- Found in the Cape Castle bog near Arroy in County Antrim
- This Late Bronze Age bucket can be dated to around 700 B.C and was discovered in 1880.
- Decoration above the shoulder -small, raised bosses.
- Below the shoulder-triangles which were produced in the repoussé style.
- There have been numerous repairs made on the object
- Gap at the base, has been damaged by corrosion, has been filled with an unknown substance.
- Like the cauldron, this bucket would have been used at feasts.
- Hosting lavish feasts and giving vast quantities of alcoholic drink to followers was an important part of the political career of a prehistoric leader during this period.

