Ch. 2 – The Nature of History

The Archaeologist

Learning Outcomes

- 1.4 **DEMONSTRATE** awareness of historical concepts *such as* source and evidence; fact and opinion; viewpoint and objectivity; cause and consequence; change and continuity; time and space
- 1.5 **INVESTIGATE** the job of the historian, *including* how she/he finds and use evidence to form historical judgements which maybe revised and reinterpreted in the light of new evidence
- 1.6 **DEBATE** the usefulness and limitations of different types of primary and secondary sources of historical evidence, such as written, visual, aural, oral and tactile evidence; and **APPRECIATE** the contribution of archaeology and new technology to historical enquiry.
- 1.7 **DEVELOP** historical judgements based on evidence such as a museum, library, heritage centre, digital or other archive exhibition
- 1.10 **DEMONSTRATE** chronological awareness by creating and maintaining timelines to locate personalities, issues and events in their appropriate historical eras.

A Gold Lunula

The Brockagh Axe and sheath

2.1 What is Archaeology?

Archaeology

- **Archaeology** is the study of the remains left by people in the past.
- When archaeologists dig up the ground to find evidence left by people in the past, it is called **excavation**.
- Archaeology is our only source of information about **prehistoric times**.
- Archaeologists also **investigate** remains from more recent times.
  - They work alongside historians to build a complete picture of what life was like for people in the past.

The 2012 excavation of the Leicester car park where the body of King Richard III was found. He had died in battle in 1485.

How archaeologists find sites

- There are many ways for an object to end up in the ground.
- It may have been dropped by someone, been buried or hidden, become covered by soil over time or had something built over it.
- Archaeologists excavate sites for many different reasons:
  - Sometimes the **ruins of an old building or structure** are still visible above ground.
  - An **aerial photograph** is taken of the ground from an elevated position, for example from a drone or helicopter.
  - An old document, map or other records might reveal a structure or building once existed on the site (**Research Archaeology**)

Bective Abbey

How archaeologists find sites

- Before you can get planning permission for a new road or building, you must make sure there is no evidence on site that would be lost forever (**Rescue Archaeology**).
- Sometimes archaeological sites are discovered purely by accident. For example, a farmer ploughing a field might find something and report it.

Aerial photograph of the Hill of Tara

How evidence is preserved

- Evidence such as bodies and artefacts can be **preserved** for thousands of years if the **conditions are right**.
  - As a general rule; when both air and moisture are present, things decay rapidly.
- However, the **extreme heat** of deserts dries out objects quickly and can prevent decay, preserving them.
- When bodies are buried in **airtight coffins** or **sealed tombs** – or **volcanic ash** as occurred in Pompeii – the **airless conditions** slow decay.
- European **peat bogs** preserve bodies extremely well due to the combination of cold, acidic water and airlessness below water level.

Questions Pg. 16 (Artefact Textbook)

1. Define the term excavate in your own words.
2. Define the term aerial photograph in your own words.
3. List five ways that archaeologists find sites to excavate.
4. List three ways that evidence can be preserved.

2.2 The Job of the Archaeologist

Excavating a site

- When they find a site to excavate, archaeologists:
  1. Carry out a **survey** to see if the site is worth excavating.
  2. Dig **test trenches**; a sample hole dug to see if there is anything of interest present and judge if it is worth excavating the whole site.
  3. Remove the **topsoil** (the topmost, most recent layer of soil) using a digger or pick axe.
  4. Dig very carefully to make sure they do not damage anything, using **trowels** and **shovels** for smaller amounts of soil.
  5. Use brushes to remove soil delicately from any objects found.

Excavating a site

6. Use **sieves** to ensure nothing is thrown away in the soil.

7. Record the position of every artefact found – everything is carefully drawn and photographed.

8. Catalogue the details of each artefact on **computers** and in the excavation's **site book**.

9. Put the artefacts into separate, labelled bags and then boxes which are numbered and sent to **laboratories** for tests.

10. Once the tests are finished, artefacts are usually brought to **museums** where they can be **displayed** for people to learn from.

Questions Pg. 17 (Artefact Textbook)

1. Define the terms test trench and topsoil in your own words.
2. Name three tools used by archaeologists.
3. List all the steps involved in excavating a site.
4. Why do archaeologists have to be careful when excavating?

2.3 Skills and Methods Used in Archaeology

Skills and Methods Used in Archaeology

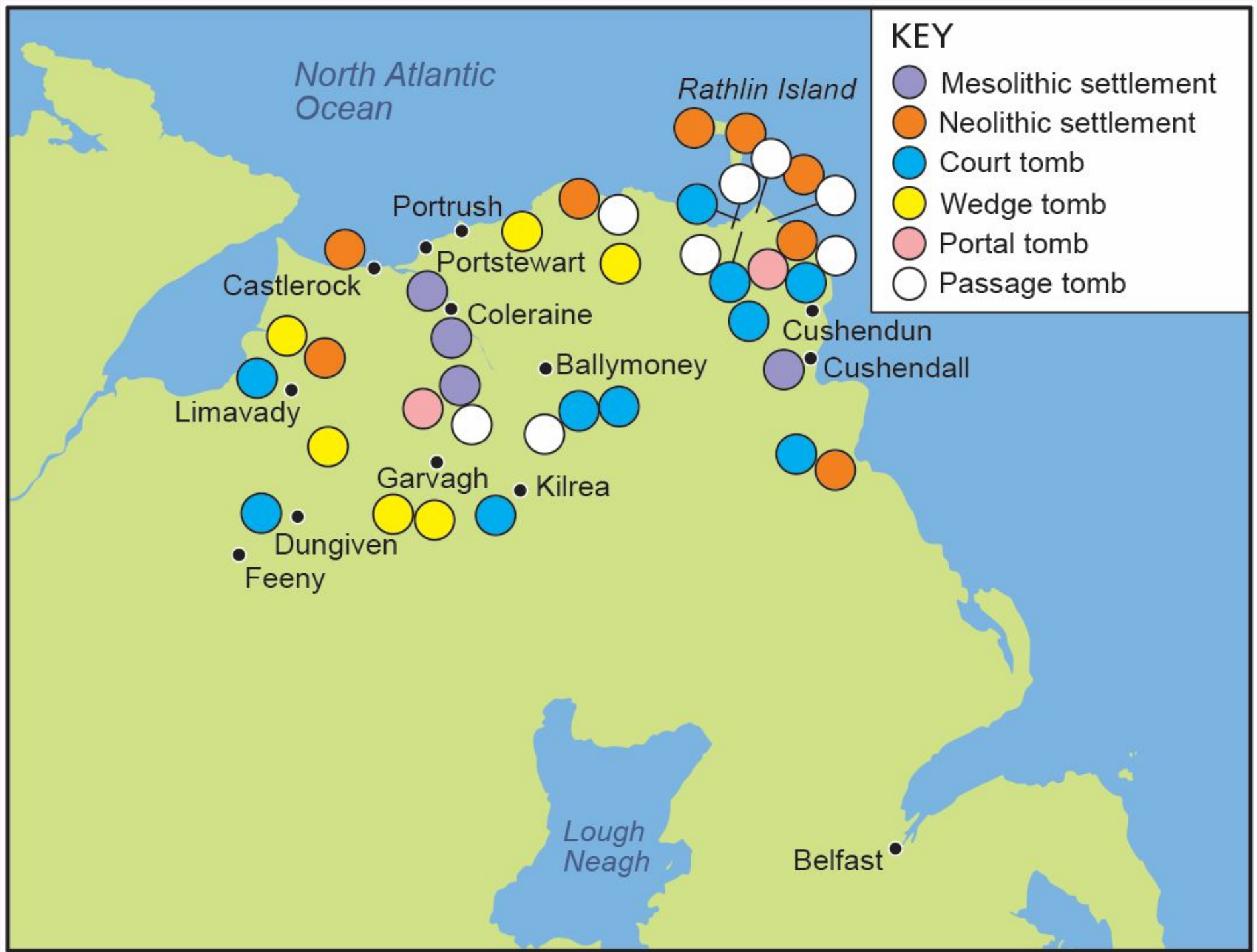
- Archaeologists use various skills and methods when carrying out their work.
- These include skills used to locate information within sites as well as many different methods of dating artefacts or any remains that are found.
- All the skills and methods you will learn about next have been used on important Irish archaeological sites and have helped us to learn a lot about early Ireland.

Radio-Carbon Dating

- All living things – humans, animals and plants – contain a substance called **carbon-14** when they are alive.
- After death, the level of carbon-14 in the once-living tissue begins to drop at a steady rate.
- This means that the older the tissue, the less carbon-14 it contains – how little = how old.
- This is method of dating age is called **radio-carbon dating**.

Radio-Carbon Dating Example

- Mount Sandel (Mesolithic period; 8,000 – 3,500 BC)
  - In the 1970s, archaeologists found Mesolithic evidence at Mount Sandel in Co. Derry.
  - **Mesolithic** means "of the Middle Stone Age".
  - The first people came to Ireland during this period, probably from Scotland across to Northern Ireland on wooden boats.
  - At this time, most of Ireland was covered in dense forest so the earliest settlements were near the coasts or rivers.
  - These people were **hunter-gatherers**; they hunted animals and gathered berries and nuts, but had not yet learned how to farm.
  - Using radio-carbon dating, evidence was dated back to 7,000 BC – Mount Sandel is between 9,000 and 10,000 years old!


KEY
Mesolithic settlement
Neolithic settlement
Court tomb
Wedge tomb
Portal tomb
Passage tomb
North Atlantic Ocean
Rathlin Island
Portrush
Portstewart
Castlerock
Coleraine
Ballymoney
Cushendun
Cushendall
Limavady
Garvagh
Kilrea
Dungiven
Feeny
Lough Neagh
Belfast

Geophysical Surveying

- A **geophysical survey** is like an x-ray of the ground.
- This allows maps and images of any archaeological evidence underground to be made without an excavation.
- Geophysical surveys can locate artefacts, as well as ruined buildings and structures.
- This method was used recently to investigate Newgrange, Ireland's most famous passage tomb at Brú na Bóinne, Co. Meath.

Geophysical Surveying Example

- Newgrange Passage Tomb (Neolithic Period, 3,500 – 2,000 BC)
  - Newgrange is older the Great Pyramids in Egypt.
  - A **passage tomb** is a narrow passage with one or more burial chambers, made of large stones and covered in earth or stone.
  - Neolithic means "of the New Stone Age" – it is when the first farmers came to Ireland.
  - Until 1962, Newgrange had not been excavated properly.
  - Inside is a passage 20 metres long which leads into a 6-metre high central chamber with three sections.
  - The aim of the geophysical survey was to see whether there were any hidden passageways or chambers – but none were discovered.

Geophysical Surveying Example

- The central chamber has a **corbelled roof** – a domed roof built by overlapping stones until they meet at the top. A capstone was placed over this.
- To this day, no water leaks into the chamber – it was a good technique.
- Outside, there is a series of stones surrounding the passage in a circle.
- Each stone is decorated in spirals and diamonds "**Neolithic art**"
- A large decorated stone sits directly in front of the entrance to the passage tomb.
- Above the passage entrance, there is a gap known as a roof box.
- Every 21st December – the winter solstice and shortest day of the year – the rising sun shines through this box and lights up the whole passage.

Pollen Analysis

- **Pollen analysis** is the study of pollen remains to find out what was growing at a site during a particular time period.
- Archaeologists have records of when certain pollens were common so that they can match the pollens to the correct period when excavating.
- Pollen analysis can be used to date objects.
- It can also tell us when forests were cleared and farming began in an area.

Pollen Analysis Example

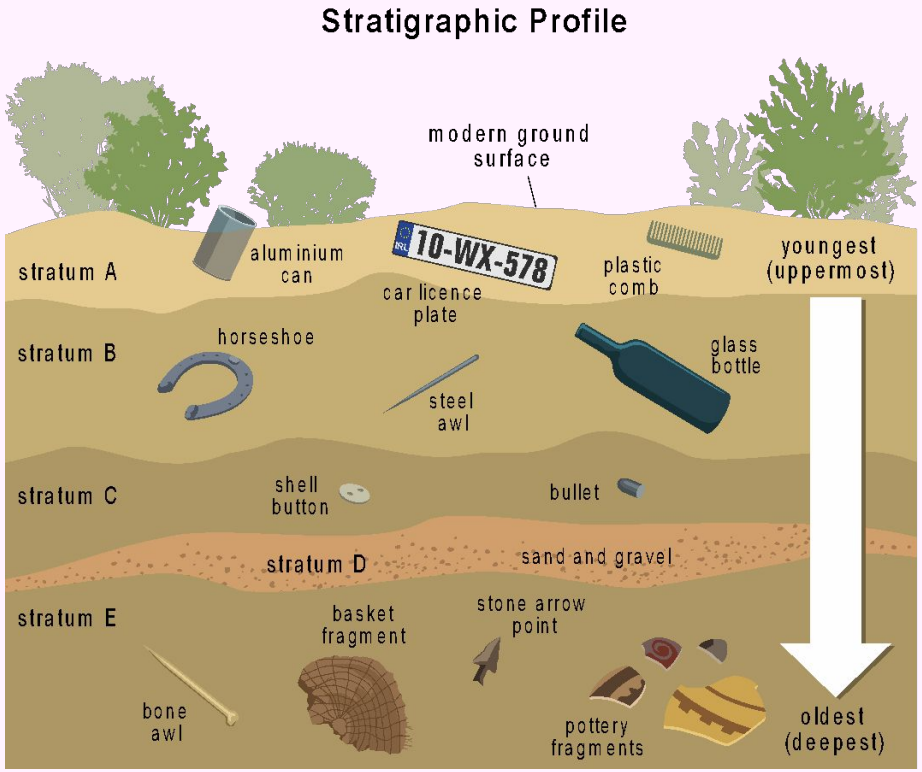
- The Céide Fields (Neolithic Period, 3,500-2,000 BC)
  - The Céide Fields were discovered by **accident** in the 1930s by a teacher who, while cutting turf in the bog, noticed a pile of stones.
  - Buried underneath the bog, archaeologists found stone walls stretching for several kilometres.
  - People had lived here between 4,000-3,000 years ago – these would have been the Neolithic farmers.
  - The evidence found here showed them to be organised, protected their animals and divided up the land amongst them.

Pollen Analysis Example

- The pollen analysis showed a dramatic drop in tree pollens, proving that pine forest areas were cleared to create fields for farming.
- Amongst the interesting objects found were
  - A stone cutting of a primitive plough
  - A quern used for grinding corn
  - Some arrowheads
  - Pieces of Pottery
- The blanket bog which grew over the fields preserved the site, leaving it in excellent condition for archaeologists to study it.

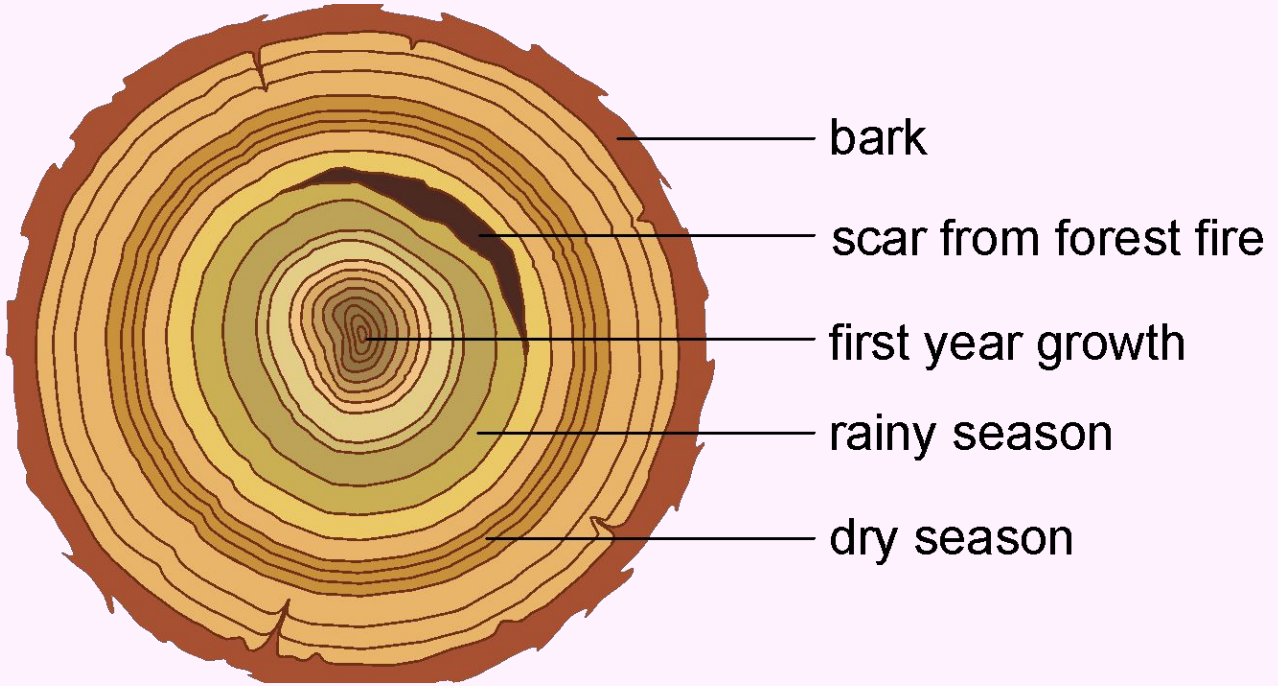
Stratigraphy

- The method of **stratigraphy** is used to date artefacts and evidence by how deep in the ground they were when found; the deeper they are, the older they will be.
- If you were to drop something today, it would lie on the surface.
- But over thousands of years, it would become covered by soil, leaves and other matter.
- Eventually, it would end up buried many meters deep.
- The method is used in most archaeological excavations.



Dendrochronology

- **Dendrochronology**, also called tree-ring dating, is a method of dating that uses the unique growth patterns of tree rings as a guide.
- If you cut through a tree trunk, you will see rings spreading from the centre outwards
  - Each ring is a year of growth.
  - The rings are wide when the tree grew fast, for example when the summer was good.
- Archaeologists have created a continuous record of tree ring patterns dating back to 5,300 BC.



Questions Pg. 21 (Artefact Textbook)

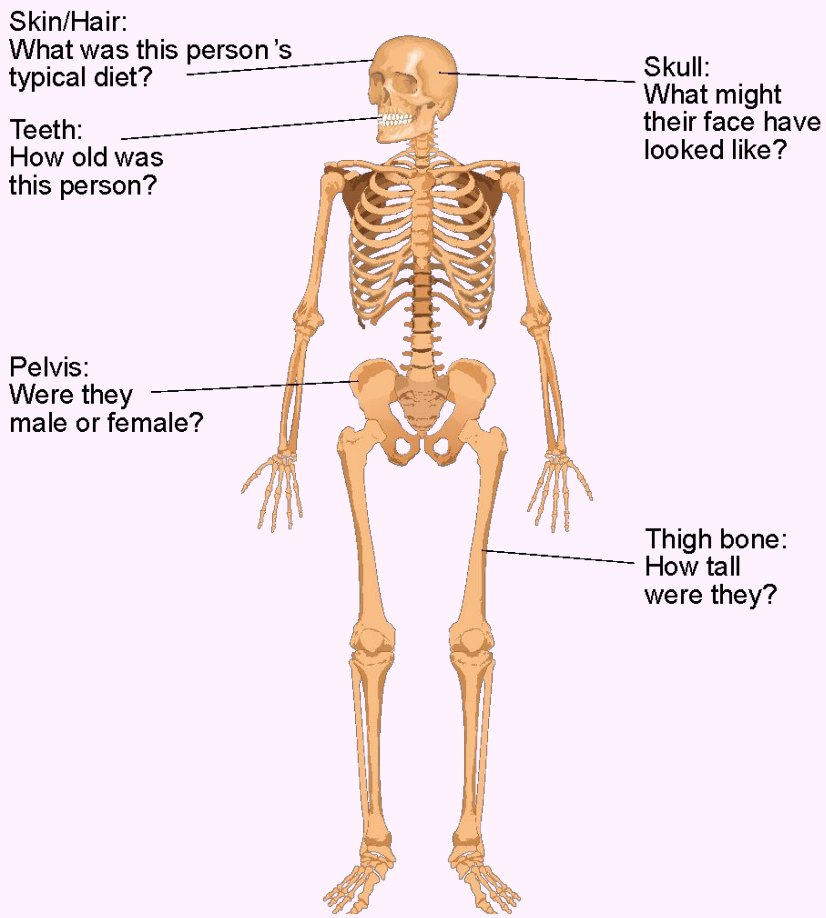
1. Define the term radio-carbon dating in your own words.
2. In what period of history did the first people come to Ireland?
3. What was a hunter-gather?
4. Define the terms geophysical surveying and pollen analysis in your own words.
5. When was the middle Stone Age? Name one archaeological site from that time.
6. Define the terms stratigraphy and dendrochronology in your own words.

DNA Testing, 3D Reconstruction and Bones

- Archaeologists sometimes find bodies when they excavate sites.
- Modern methods reveal a lot about these bodies.
- **DNA Testing** can tell us about the origins and ethnicity of the person – in other words; where they came from and who their people were.
- Another method is **3D reconstruction**, or using computer modelling and then clay to reconstruct part of a body.
- If most of a skull is found, for example, a person's face can be reconstructed based on their skull structure.

DNA Testing, 3D Reconstruction and Bones

- Archaeologists can also learn a lot by examining bodies:
  - The pelvis shows whether the person was male or female
  - Teeth can give us a rough idea of a person's age.
  - Bone can show signs of disease or bad nutrition, or if they were damaged it could be that the person's death was violent.
  - The thigh bone is a good indicator of overall height.
  - Skin or hair can be analysed for information about typical diet.



DNA Testing, 3D Reconstruction and Bones Example

- **Clonycavan Man** (Iron Age, 500 BC – AD 400)
  - Clonycavan Man's body is believed to be 2,300 years old.
  - It dates from the **Iron Age**, the period when people made tools and weapons from iron.
  - He was found in a Co. Meath peat bog in 2003.
  - Only his head and upper body were preserved.
  - He had crooked teeth and a thin beard, with the pore visible on his squashed nose.
  - We know that his diet consisted mostly of fruit and vegetables.

DNA Testing, 3D Reconstruction and Bones Example

- His hair style was very distinctive and he used an ancient hair gel made of plant oil and pine resin.
  - Its ingredients came from France and Spain, which shows that he was wealthy.
- Archaeologists think he may once have been a king and was ritually sacrificed.
  - His skull was split by a sharp object, and there was a large cut across his nose and under his right eye.
- It was estimated that he was aged between 24 and 40 when he died.

Conservation

- **Conservation** is when historical objects are protect and preserved so that they do not decay.
- Objects found by archaeologists can be displayed under the correct conditions in museums and heritage sites.
- Documents, maps, photographs and so forth can be safely stored in places such as archives and libraries.
- Historic buildings can also be looked after and restored when necessary, so that they will stay in good condition.
- Conserving the past benefits us as we can continue to learn about and engage with our history.

Questions Pg. 23 (Artefact Textbook)

1. Draw a timeline to represent the following periods in Irish history in chronological order; the Iron Age, the Neolithic era, the Mesolithic era, the Bronze Age.
2. Name three things archaeologists can learn from studying the bones of a skeleton.
3. Define the term conservation in your own words.
4. Give three examples of things that might undergo conservation.

2.4 Summary and Questions

Summary

- In this half of the chapter, we learned that:
  - Archaeology is the study of remains left by people in the past.
  - An excavation is when archaeologists dig to find evidence left by people in the past.
  - Archaeologists identify sites for excavation in various ways. Among them are:
    - Research archaeology
    - Rescue archaeology
    - Visible ruins
    - Aerial photography
    - Accident

Summary

- Evidence can sometimes last a very long time, especially under airless or very dry conditions.
- Steps when carrying out an excavation include;
  1. Digging test trenches
  2. Removing topsoil
  3. Using shovels, trowels and brushes
  4. Cataloguing all finds
  5. Taking photographs
  6. Storing finds in labelled bags and boxes
- Some skills and methods used by archaeologists are:
  - Radio-carbon dating
  - Stratigraphy
  - Dendrochronology
  - Geophysical surveying
  - Pollen analysis
  - DNA testing
  - 3D Reconstruction
  - Bone Analysis

Summary

- Fascinating archaeological discoveries in Ireland include
  - Mount Sandel
  - Newgrange
  - The Céide Fields
  - The Clonycavan Man
- The Mesolithic period, the Neolithic period, the Bronze Age and the Iron Age are all periods of history that archaeologists have investigated in Ireland.

Questions Pg. 24 (Artefact Textbook)

1. Archaeology is the study of the remains left by _____ in the past.

(a) Archaeologists dig holes to find these remains: this is called _____ a site.

(b) Archaeology is our only source of information from _____ times.

(c) However, archaeologists also investigate remains from more recent times and work alongside _____ to build a complete picture of what life was like for people in the past.

Missing words: excavating, prehistoric, historians, people

Questions Pg. 24 (Artefact Textbook)

2. Why is the study of archaeology important?

3. Explains the terms rescue archaeology and research archaeology.

4. Work with a partner. Each choose **five** from the key terms below and give a definition in your own words.

Artefact	Stratigraphy	Radio-carbon dating	Mesolithic
Topsoil	Dendrochronology	Geophysical survey	Neolithic
Passage Tomb	3D reconstruction	Aerial photograph	Iron Age
Test trench	Pollen analysis	Bronze Age	Excavate