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Dig into
Ancient Ireland

What were the main technologies
used during the Neolithic?



What were the main technologies used during the Neolithic?

The Neolithic period brought with it a **change** in the types of **technologies** that people used.

Stone tools (lithics)

As with the previous Mesolithic period, people in the Neolithic continued to use **stone** as the material for most of their tools. Archaeologists use the word '**lithics**' when talking about stone tools.

Flint was the main type of stone used to produce tools. It is a **hard stone** that breaks into smooth, sharp-edged pieces. Lumps or **nodules** of flint can be found exposed in cliff faces and frequently on beaches, particularly in County Antrim.

Nodules of flint were worked by removing **flakes**, some of which will be waste, and some of which will be converted into **tools**. This process is called **flint knapping**.

A number of stone tool types could be made from flint:

- **Arrowheads:** These were fired from a bow. Were mostly used for hunting but also as weapons in raids on other groups.
- **Javelin head:** Similar to arrowheads, these were larger and used like a spear.
- **Knives:** These were used for various cutting activities, such as cutting meat. Some had smooth sharpened edges while others were flaked at the edge to produce a toothed shape, so it could be used like a saw.
- **Scrapers:** These tools were used to process a number of materials, including skin/hide, as well as wood, bone or antler.
- **Axes and adzes:** These were used for cutting and shaping wood. These tools were initially shaped by flaking, but were sometimes finished by being polished all over, or just on the cutting edges.



Flakes could be removed by striking the nodule or core with another object, such as a hammer stone or antler (seen here), with the force dislodging flakes.

Flint was the main type of stone used to produce tools.



Flint 'hollow' scrapers (left)

Flint arrowheads (above)

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Another type of stone used by Neolithic people in Ireland was **porcellanite**. This is a hard, dense rock which was used mainly in the production of axes. Porcellanite axes would have been used for chopping wood, allowing Neolithic communities to cut down much larger trees than they could with flint tools.

This hoard of polished stone axes were found on the Malone Road, not far from the Ulster Museum where they are on display. They are very well made and extremely large and heavy. Their size and weight suggests that they were not intended for use, but were created for a ceremonial purpose. These axes are made from porcellanite, a type of rock which can only be found in two locations in Ireland; at Tievebulliagh Mountain (County Antrim) and on Rathlin Island.



The Malone Road Hoard (Belfast)

Porcellanite is a hard, dense rock which was used mainly in the production of axes.

Porcellanite axes have been recovered as far away as Cork, the south of England and the Northern Isles of Scotland, which suggests trading networks and contacts between groups across Britain and Ireland during the Neolithic.



Tievebulliagh Mountain, near Cushendun, County Antrim



Flint Javelin head



Flint axe or adze



Polished flint knife

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Neolithic pots from the Court tomb of Ballintaggart, Co. Armagh

Pottery

A significant technological change during the Neolithic in Ireland was the arrival of **pottery**. This was not available to the Irish Mesolithic hunter-gatherer populations who had come before - they would have used containers made from organic materials, such as wicker and skins. For the more settled Neolithic farmers, the use of pottery improved the possibilities for **storage** and **cooking**.

Pottery was made by hand, as potter's wheels had not yet been invented. This was done by building up a series of **coils** of clay, and then smoothing these coils over each other. To harden the clay, it was placed in a **hearth** and **fired**. The pot was often **burnished**, which is done by **polishing** the surface with a smooth stone. This gives the pot a shiny surface, as well as making it more waterproof.

Some pots have **rounded bases**. These rounded bases could easily sit on the ashes of a hearth, if the pot was used for cooking, or could sit in a depression on the floor, if used for storage.

Some pots were decorated by impressing the wet clay, using whipped or twisted cord wrapped around a stick, bird bones, reeds, and fingertip/fingernail. Some of these pots had flat bases, rather than the more common round bases.



This pot from Ballykeel Court tomb in Co. Armagh has been decorated with a cord-like pattern.

What were the main technologies used during the Neolithic?

It is important to remember that our perception of life in the past comes from the sites and artefacts that archaeologists find during excavations. But not everything survives in the ground for thousands of years! Stone tools and pottery tend to be the main artefacts that we recover, but people in the Neolithic probably used a far greater variety of materials. They had all sorts of materials available:

Animal products

- Hides were sewn together to make clothing, or used as roofing for huts and shelters.
- Sinew, the fibrous tissue connection muscles to bone, was used to make string and to haft tools.
- Feathers from birds could be used as the flights for arrows, and also for personal decoration.
- Bones and antlers could be ground into points and used as needles, or could be used to make harpoons and shovels.
- Animal teeth and sea shells were used to make decorative pendants, worn as necklaces and bracelets.

Plant products

- Wood and **dried grasses** were used in the making of **fires**, which was essential to many aspects of life, e.g. warmth, heat, light, pottery firing, cooking.
- **Boats** would have been made from hollowed-out **logs**
- **Buildings** were made from wooden **posts**, **planks** and **wattle panels**.
- Plants such as **reeds** and **wheat** would have been used to create **thatched roofs** for houses.
- **Wood** was carved into **handles** for axes and adzes, as well as the shafts of javelins and arrows.
- Wooden **posts** were used as **fencing** for animal enclosures.
- **Plant resin** was used as a **glue** to haft tools and arrows.



A woven bag and stone axe from Aghintemple, near Ardagh, County Longford. © National Museum of Ireland.

Where did people get these resources?

Getting together all of the essential ingredients for daily life in the Neolithic wasn't easy. Materials would have been **gathered** from across the **landscape**, and then **processed**. **Clay** would have been gathered from the ground. **Flint** nodules were gathered from beaches and riverbeds, or mined from outcrops. **Porcellanite** would also have been mined from outcrops. **Greenstone** from Cumbria, England, and **pitchstone** from the Isle of Arran, Scotland, have been found in Ireland, which tells us that goods were being traded.

Animals would have been **reared** and **killed**, or **hunted**, and then **processed** to remove the hides, meat, bones, sinew. Scrapers would have been used to clean the hides, removing fat and tissue. Stone axes would have been used to clear areas of woodland. The **wood** from these clearances would have been **shaped** and cut to **size** for a number of uses. Neolithic people therefore had a **strong attachment to the landscape** around them, and were very **skilled** in collecting materials.

Neolithic pots

Neolithic people needed containers to store and cook food in. They discovered that certain areas around where they lived had deposits of clay which could be hand worked into different shapes and fire hardened to make water tight storage and cooking pots. Pieces of these can be found in excavation and archaeologist can work out where the clay was from (was the pot used locally or traded elsewhere), often the size and shape of the pot and sometimes even what was stored in it!



Create your own Neolithic pots using quick dry clay or plasticene

- Roll out a long sausage shapes of clay or plasticene about the size and shape of a pencil
- Coil one of these round and round until you make the pot base
- Add the walls of your pot by gradually adding in more lengths.
- Use your fingers to smooth the outer and inner surfaces of your little pot.
- You can look at some pictures of Neolithic pots for inspiration for the decoration, or you can make up your own design! Use your finger nail, a piece of shell or a twig to press in your patterns.
- If you have made a round bottomed pot, which were used in the Neolithic, experiment with different ways that you can make it stand upright. Do you make a little hole in the ground to stand it in? A wooden frame to hold it up right? 3 stones used like little feet?

Further discussion can be around what types of objects we use for food storage and cooking today, what materials they are made from and how environmentally friendly they are.

