

# TEACHER

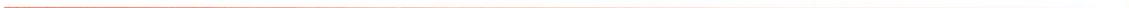
## GUIDELINES

### CONTENTS

- Managing the Module



- Background Information



- Skills Development



- Strands



Linkages	Integration		
 SESE Geography	 Mathematics	 Visual Arts	 SPHE
 SESE Science	 Gaeilge	 English	



### Managing the Module: Senior Classes

#### PREPARATION

This is an exercise designed to give the pupils an understanding of archaeology and the work of an archaeologist. The activity is a classroom discussion based on the idea of the room itself being excavated by archaeologists in 1,000 years time, having been destroyed by a mudslide /volcano.

In preparation, the pupils will need to be introduced to the concept of archaeology- 'the study of how people lived in the past through the examination of the physical remains they left behind'. Thus the three key concepts in archaeology are 'people', 'the past' and 'physical remains'.

These physical remains can be divided into two categories: *artefacts* and *monuments*. The Activity Sheets (AS) in this module are designed to help pupils become familiar with the concepts of 'artefacts' and 'monuments', and with the process of decay which affects the survival of both. The Activity Sheets may not be necessary if the pupils already have a grasp of these concepts.

What remains from the past, be it artefact or monument, has survived the erosion of time. In order to grasp how archaeology works, the pupils need to be introduced to the concept of decay. Decay is closely related to the nature of the material: what is **organic** usually rots away at a much faster rate than what is **inorganic**. Activity Sheet 3 (AS3) shows the difference between organic and inorganic material (see below).

#### What will survive of the Monument?

The tops of the walls have crumbled but the outline of the building is still apparent when the archaeologists remove the fallen rubble. The archaeologists could estimate how high the building was from the amount of fallen rubble.

- With the rubble removed the archaeologists can make out the ground plan of the school. This shows the location of rooms and corridors, as well as the doors linking them. This should give us enough information to show that the ruin was a school rather than a house or a church or some other type of building. Activity Sheet 4 (AS4) is designed to tease out the functions of different building types.
- Will the archaeologists be able to tell the position of windows? They might find lots of shattered glass in places where the windows were located. If they put all the broken pieces of glass together they might even be able to tell what shape the window was.
- The location of doorways will tell the archaeologists a lot about how the building functioned. Why is the location of doors so important in a building?
- Will they find a fireplace? In an old school there could be a blocked up fireplace, which can lead to discussion about schooling in the old days. Why were they blocked up? What replaced the open fire and why?
- Will there be any remains of the toilets? Ceramics last very well so they should be able to reconstruct the wash-hand basins etc. What will this tell us about the school?

#### Gathering Information

An event like a mudslide/ volcano covering a school would be reported in the news media. Discuss with the class the kind of media coverage the event would attract. Relate this to the way historic documents tell us about events in the past.





### What will survive in the form of artefacts?

Most of the things made of organic materials will rot away, like books, chairs and tables (if wooden), pencils, maps, pictures. What are more likely to survive are things made of inorganic materials, like window glass, computers, ceramic cups. The final clincher on determining that the ruin was a school would be a stone plaque bearing the name of the school and its date of construction (is there such a plaque at your school?).

### Sorting artefacts

*The Module could be further developed by classifying the artefacts found in the classroom according to their distinctive characteristics:*

- Sort artefacts in terms of their appearance or 'feel'.
- Sort artefacts into those that can be picked up by a magnet and those that can't.
- Sort artefacts by physical composition (metal, wood, plastic etc).

## Managing the Module: Junior Classes

### Infants

Explain the term *artefact* as a portable object- something you can pick up and is a distinct 'thing' (AS1). Ask the pupils to name the portable objects in the classroom. They could then explore the different types of artefacts to be found in a classroom and in a room in their homes. They might also explore the idea of artefacts that will rot in the ground and those which will not. This is also closely related to the difference between living things and inanimate objects.

Introduce the term 'archaeologist' as some one who looks at old things: old buildings and old objects. Name some examples of these for them.

**Closing Activity:** Draw and colour a picture of an artefact in the schoolroom.

### 1st and 2nd

Introduce the term archaeologist as some one who looks at old things: old buildings (monuments) and old objects (artefacts). Explain the term *artefact* as a portable object- something you can pick up and is a distinct 'thing' (AS1). Ask the pupils to list the artefacts in the classroom and explore the reason that these are found in the classroom. They could then explore the different types of artefacts to be found in a classroom and in a room in their homes. They might also explore the idea of artefacts that will rot in the ground and those that will not. This is also closely related to the difference between living things (organic) and inanimate objects (inorganic) (AS3).

Explain the term *monument* as any old building or ruin in the locality? Can they name any examples? Write a list on the board.

If the school was covered in a mudslide/volcano what would survive? Which artefacts in the classroom would survive? What will these artefacts tell us about the classroom? (e.g. a metal pencil sharpener means writing, a tin whistle means music).

**Closing Activity:** Draw and colour a picture of one of the artefacts that would survive in the classroom.



### BACKGROUND INFORMATION

#### What kinds of things rot or decay when buried in soil?

Food remains decay rapidly through animal action in the soil (ants, worms etc.) especially if buried near the surface. In soil conditions where oxygen, warmth and moisture are present, organic materials such as natural textiles, leather, paper, the soft tissue of humans and animals and the organic part of their bones, are quickly broken down by bacterial action. If any of the three influencing factors (warmth, moisture or oxygen) are absent there is a far greater chance of preservation, as on permanently frozen, waterlogged or desert conditions.

#### What happens to litter and rubbish?

Litter is composed of many different materials that break down at varying rates. Foods are biodegradable materials, which means that they may be broken down in a few weeks. Other materials, like plastic for example, are not biodegradable. When exposed to the elements-sunlight, water, and air - plastic might begin to decay but this could take many decades even centuries. Some plastics remain unchanged for centuries because they cannot be dissolved in water and because micro-organisms cannot feed on them. Polystyrene, used in packaging material and also as beverage and food containers, will perhaps break down after a millennium or so!

### APPROXIMATE RATES OF DECAY

#### ORGANIC

Orange and banana peels	2-5 weeks
School papers and newspaper	4 -6 weeks
Cardboard box	4 -5 months
Cotton shirt	1-5 months
Paper handkerchief	3 -6 months
Woollen sock	1 year
Paper page	1 month
Woody materials such as wood-chips, branches and twigs	2 years

#### INORGANIC

Tin cans	100 years
Aluminium cans	200-400 years
Plastic bottles and jugs	700 years
Plastic bags and disposable diapers	10-20 years
Thin plastic used as wrapping biscuits, crisps etc.	5 years
Plastic rings which keep cans together	100 years
Plastic toy	450-1,000 years
Polystyrene (burger boxes)	Possibly never
Chewing gum	5 years
Cigarette filters	1-2 years
Glass (easy to recycle)	4,000 years to break down to its natural components
Other Glass bottles and jars	1,000,000 years
Scrap metal	50 years

#### ORGANIC / INORGANIC MIX

Leather shoe	50 years (because of rubber sole)
Wooden chair with iron legs	80 - 100 years (because of iron)



## DECAY OF TEXTILES

The two main fibre types most commonly found blended and dyed to make textiles are natural fibres and synthetic fibres. Natural fibres include vegetable fibres such as cotton, flax and hemp, animal fibres such as sheep's wool, and mineral fibres such as asbestos. Synthetic fibres are polymers based on petroleum and cellulose such as nylon.

Only certain environmental conditions allow textiles to be preserved; examples are the arid Egyptian deserts and the peat bogs of Northwest Europe. One can correctly interpret the deterioration of textiles only by understanding both the composition of textiles and the environment in which they are deposited. In general, synthetic fibres take much longer to degrade than natural fibres.

## DECOMPOSITION OF HUMAN AND ANIMAL REMAINS

During decomposition, a body will create heat, gradually liquefy and change the chemical environment of the area immediately around it. There are three main factors associated with the preservation of human/animal remains and associated materials:

- **Environment.** Water, soil, temperature and air are leading environmental factors influencing decomposition rates. Ground freezing inhibits chemical reactions and will work to preserve remains and materials, as well as impede scavenger and faunal activity. Oxygen levels are also highly influential to decay rates. Decomposition may be accelerated in porous, light soils and retarded in clay-like soils or deeper burials.
- **Local flora and fauna.** Particularly notable are the presence of worms and insects, and other organisms that will react with the remains.
- **Activities of humans.** For example, land drainage will affect soil-preservation properties.

Much of the human body consists of water, dissolved salts, proteins, carbohydrates and lipids. Only bones and teeth, which comprise approximately 7% of the human body, consist of durable mineralised tissues (calcium). This is what we see when we find a skeleton.

## DECAY OF PLASTICS

Film stock made from cellulose nitrate (or celluloid) is very prone to decay. Most films that are pre 1950s have already disintegrated. Other materials like electric guitars that are made from cellulose acetate are more robust. Barbie dolls, made from polyvinyl chloride (PVC), are extremely resistant to decay. All three types, (celluloid, cellulose acetate, PVC), are polymers, with long linear chains that break down in a similar manner. Plastics can decay in a number of ways:

- as a result of being in sunlight
- as a result of getting wet or hot
- as a result of contamination.

The better lasting plastics are those that have complex internal arrangements of molecular chains, which interlink to provide extra durability. Bakelite, made from carbolic acid and formaldehyde, was used extensively from the 1920s and has lasted better than other plastics. Materials made from polyurethane, used for its flexibility in objects such as furniture, will react with oxygen over time, turn brittle and eventually disintegrate.



### DECAY OF METAL

Corrosion is the primary means by which metals deteriorate. In nature most metals are present in a rock-like substance called ore (such as iron ore). Metal ores are oxides. By subjecting these ores to huge amounts of energy and heat, oxygen can be removed leaving the pure metal. Pure metal, if given the chance to recombine with oxygen, will become a metal oxide again. This reaction is called oxidation otherwise known as corrosion. When iron metal oxidises, it turns into iron oxide, which is the familiar brown "rust".

#### Metals which do not corrode:

- Gold Gold does not corrode; it is one of the few metals that we do find naturally as a pure metal. Gold mines produce pure gold rather than ore.
- Silver Silver is not affected by moisture and does not usually corrode. However, its surface will tarnish black when exposed to the minute amounts of sulphur present in the air. That's why you have to polish silver periodically to keep it shiny. It can corrode under very aggressive soil, but it is usually very stable in the ground.
- Platinum Platinum does not corrode, tarnish or rust!

#### Metals resistant to corrosion:

- Copper Copper conducts electricity and heat better than any other metal with the exception of silver. It does not corrode easily. Ancient people used copper for tools, weapons and decoration. When copper tarnishes, it turns green on the surface.
- Bronze Bronze is made by adding tin to copper. Bronze is much tougher than copper and much more suitable for making tools and weapons than copper.
- Brass When zinc is added to copper, brass is made. Both brass and bronze are stronger than pure copper and do not corrode in the air or water except for a small amount of tarnishing.
- Zinc Zinc is more corrosion resistant than steel in most natural atmospheres. In a normal atmosphere, zinc forms a basic zinc carbonate film that greatly retards its corrosion rate.



For properties of other metals see *Corrosion of Metals* at [www.corrosion-doctors.org/MatSelect/corrmets.htm](http://www.corrosion-doctors.org/MatSelect/corrmets.htm)

### EURO COINS

For economic reasons the "copper" coins of 1, 2 and 5 cent pieces are not made of solid copper; they are actually made of iron covered by a thin copper skin. The 10, 20 and 50 cents pieces are made of "Nordic gold"- a gold-coloured metal which is composed of 89% copper, 5% aluminium, 5% zinc and 1% tin. The 1 and 2 Euro coins are "Bicolour - coins". They are composed of two different metal pieces: the outer ring and the inner core. The 1 Euro-ring and 2 Euro-core are copper based alloys that contains 70% copper, 20% zinc and 5% nickel, and the common name of this is "nickel-brass". For the 1 Euro-core and the 2 Euro-ring, CuNi 25, the most common alloy used for coins worldwide is used.



**INFANT CLASSES**

**Time and Chronology:** • The pupils become aware of and discuss a simple story based on how artefacts are evidence of past events.

**Using Evidence:** • The pupils encounter the idea of artefacts as evidence for an event that happened in the past.

**Communication:** • The artefacts from the classroom can be used as a means of communicating a story using art work (drawing the artefacts) and information (what do the artefacts tell us?).

**1ST AND 2ND CLASSES**

**Time and Chronology:** • The pupils can begin to distinguish between past, present and future events by identifying artefacts from the different periods.

**Change and Continuity:** • Begin to develop an understanding of chronology by considering what would survive of the classroom in 1,000 years time.

**Cause and Effect:** • The pupils can explore ideas of change (what will rot away) and continuity (what will survive) in terms of the archaeology of the classroom.

**Using Evidence:** • Using the concept of the archaeology of the classroom the pupils can relate the event with a consequence- the mudslide/volcano and what will survive in 1,000 years time.

**Synthesis and Communication:** • The pupils examine the range of artefacts in the classroom in terms of what they tell us about the activity in the classroom (a metal pencil sharpener means writing, a tin whistle means music).

**Empathy:** • The artefacts which will survive from the classroom can be used as a means of communicating a story about the destruction of the classroom using drama (the catastrophe of the volcano/mudslide), art work (drawing the artefacts) and writing (write an account of the destruction of the school).

• Using the idea of the archaeology of the classroom the pupils can imagine and discuss the event of rediscovering the classroom in 1,000 years time.

**3RD AND 4TH CLASSES**

**Time and Chronology:** • The pupils can begin to distinguish between past, present and future events by identifying artefacts from the classroom that will survive over 1,000 years.

• Begin to develop an understanding of chronology by considering how archaeologists would reconstruct the school from the evidence that they would find in their excavation.

• Use words and phrases which would be useful to archaeologists in describing what they would find in their excavation (artefacts, reconstruction, excavation, recording, and interpretation).

**Change and Continuity:** • The pupils can explore ideas of change (what will rot away) and continuity (what will survive) in terms of the archaeology of the classroom.

**Cause and Effect:** • Using the concept of the archaeology of the classroom the pupils can relate the event with a consequence- the mudslide/volcano and what will survive in 1,000 years time.

**Using Evidence:** • The pupils examine the range of artefacts in the classroom in terms of what they tell us about the activity in the classroom (a metal pencil sharpener means writing, a tin whistle means music).

• Discuss the types of historic information that would be available to the archaeologists when they research their excavation of the school.

• Show how the archaeologists would make deductions about the school from the artefacts they would find and the historic evidence they would discover.

**Synthesis and Communication:** • The artefacts which will survive from the classroom can be used as a means of communicating a story about the destruction of the classroom using drama (the catastrophe of the volcano/mudslide), art work (drawing the artefacts) and writing (write an account of the destruction of the school).

• This story could be communicated using a variety of forms: oral language; writing; information and communication technologies.

**Empathy:** • Using the idea of the archaeology of the classroom the pupils can imagine and discuss the event of rediscovering the classroom in 1,000 years time. What would the archaeologists feel when they uncovered the school in their excavation?





### 5TH AND 6TH CLASSES

**Time and Chronology:**

- The pupils can begin to distinguish between past, present and future events by identifying artefacts from the classroom that will survive over 1,000 years, and then discuss these in a broader historical context.
- Begin to develop an understanding of chronology by considering how archaeologists would reconstruct the school from the evidence that they would find in their excavation.
- Use words and phrases which would be useful to archaeologists in describing what they would find in their excavation (artefacts, reconstruction, excavation, recording, and interpretation).

**Change and Continuity:**

- The pupils can explore ideas of change (what will rot away) and continuity (what will survive) in terms of the archaeology of the classroom. They can then imagine what might survive today from a school buried in a similar way 1,000 years ago.

**Cause and Effect:**

- Using the concept of the archaeology of the classroom the pupils can relate the event with a consequence- the mudslide/volcano and what will survive in 1,000 years time.
- Appreciate how the process of time can destroy evidence of past events and how archaeologists are often left with only a small part of the jigsaw from which to work out what happened in the past.

**Using Evidence:**

- The pupils examine the range of artefacts in the classroom in terms of what they tell us about the activity in the classroom (a metal pencil sharpener means writing, a tin whistle means music).
- Discuss the types of historic information that would be available to the archaeologists when they research their excavation of the school.
- Distinguish between the primary sources (artefacts from the excavation) and secondary sources (newspaper articles) and how the archaeologist will have to work with both of these to reconstruct past events.
- Show how the archaeologists would make deductions about the school from the artefacts they would find and the historic evidence they would discover.
- The artefacts which will survive from the classroom can be used as a means of communicating a story about the destruction of the classroom using drama (the catastrophe of the volcano/mudslide), art work (drawing the artefacts) and writing (write an account of the destruction of the school).
- This story could be communicated using a variety of forms: oral language; writing; information and communication technologies.

**Synthesis and Communication:**

**Empathy:**

- Using the idea of the archaeology of the classroom the pupils can imagine and discuss the event of rediscovering the classroom in 1,000 years time. What would the archaeologists feel when they uncovered the school in their excavation?



Strands

Infants

**Strand: Story**

Strand Unit: Stories

*The child should be enabled to*

- listen to local people telling stories about their past
- discuss the chronology of events (beginning, middle, end) in a story
- express or record stories through art work, drama, music, mime and movement and using information and communication technologies.

1st & 2nd Classes

**Strand: Story**

Strand Unit: Stories

*The child should be enabled to*

- discuss chronology of events (beginning, middle, end) in a story
- discuss the actions and feelings of characters
- express or record stories through simple writing, art work, drama, music, mime and movement and using information and communication technologies.

**Strand: Change and Continuity**

Strand Unit: Continuity and change in the local environment

*The child should be enabled to*

- visit, explore and become aware of elements in the local environment which show continuity and change
- compare photographs, drawings and simple accounts of the site in the past with the site now.

3rd & 4th Classes

**Strand: Local Studies**

Strand Unit: My school

*The child should be enabled to*

- attempt to reconstruct a school day in the past using a range of simple evidence
- compare school furniture and equipment of the past and the appearance of the classroom with those of today.

Strand Unit: Buildings, sites or ruins in my locality

*The child should be enabled to*

- actively explore some features of the local environment
- investigate various aspects of these sites
- present findings using a variety of media and appropriate timelines.

**Strand: Story**

Strand Unit: Stories from the lives of people in the past

*The child should be enabled to*

- discuss chronology of events (beginning, middle, end) in a story
- examine and begin to make deductions from some simple relevant evidence
- discuss the actions and feelings of characters · discuss the attitudes and motivations of characters
- express or record stories through oral and written forms, art work, music, drama, mime, movement and information and communication technologies
- express or record stories through oral and written forms, art work, music, drama, mime, movement and information and communication technologies.

**Strand: Change and Continuity over time**

Strand Unit: Continuity and change in the local environment

*The child should be enabled to*

- identify items of change and continuity in the "line of development".

5th & 6th Classes

**Strand: Local Studies**

Strand Unit: Buildings, sites or ruins in my locality

*The child should be enabled to*

- actively explore some features of the local environment
- identify opportunities to become involved in enhancing and protecting the environmental features
- present findings using a variety of media and appropriate timelines.

**Strand: Story**

Strand Unit: Stories from the lives of people in the past

*The child should be enabled to*

- discuss the chronology of events in a story
- examine and begin to make deductions from some simple relevant evidence
- discuss the actions and feelings of characters
- discuss the attitudes and motivations of characters in their historical context
- express or record stories through oral and written forms, art work, music, drama, mime, movement, information and communication technologies.

**Strand: Change and Continuity over time**

Strand Unit: Schools and education

*The child should be enabled to*

- identify items of change and continuity in the "line of development".



### LINKAGES ACROSS THE CURRICULUM



#### INFANTS

Strand: **Human environments**  
Strand Unit: Living in the local community

#### 1ST AND 2ND CLASSES

Strand: **Human environments**  
Strand Unit: Living in the local community

Strand: **Natural environments**  
Strand Unit: The local natural environment

#### 3RD AND 4TH CLASSES

Strand: **Human environments**  
Strand Unit: People living and working in the local community

Strand: **Natural environments**  
Strand Unit: The local natural environment  
Strand Unit: Weather, climate and atmosphere

#### 5TH AND 6TH CLASSES

Strand: **Human environments**  
Strand Unit: People living and working in the local community

Strand: **Natural environments**  
Strand Unit: The local natural environment  
Strand Unit: Physical features  
Strand Unit: Weather, climate and atmosphere



#### INFANTS

Strand: **Materials**  
Strand Unit: Properties and characteristics of materials  
Strand Unit: Materials and change

#### 1ST AND 2ND CLASSES

Strand: **Materials**  
Strand Unit: Properties and characteristics of materials  
Strand Unit: Materials and change

#### 3RD AND 4TH CLASSES

Strand **Environmental awareness and care**  
Strand unit: Caring for the environment

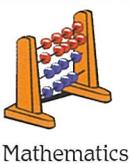
Strand: **Materials**  
Strand Unit: Properties and characteristics of materials  
Strand Unit: Materials and change

#### 5TH AND 6TH CLASSES

Strand **Environmental awareness and care**  
Strand unit: Caring for the environment

Strand: **Materials**  
Strand Unit: Properties and characteristics of materials  
Strand Unit: Materials and change

### INTEGRATION ACROSS THE CURRICULUM



#### INFANTS

Strand: Shape and Space

#### 1ST AND 2ND CLASSES

Strand: Shape and Space  
Strand: Number

#### 3RD AND 4TH CLASSES

Strand: Shape and Space  
Strand: Number  
Strand: Data

#### 5TH AND 6TH CLASSES

Strand: Shape and Space  
Strand: Number  
Strand: Data





Visual Arts

**INFANTS**

Strand: Paint and colour

**1ST AND 2ND CLASSES**

Strand: Paint and colour

**3RD AND 4TH CLASSES**

Strand: Paint and colour

**5TH AND 6TH CLASSES**

Strand: Paint and colour



SPHE

**INFANTS**Strand: Myself  
Strand: Myself and the wider world**1ST AND 2ND CLASSES**Strand: Myself  
Strand: Myself and the wider world**3RD AND 4TH CLASSES**Strand: Myself  
Strand: Myself and the wider world**5TH AND 6TH CLASSES**Strand: Myself  
Strand: Myself and the wider world

Gaeilge

**RANGANNA NAÍÓNÁN**Snáithe: Éisteacht  
Snáithe: Labhairt**1 AGUS 2 RANGANNA**Snáithe: Éisteacht  
Snáithe: Labhairt  
Snáithe: Scríbhneoireacht**3 AGUS 4 RANGANNA**Snáithe: Éisteacht  
Snáithe: Labhairt  
Snáithe: Scríbhneoireacht  
Snáithe: Léitheoireacht**5 AGUS 6 RANGANNA**Snáithe: Éisteacht  
Snáithe: Labhairt  
Snáithe: Scríbhneoireacht  
Snáithe: Léitheoireacht

English

**INFANTS**Strand: Receptiveness to language  
Strand: Competence and confidence in using language  
Strand: Developing cognitive abilities through language  
Strand: Emotional and imaginative development through language**1ST AND 2ND CLASSES**Strand: Receptiveness to language  
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