

**GENERAL INTRODUCTION TO SOCIAL, ENVIRONMENTAL AND  
SCIENTIFIC EDUCATION (SESE).**

**Clonmoney NS**

**Whole School Science Plan**



**1. Introduction**

Social, environmental and scientific education (SESE) provides opportunities for the child to explore, investigate and develop an understanding of the natural, human, social and cultural dimensions of local and wider environments, to learn and practise a wide range of skills and to acquire open, critical and responsible attitudes. SESE enables the child to live as an informed and caring member of local, national, European and global communities.

SESE takes place within and contributes to many other areas of the curriculum. It thus contributes significantly to many aspects of the child's development. Within the curriculum, SESE is presented under three subject headings:

- History
- Geography
- Science.

Each of these areas has a distinctive role to play in enabling the child to explore and understand the natural, human, social and cultural environments in which he lives.

The entire SESE curriculum begins with the child's environment. In the curriculum the environment is defined as the surroundings or external conditions with which an individual (human or other living organism) or community interacts.

Our school is set in a rural area, adjacent to Shannon and Bunratty. It has many historical points of interest easily accessible to our pupils including, Bunratty Castle, Drumline Castle, Shannon Airport, Ralahine Commune, etc. The area also boasts of many noted historical features of architectural importance including the Shannon Industrial Estate, Bunratty Folk Park.

Geographically the river Ratty flows nearby. There are many hedgerows and wooded areas nearby. Ballycunneen Lake is very close to the school. There is a weather station at Shannon airport also. This local wealth will be used extensively in our SESE curriculum.

## **2. Vision**

In our school the child will be enabled through SESE to be an active agent in his/her own learning.

History will enable children to explore and critically examine significant events in their own immediate past, the past of their families, communities and the communities of the wider world.

In Science children will investigate and explore natural and human features in the immediate and wider environments.

Science will give children opportunities to observe, question, investigate and understand the biological and physical aspects of the world around them.

### **CURRICULUM IN OUR SCHOOL**

In our school we will present the Science curriculum to all classes under two headings: Skills and Content.

#### **Skills**

- The children will be taught to work scientifically.
- The children will be afforded the opportunity to carry out design and make activities.
- The children will be afforded the opportunity to carry out scientific investigations.

#### **Content**

- Living things
- Energy and Forces
- Materials
- Environmental Awareness and Care

### **SKILLS**

#### **Working Scientifically**

The children in our school will learn to work scientifically. Scientific activity differs from other forms of enquiry in the process through which ideas are developed. A scientific approach is a process by which:

- Observations are made
- Hypotheses are constructed
- Predictions are formed
- Investigations are planned and carried out with an emphasis on fair testing
- Results are recorded and analysed

- Findings and conclusions are shared and discussed
- Previous knowledge and conceptual understanding accommodate new findings.

Children learn by doing. They bring different ideas and experiences to the learning process. By interacting with objects and materials, they “create” new knowledge and concepts that in turn become part of their base for future learning. This constructivist approach will be used in our school as the children explore scientific topics.

In our school the Design and Make section of the Science Curriculum will invite the children to provide a practical solution to everyday problems. This will involve children in exploring and assessing everyday objects in terms of their functionality, their component materials and their design, and using this information in the design, production and evaluation of their own artefacts or models. Such activities harness and nurture the creative and imaginative capacities of children as they engage in a four-stage process that involves a range of scientific skills:

- Exploring
- Planning
- Making
- Evaluating.

### **Scientific Investigation**

As part of working scientifically the children in our school will be encouraged to carry out scientific investigations. These investigations will involve changing something and measuring the effect of that change on something else e.g. What effect will the distance between a light source and an object have on the size of the shadow? or What effect will the size of a parachute have on the length of time it takes an object to fall to the ground?

The children will be exposed to the concept of a fair test. They will learn that it is important to change just one thing and then to measure the effect of that change while keeping everything else the same.

### **ASSESSMENT**

We will assess each child’s progress in Science using the following assessment tools:

- Teacher observation
- Teacher devised tasks and tests
- STEAM Projects
- Concept mapping at intervals

- Work samples including samples of Make and Do projects and investigations
- Portfolios and projects.

## **SOURCES AND RESOURCES**

Our school will build up a wide variety of materials, equipment and resources over a period of time to meet the needs of the children and to enable them to work scientifically using a hands-on approach. We will use whatever books, workbooks, online materials and textbooks that we find valuable and beneficial to enable us to address all strands of the curriculum.

## **REVIEW AND EVALUATION**

We will evaluate the school plan and the approaches outlined in it yearly and we will review the plan as we see the need.

## **Some possible projects to undertake as STEAM PROJECTS**

### **Living Things**

#### **A. Human Life**

- ✓ A sandwich for school lunch
- ✓ Draw up a nutritious lunch menu for yourself or a younger child
- ✓ Anti-dust mask

#### **B. Plant and Animal Life**

- ✓ A wormery
- ✓ A bottle garden
- ✓ A suitable container for growing seeds
- ✓ An animal home
- ✓ A suitable growth environment for a plant that requires some specialised care.

### **Energy and Forces**

#### **A. Light**

- ✓ A model glass house (using a plastic bottle)
- ✓ A pair of sunglasses, using different combinations of coloured film or plastic
- ✓ A light shade for a bedroom
- ✓ Periscopes
- ✓ Telescopes
- ✓ A sun canopy/parasol for teddy.

#### **B. Sound**

- ✓ A string telephone

- ✓ A megaphone
- ✓ A range of simple percussion instruments
- ✓ A range of simple string instruments
- ✓ A range of simple wind instruments
- ✓ An ear trumpet.

### **C. Heat**

- ✓ An outfit of clothing for someone who is going to a very hot/cold place
- ✓ A convection turbine
- ✓ A container to store frozen foods while transporting from home to school

### **Magnetism & Electricity:**

- ✓ A container incorporating a magnet to keep paper clips together
- ✓ A model lighthouse
- ✓ A 'buzz off'/steady hand game
- ✓ A set of traffic lights which can be controlled by a switch
- ✓ A model house with working lights
- ✓ A crane incorporating an electromagnet
- ✓ An electronic quiz board game
- ✓ Design and make a fishing game using magnets
- ✓ Move a car using magnets
- ✓ A torch that can be turned off/on
- ✓ A Morse Code device that can be used to send/receive messages

### **Energy and Forces:**

- ✓ A land yacht that can carry toys for a set distance
- ✓ A pulley system to help carry stone to the top of a castle
- ✓ A parachute
- ✓ A marble-run
- ✓ A safe see-saw
- ✓ A boat that will travel swiftly
- ✓ A boat that will carry a set number of marbles/coins
- ✓ A sail boat
- ✓ A lifting device that uses levers and gears.
- ✓ A car that will move one metre
- ✓ A wind turbine to spin a coloured disc or turn a flywheel
- ✓ A water wheel to turn a flywheel
- ✓ A spring balance
- ✓ A toy using a lever
- ✓ A bridge to cross a gap 40 cm wide and able to carry a toy car
- ✓ A glider
- ✓ A paper aeroplane
- ✓ A paper helicopter /spinner.

### **Materials and change:**

- ✓ Different varieties of chocolate buns using mixing, heating or cooling
- ✓ Flavoured ice-cream
- ✓ A tea-cosy
- ✓ A cover for a hot water bottle
- ✓ Suitable refreshments for guests at a school concert.

### **Environmental Awareness and Care:**

#### **A. Environmental Awareness**

#### **B. Science and the Environment**

#### **C. Caring for the Environment:**

- ✓ A container to help keep the classroom tidy
- ✓ A classroom container for recyclable materials
- ✓ Window boxes
- ✓ Bird feeders
- ✓ A model of an environmentally-friendly building
- ✓ Nest boxes
- ✓ A school garden.

### **Strand Units:**

#### **1. Living Things**

#### **2. Energy and Forces**

#### **3. Materials**

#### **4. Environmental Awareness and Care**

The following is a class-by-class breakdown of the content of the Science curriculum in our school:

**Junior Infants & Senior Infants:**  
**STRAND Living Things**

Strand Unit	Objectives
<p><b>1. Human Life</b></p>	<ul style="list-style-type: none"> <li>Recognise and measure similarities and differences between people.</li> <li>Changes that occur as children grow and mature; height, foot size etc.</li> <li>What people need in order to grow; exercise, food, clothing, shelter.</li> <li>Awareness of human birth; baby in womb until born.</li> <li>Senses, using them to increase awareness.</li> </ul>
<p><b>2. Plants and Animals.</b></p>	<p><b>Variety and characteristics of living things.</b></p> <ul style="list-style-type: none"> <li>Observe, discuss and identify plants and animals in different habitats at a local level.</li> <li>Awareness of animals and plants of other environments.</li> <li>Sorting and grouping living things into sets; flowers, leaves, trees, birds, fruit and vegetables.</li> <li>Recognise and identify external parts of living things.</li> </ul> <p><b>Processes of life:</b></p> <ul style="list-style-type: none"> <li>Observe growth and change in some living things.</li> <li>Explore conditions for growth of bulbs and seeds.</li> <li>Awareness of seasonal change for plants and animals</li> </ul>

**STRAND: Energy and Forces**

Strand Unit	Objectives
<p><b>1. Light.</b></p>	<ul style="list-style-type: none"> <li>Identify and name colours.</li> <li>Sort according to colour.</li> <li>Observe colours in local environment.</li> <li>Explore dark, light, and shades of colours.</li> <li>Awareness of day and night, light and shade.</li> <li>Explore shadows.</li> </ul>
<p><b>2. Sound.</b></p>	<ul style="list-style-type: none"> <li>Recognising and identifying sounds in the environment.</li> <li>High and low, loud and soft sounds.</li> <li>Ways of making different sounds using tins, bottles, metal, paper etc.</li> </ul>

### 3. Heat.

- Hot and cold; weather, food, water and the body.
- Ways of keeping objects and substances warm and cold.

### 4. Magnetism & Electricity.

- Using magnets: purposeful play: discovering effects.
- Investigating 'attraction'.
- Awareness of electricity in school and home.
- Awareness of household appliances using electricity.
- Awareness of dangers of electricity.

### 5. Forces.

- Pushing and pulling- informal activity with toys.
- How shapes can be altered by pulling, squeezing and other forces.
- How forces act on objects:
- Experiment with different materials.
- Objects that sink or float. Push objects into water.

## STRAND: Materials

### Strand Unit

### Objectives

#### 1. Properties & Characteristics of Materials.

- Observe and investigate familiar materials in environment.
- Describe and compare materials.
- Uses of common materials.
- Group according to criteria. i.e. strength, colour, texture and flexibility.
- Investigate for certain properties;
- Materials attracted to magnets.
- Materials that keep us warm.
- Materials that absorb water/ are waterproof.

#### 2. Materials & Change.

- Effects of water on a variety of materials.
- Observe and describe materials when wet/ dry.
- Identify waterproof materials: design outfits that need to be waterproof.
- Effects of heating/ cooling on objects, materials, substances. i.e. ice- cream, butter, chocolate and water.

## STRAND: Environmental Awareness and Care

### Strand Unit

### Objectives

#### Caring for the Environment.

#### Caring for my locality:

- Responsibility for taking care of and improving the environment.
- Identify, discuss and implement strategies for improving and caring for the environment.



- Things I can do: care for, tidy and clean.
- Things we can do together: clean, not litter, recycle and care for.
- Observe, discuss and appreciate aspects of local environment.
- Beauty and diversity of plants and animals in a variety of habitats.
- Attractive elements of physical, natural and human features.

## 1<sup>st</sup> & 2<sup>nd</sup> Class

### STRAND: Living Things

Strand Unit	Objectives
<p><b>1. Human Life</b></p> <p><b>2. Plants and Animals.</b></p>	<p><b>Myself:</b></p> <ul style="list-style-type: none"> <li>• Name and identify external parts of male and female body and their uses.</li> <li>• Using the senses to gather information.</li> <li>• Recognise physical similarities and differences between individuals.</li> <li>• Recognise that living things grow and change and identify requirements for same.</li> <li>• Observe, identify and explore a variety of living things in the environment.</li> <li>• Group living things according to certain characteristics.</li> <li>• Investigate requirements for growth.</li> <li>• Examine seasonal changes in living things and plants.</li> <li>• Life cycles of plants and animals.</li> </ul>

### STRAND: Energy and Forces

Strand Unit	Objectives
<p><b>1. Light.</b></p> <p><b>2. Sound.</b></p> <p><b>3. Heat.</b></p>	<ul style="list-style-type: none"> <li>• Recognise light sources.</li> <li>• Recognise that light is needed in order to see.</li> <li>• Investigate relationship between light and materials (opaque/transparent, etc.)</li> <li>• Recognise benefits and dangers of sun.</li> <li>• Recognising and identifying sounds from the environment.</li> <li>• Difference between high and low, loud and soft.</li> <li>• Explore ways of making different sounds using a variety of materials.</li> <li>• Design and make simple percussion instruments</li> <li>• Become aware of different sources of heat energy.</li> <li>• Learn that temperature is a measure of how hot something is.</li> </ul>

#### 4. Magnetism & Electricity.

#### 5. Forces.

- Measure and compare temperature in different places in the classroom, school and environment
- Using magnets: purposeful play: discovering effects.
- Investigating 'attraction'.
- Awareness of electricity in school and home.
- Awareness of household appliances using electricity.
- Awareness of dangers of electricity.
- Explore movement of objects by pulling/ pushing.
- Explore how moving air or water can make things move.
- Observe and investigate movement of toys, etc. on various materials and surfaces.
- Investigate how forces act on an object.

### STRAND: Materials

#### Strand Unit

#### Objectives

#### 1. Properties & Characteristics of Materials.

- Identify and investigate a range of common materials used in the immediate environment.
- Describe and compare materials- colour, shape and texture.
- Distinguish between natural and manufactured materials.
- Group materials according to their properties.
- Investigate absorbent and waterproof.
- Explore materials and construction.

#### 2. Materials & Change.

- Explore effects of heating and cooling on liquids and solids.
- Explore suitability of different types of clothes for various temperatures.
- Explore how to keep liquids/ solids hot/ cold.
- Investigate change by mixing.
- Investigate characteristics of different materials when wet and dry.

### STRAND: Environmental Awareness and Care

#### Strand Unit

#### Objectives

#### Caring for the Environment.

#### Caring for my locality:

- Identify, discuss and appreciate natural and human features of the local environment.
- Observe and develop awareness of living things.
- Observe similarities and differences among plants and animals.
- Develop awareness that air, water, soil, living and non- living

things are essential to the environment.

- People, animals and plants depend on one another.
- Responsibility for environmental care and strategies for implementation.
- Become aware of ways of polluting the environment.

## 3<sup>rd</sup> & 4<sup>th</sup> Class

### STRAND: Living Things

Strand Unit	Objectives
<b>1. Human Life</b>	<ul style="list-style-type: none"><li>• Awareness of names and structure of body's major external/internal organs.</li><li>• Study the importance of food for energy and growth.</li><li>• Study physical changes in males/ females during growth to adulthood.</li><li>• Become aware of and investigate breathing.</li><li>• Explore and investigate how people move</li></ul>
<b>2. Plants and Animals.</b>	<ul style="list-style-type: none"><li>• Observe, identify and investigate animals/ plants living in local environments.</li><li>• Develop awareness of plants/ animals from the wider environment.</li><li>• Observe and explore ways in which plants and animals behaviour is influenced by, or adapted to, environmental conditions.</li><li>• Sort/ group living things into sets by observing features.</li><li>• Use simple keys to identify common species of plants and animals.</li><li>• Understand that plants use light energy from the sun.</li><li>• Appreciate that animals depend on plants and indirectly on the sun for food.</li><li>• Discuss simple food chains.</li><li>• Awareness of basic life processes in animals.</li><li>• Investigate the factors that affect plant growth.</li></ul>

### STRAND: Energy and Forces

Strand Unit	Objectives
<b>1. Light.</b>	<ul style="list-style-type: none"><li>• Learn that light is a form of energy.</li><li>• Recognise that light comes from different natural and artificial sources.</li><li>• Investigate the relationships between light and materials.</li><li>• Investigate how mirrors/ shiny surfaces are good reflectors.</li><li>• The sun - gives us heat/ light for survival. - can be dangerous if</li></ul>

you look directly at it.

## 2. Sound.

- Learn that sound is a form of energy.
- Recognise and identify a variety of sounds.
- Understand and explore how different sounds may be made by making a variety of materials vibrate. i.e. skin of drum.
- Design and make simple string instruments.
- Explore the fact that sound travels through wood, metal etc.

## 3. Heat.

- Recognise that temperature is a measurement of how hot something is.
- Measure changes in temperature using a thermometer.
- Measure/ compare temperature in different places and discuss the variations.
- Understand that the sun is Earth's most important heat source.
- Identify ways in which homes, buildings and materials are heated. i.e. kettle, cooker.

## 4. Magnetism & Electricity.

- Investigate: current electricity: construct circuits.
- Identify conductors/ insulators.
- Awareness of the dangers of electricity.
- Magnets can push/ pull magnetic materials.
- Explore how magnets have poles and investigate how they attract/ repel each other.
- Explore relationship between magnets and compasses.
- Examine/ classify things which are magnetic or non- magnetic.
- Investigate: magnets attract certain materials through other materials.
- Explore the effects of static electricity.
- What is electrical energy?

## 5. Forces.

- Explore how objects can be moved.
- Explore how moving objects can be slowed down.
- Explore the effect of friction on movement using toys on various surfaces.
- Investigate falling objects.
- Using levers to lift different objects.
- Investigate the pushing force of water.

## STRAND: Materials

**Strand Unit**

**Objectives**

## **1. Properties & Characteristics of Materials.**

- Identify/ investigate common materials (rock) in the immediate environment.
- Recognise materials as solid, liquid or gaseous.
- Describe/ compare materials noting colour, shape and texture.
- Distinguish between raw/ manufactured materials.
- Group materials according to their properties.
- Investigate how materials may be used in construction

## **2. Materials & Change.**

### **Heating and cooling:**

- Explore the effects of heating/ cooling on liquids, solids and gases.
- Investigate the suitability of different kinds of clothes for variations in temperature.
- Experiment to establish which materials are conductors of heat or insulators.

### **Mixing and other changes:**

- Investigate how materials may be changed by mixing.
- Investigate characteristics of materials when wet/ dry.
- Examine changes in materials when physical forces are applied.
- Explore simple ways which materials can be separated.

## **STRAND: Environmental Awareness and Care**

### **Strand Unit**

### **Objectives**

#### **1. Environmental Awareness.**

- Identify positive aspects of natural/ built environments through observation, discussion and recording.
- Identify the inter- relationship of living/ non- living elements of local/ other environments.
- Awareness of the Earth's renewable and non- renewable resources.
- Recognise how the actions of people may impact upon the environment.
- Appreciate the need to conserve resources.

#### **2. Science and the Environment.**

- Begin to explore and appreciate the application of Science and Technology in familiar contexts.
- Identify way in which Science and Technology contribute positively to society.
- Recognise/ investigate human activities which have positive or adverse effects on local and wider environments.

#### **3. Caring for the Environment**

- Examine how to improve/ enhance the local environment.
- Identify/ discuss local, national or global environmental issues. i.e. litter, pollution.
- Realise that there is a personal and community responsibility for taking care of the environment.

# 5<sup>th</sup> & 6<sup>th</sup> Class

## STRAND: Living Things

Strand Unit	Objectives
<b>1. Human Life</b>	<ul style="list-style-type: none"><li>• Develop a simple understanding of the body's major internal/external organs.</li><li>• Develop an understanding of food and nutrition.</li><li>• Develop an understanding of the reproduction systems.</li><li>• Understand 'breathing'.</li><li>• Bodily protection against infection/ disease.</li></ul>
<b>2. Plants and Animals.</b>	<ul style="list-style-type: none"><li>• Observe, identify and examine animals and plants in local habitats.</li><li>• Increase awareness of plants/ animals from the wider environment.</li><li>• Become aware of the relationship between plants and animals.</li><li>• The sun as a source of energy.</li><li>• Explore, observe the effect of environmental conditions on plants and animals.</li><li>• Group and compare plants and animals.</li><li>• Construct simple keys to identify plants and animals.</li><li>• Become aware of basic life processes.</li><li>• Investigate the factors affecting plant growth.</li><li>• Understand how some plants reproduce.</li></ul>

## STRAND: Energy and Forces

Strand Unit	Objectives
<b>1. Light.</b>	<ul style="list-style-type: none"><li>• Light as a form of energy.</li><li>• Light travels from a source.</li><li>• The splitting and mixing of light.</li><li>• Magnifying objects.</li><li>• The dangers of excessive light.</li></ul>
<b>2. Sound.</b>	<ul style="list-style-type: none"><li>• Sound as a form of energy.</li><li>• Recognition of a variety of sounds.</li><li>• Design woodwind instruments.</li><li>• Importance of hearing.</li></ul>
<b>3. Heat.</b>	<ul style="list-style-type: none"><li>• Recognise a variety of heat sources.</li><li>• Heat transferred through different materials.</li><li>• Measure/ record heat using a thermometer.</li></ul>

#### **4. Magnetism & Electricity.**

- Explore the use of magnets to lift and hold objects.
- Magnets can push or pull magnetic materials.
- Making magnets.
- Electrical energy.
- Construct simple circuits.
- Dangers of electricity

#### **5. Forces.**

- Identify and explore how objects can be moved.
- Explore the effect of friction.
- How friction can generate heat.
- Gravity as a force.
- Usage of levers.
- Objects have weight

### **STRAND: Materials**

#### **Strand Unit**

#### **Objectives**

#### **1. Properties & Characteristics of Materials.**

- Recognise materials in the form of solid, gas or liquid.
- Investigate common materials in local environment.
- Explore origins of materials.
- Classify materials and explore usage.
- Materials which decay.
- Air as a composition of gases.
- Practical applications of gases.

#### **2. Materials & Change.**

- The effects of heating and cooling on gases, liquids and solids.
- Conductors and insulators.
- How homes are heated and insulated.
- 'Heating' and 'cooling' to preserve food.
- Mixing materials.
- Effects of light, air and water on materials.
- Oxygen as a requirement for burning.
- How materials change when force is applied.
- Separating simple materials. i.e. using a magnet.

### **STRAND: Environmental Awareness and Care**

#### **Strand Unit**

#### **Objectives**

#### **1. Environmental Awareness.**

- Identify positive aspects of natural/ built environments through observation, discussion and recording.
- Identify the inter- relationship of living/ non- living elements of local/ other environments.

## **2. Science and the Environment.**

- Foster an appreciation of the ways in which people use the Earth's resources.
- Recognise how the actions of people may impact upon the environment.
- Appreciate the need to conserve resources.
- Identify Science used in technology and familiar contexts.
- The positive effects of Science.
- The contribution of Science to society.
- Positive/ negative human input on the environment.

## **3. Caring for the Environment**

- Appreciate individual, community and national responsibility for the environment.
- Identify activities to enhance the environment.
- Identify/ discuss a local, national or global environmental issue.

## **Homework**

Depending on the class level, homework ranges in time from 20 – 40 minutes. Science homework may be content related and in written form. At Clonmonee NS, we try to ensure that there is a balance between skill and knowledge based homework. Research topics may be added as many of the children use the local library. We recommend that differentiation be accommodated in homework e.g., drawing, annotated drawings, comic strip representation, scientists report etc.

## **Individual teachers' planning and reporting**

Teachers will consult this Whole School Plan and the curriculum documents for Science when they are drawing up their long and short term plans.

Teachers will include all the strands and strand units every year and will select objectives within the strand units each year

Where it is meaningful and suitable Science will be taught in a thematic way to integrate with the other SESE subjects of History and Geography. Cúntais Míósúla will assist in recording work covered, in evaluating progress in Science and informing future teaching. Each teacher is required to keep termly or yearly notes. These notes are to be presented in a standard format which is provided at the beginning of the year by the principal.

## **Staff development**

- Teachers will access to reference books, resource materials and websites dealing with Science.
- Teachers will be encouraged to attend in-service workshops and courses on Science in order to enhance their understanding and teaching of the subject. They will up skill other staff in what they have learned by sharing the expertise acquired at these courses. This will be done at staff meetings.
- The culture in our school is one that encourages the sharing of experience and good practice.



- Staff needs will be assessed and the Clare Education Centre will be requested to provide suitable ongoing training as the need arises.

## **Parental involvement**

- Parents are encouraged when needed, to come to the school, to help out in the delivery of this programme. This may be in the supervision of fieldwork or taking part in whole school science activities.
- Parents are invited to celebrate and view results of projects, surveys, school science fairs, investigations in the school or read about them in the school newsletter.
- Parents will be advised to study the Primary School Curriculum; Your child's learning in Primary School, NCCA Parent Resources.

## **Community Links**

Parents and members of the community who could make a particular contribution to the Science programme are encouraged into the school/classes.

We will also welcome visits by speakers from these organisations

- An Garda Síochana – Forensic Dept.
- Sustain Energy Ireland
- Green Schools & Biodiversity
- Bird Watch Ireland
- Heritage in Schools Experts

## **Success criteria**

**In future we shall review this whole school plan under the following headings:**

- How individual teacher preparation, planning and teaching reflects this plan?
- Are procedures outlined in this plan consistently followed?
- How methodologies listed in this whole school plan are working in the classroom?
- Science resources
- How successful are the scientific concepts learnt by the children?
- How well are the children's scientific investigations skills progressing?
- Evidence of practical activities in the classrooms
- Evidence of indoor and outdoor work

## **Means of assessing the outcomes of the plan will include**

- Revisiting the aims of this plan as a staff
- Teacher/Parent feedback
- Children's feedback
- Inspectors reports/suggestions
- Results of class assessment

## **Implementation**

### **Roles and Responsibilities**

The plan will be supported, developed and implemented by:

- The Board of Management of Clonmoney National School
- The principal
- The parents/guardians of children at Clonmoney National School
- The staff of Clonmoney National School

### **The following staff members will have responsibility for the following:**

1. Scientific audit of school grounds and immediate locality: All staff
2. Fieldwork, trails and packs - All staff
3. Purchase, maintenance and storage of resources - Post Holder
4. Leading the development of the new methodologies identified - All staff
5. Liaising with community organizations and relevant agencies - Post Holder; Principal
6. The development of ICT as a learning tool in Science and the vetting of websites - Post Holder; Principal
7. Attendance at up skilling workshops and courses as well as providing feedback to staff; All staff

### **Timeframe**

Timeframe for implementation: From April 2024.

### **Review**

It will be necessary to review this plan on a regular basis to ensure optimum implementation of the Science curriculum. We aim to review this plan in 2025/26. On this date we will refer to the tasks in our action plan and check that they have been completed in accordance with the agreed time frame.

### **Roles and Responsibilities**

The following people will be involved in the review of the Science plan:

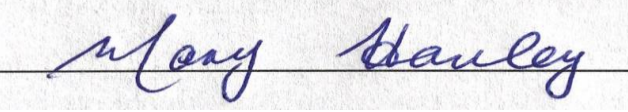
- The Board of Management of Clonmoney National School
- The principal
- The teachers
- The pupils
- The parents/guardians of Clonmoney National School

## **Ratification**

This school plan for Science will be distributed to all teachers by April 22<sup>nd</sup> 2024. with a view to having it ratified by the Board of management in April 2024.

This plan was ratified by the Board of Management on:

Date: **22<sup>nd</sup> April 2024**

Signed:   
(Chairperson Board of Management)

## 4. Science Curriculum Strands and Strand Units

➤ Sample Topics to use across Strand Units



### Junior & Senior Infants

Strand	Strand Unit	Topic Name & Resources	
<p><b>Living Things</b></p> <p><b>Living Things</b></p> <p><b>Energy and Forces (SI)</b></p>	<p><b>Myself</b></p> <p><b>Plants and Animals</b></p> <p><b>Light (SI)</b></p>	<p style="color: red;"><b>Juniors</b></p> <p><b>September</b></p> <p><b>Theme: Myself</b></p> <p><b>Living Things    Myself</b></p> <ul style="list-style-type: none"> <li>● Look at Me- body parts</li> <li>● My senses</li> </ul> <p><b>October</b></p> <p><b>Theme: Autumn</b></p> <p><b>Living Things    Plants and Animals</b></p> <ul style="list-style-type: none"> <li>● The Squirrel</li> <li>● The Tree</li> </ul> <p><b>November</b></p>	<p style="color: red;"><b>Seniors</b></p> <p><b>September</b></p> <p><b>Theme: Myself</b></p> <p><b>Living Things: Myself</b></p> <ul style="list-style-type: none"> <li>● My Body</li> <li>● I Am Growing Taller</li> </ul> <p><b>October</b></p> <p><b>Theme: Autumn</b></p> <p><b>Living Things: Plants and Animals</b></p> <p><b>Energy and Forces: Light</b></p> <ul style="list-style-type: none"> <li>● The Bat</li> <li>● Mixing Colours</li> </ul> <p><b>November</b></p>

<p><b>Energy and Forces</b> <b>Materials (JI)</b></p>	<p><b>Electricity (JI) Sound (SI)</b> <b>Properties &amp; Characteristics of Materials (JI)</b></p>	<p><b>Theme: Homes</b> <b>Energy &amp; Forces- Electricity</b> <b>Materials- Properties &amp; characteristics of materials</b></p> <ul style="list-style-type: none"> <li>• Electricity at home</li> <li>• What is it made from?</li> </ul> <p><b>December</b></p>	<p><b>Theme: Sound</b> <b>Energy and Forces: Sound</b></p> <ul style="list-style-type: none"> <li>• Loud and Soft Sounds</li> <li>• Design and Make a Shaker</li> </ul>
<p><b>Living Things</b> <b>Natural Environments (JI)</b> <b>Environmental Awareness &amp; Care (SI)</b></p>	<p><b>Plants and Animals</b> <b>Weather (JI)</b> <b>Caring for my Locality (SI)</b></p>	<p><b>Theme: Winter</b> <b>Natural Environments Weather</b> <b>Living Things Plants &amp; animals</b></p> <ul style="list-style-type: none"> <li>• Weather</li> <li>• The Penguin</li> </ul>	<p><b>December</b> <b>Theme: Winter</b> <b>Living Things: Plants &amp; animals</b> <b>Environmental Awareness &amp; Care: Caring for my Locality</b></p> <ul style="list-style-type: none"> <li>• The Polar Bear</li> <li>• Design and Make a Bird Feeder</li> </ul>
<p><b>Energy and Forces</b> <b>Materials (JI)</b> <b>Living Things (SI)</b></p>	<p><b>Forces</b> <b>Properties &amp; characteristics of materials (JI)</b> <b>Myself (SI)</b></p>	<p><b>January</b> <b>Theme: Play</b> <b>Energy &amp; forces Forces</b> <b>Materials- Properties &amp; characteristics of materials</b></p> <ul style="list-style-type: none"> <li>• On the move!</li> <li>• Let's make playdough</li> </ul>	<p><b>January</b> <b>Theme: Sport</b> <b>Energy &amp; Forces: Forces</b> <b>Living Things: Myself</b></p> <ul style="list-style-type: none"> <li>• Design and Make a Table Football Game</li> <li>• Exercise is Good for You!</li> </ul>

<p><b>Living Things</b> <b>Energy and Forces (JI)</b> <b>Materials (SI)</b></p>	<p><b>Plants and Animals</b> <b>Sound (JI)</b> <b>Properties &amp; Characteristics of Materials (SI)</b></p>	<p><b>February</b> <b>Theme: Places</b> <b>Energy &amp; forces Sound</b> <b>Living Things Plants &amp; Animals</b></p> <ul style="list-style-type: none"> <li>• Town sounds and country sounds</li> <li>• Animal habitats</li> </ul>	<p><b>February</b> <b>Theme: Places</b> <b>Living Things: Plants &amp; Animals</b> <b>Materials: Properties &amp; Characteristics of Materials</b></p> <ul style="list-style-type: none"> <li>• The Snail</li> <li>• Design &amp; Make a Tower</li> </ul>
<p><b>Living Things</b> <b>Natural Environments (JI)</b> <b>Energy &amp; Forces</b></p>	<p><b>Plants &amp; Animals</b> <b>Weather (JI)</b> <b>Magnetism (JI)</b></p>	<p><b>March</b> <b>Theme Spring</b> <b>Natural Environments Weather</b> <b>Living Things Plants &amp; Animals</b></p> <ul style="list-style-type: none"> <li>• The Lifecycle of a Chicken</li> <li>• Grow your own beanstalk</li> </ul> <p><b>April</b> <b>Theme Transport</b> <b>Energy &amp; Forces Magnetism and Electricity</b></p> <ul style="list-style-type: none"> <li>• Magnets</li> </ul>	<p><b>March</b> <b>Theme: Spring</b> <b>Living Things: Plants &amp; Animals</b></p> <ul style="list-style-type: none"> <li>• The Spring Garden</li> <li>• The Lifecycle of a Butterfly</li> </ul> <p><b>April</b> <b>Theme: Space</b> <b>Energy &amp; Forces: Heat; Forces</b></p> <ul style="list-style-type: none"> <li>• Keep me Cosy!</li> <li>• Blast Off!</li> </ul> <p><b>May</b></p>



**SEE Science: First & Second Classes**

<b>Strand</b>	<b>Strand Unit</b>	<b>Topic Name &amp; Resources</b>	
		<b>1<sup>st</sup> Class</b>	<b>2<sup>nd</sup> Class</b>
<b>Living Things</b>	<b>Myself</b>	<p><b>September</b>  <b>Theme: Myself</b></p> <p><b>Living Things - Myself</b></p> <ul style="list-style-type: none"> <li>• I Have Five Senses</li> <li>• My Sense of Smell</li> <li>• My Sense of Touch</li> </ul>	<p><b>September</b>  <b>Theme: Myself</b></p> <p><b>Living Things - Myself</b></p> <ul style="list-style-type: none"> <li>• A Night's Sleep</li> <li>• Teeth</li> <li>• How much Sugar?</li> </ul>
<b>Energy and Forces</b>  <b>Living Things</b>	<b>Light</b>  <b>Plants and Animals</b>	<p><b>October</b></p> <p><b>Theme: Autumn</b></p> <p><b>Energy and Forces Light</b></p> <p><b>Living Things Plants and Animals</b></p> <ul style="list-style-type: none"> <li>• Light</li> <li>• Design and Make a Greenhouse</li> <li>• Spiders</li> </ul>	<p><b>October</b></p> <p><b>Theme: Autumn</b></p> <p><b>Energy and Forces- Light</b></p> <ul style="list-style-type: none"> <li>• Design and make a sundial</li> </ul> <p><b>Living Things- Plants and Animals</b></p> <ul style="list-style-type: none"> <li>• Native Irish Trees</li> </ul> <p><b>Materials - Materials and change</b></p> <ul style="list-style-type: none"> <li>• Spooky Slime!</li> </ul>



<p><b>Energy and Forces</b> <b>Living Things</b></p>	<p><b>Heat</b> <b>Plants and Animals</b></p>	<p><b>November</b> <b>Theme: Homes</b></p> <p><b>Energy and Forces Heat</b> <b>Living Things Plants and Animals</b></p> <ul style="list-style-type: none"> <li>• Heat</li> <li>• Owls</li> <li>• Amazing Animal Homes!</li> </ul> <p><b>December</b> <b>Theme: Winter</b></p> <p><b>Materials Materials and Change</b> <b>Materials Properties and Characteristics of Materials</b></p> <p><b>Living Things Plants and Animals</b></p> <ul style="list-style-type: none"> <li>• Irish Seals</li> <li>• Salt Crystals</li> <li>• Does Fat Keep you Warm?</li> </ul> <p><b>January</b> <b>Theme: Play</b> <b>Energy and Forces</b> <b>Materials Properties and</b></p>	<p><b>November</b> <b>Theme: Sound</b></p> <p><b>Living Things - Myself</b></p> <ul style="list-style-type: none"> <li>• My Sense of Hearing</li> </ul> <p><b>Energy and Forces - Sound</b></p> <ul style="list-style-type: none"> <li>• Pitch - High and Low Sounds</li> <li>• Jumping Rice!</li> </ul> <p><b>December</b> <b>Theme: Winter</b></p> <p><b>Materials: Materials and Change.</b></p> <ul style="list-style-type: none"> <li>• Investigating Insulation</li> </ul> <p><b>Materials: Properties and Characteristics of Materials.</b></p> <ul style="list-style-type: none"> <li>• Design a ski jacket</li> </ul> <p><b>Living Things: Plants and Animals</b></p> <ul style="list-style-type: none"> <li>• The Reindeer</li> </ul> <p><b>January</b> <b>Theme: Sports</b> <b>Energy and Forces</b></p>
<p><b>Living Things</b> <b>Materials</b></p>	<p><b>Plants and Animals</b> <b>Materials and Change</b> <b>Properties and Characteristics of Materials</b></p>		



<p><b>Living Things</b> <b>Environmental Awareness and Care</b></p>	<p><b>Plants and Animals</b> <b>Caring for my Locality</b></p>	<ul style="list-style-type: none"> <li>• Recycling</li> </ul> <p><b>April</b> <b>Theme: Spring</b> <b>Living Things    Plants and Animals</b> <b>Environmental Awareness and Care</b> <b>Caring for my Locality</b></p> <ul style="list-style-type: none"> <li>• Animal Babies</li> <li>• Spring Clean-up</li> <li>• Recycling</li> </ul> <p><b>May</b> <b>Theme: Food</b> <b>Living Things    Plants and Animals</b> <b>Living Things    Myself</b></p> <ul style="list-style-type: none"> <li>• My Sense of Taste</li> <li>• Healthy Food is Good for Me</li> <li>• Fruit and Vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• Design and make a House.</li> </ul> <p><b>April</b> <b>Theme: Space</b> <b>Living Things - Plants and Animals</b></p> <ul style="list-style-type: none"> <li>• How do Plants Respond to Light</li> </ul> <p><b>Living Things - Myself</b></p> <ul style="list-style-type: none"> <li>• My Sense of Sight</li> </ul> <p><b>Energy and Forces- Magnetism and Electricity</b></p> <ul style="list-style-type: none"> <li>• Exploring Static Electricity</li> </ul> <p><b>May</b> <b>Theme: Water</b> <b>Living Things - Plants and Animals</b></p> <ul style="list-style-type: none"> <li>• The Humpback Whale</li> </ul> <p><b>Energy and Forces - Forces</b></p> <ul style="list-style-type: none"> <li>• Floating and Sinking</li> <li>• Design and make a Sail Boat</li> </ul>
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## SEE Science: Third & Fourth Classes

Strand	Strand Unit	Topic Name & Resources	
		3 <sup>rd</sup> Class	4 <sup>th</sup> Class
<b>Materials</b>	<b>Properties and characteristics of materials</b>	<ul style="list-style-type: none"> <li>● Materials in My Home</li> </ul>	<ul style="list-style-type: none"> <li>● Materials in the Classroom</li> <li>● The Science of Fabrics</li> </ul>
	<b>Materials and Care</b>		
<b>Environmental Awareness and Care</b>	<b>Materials and Change</b>	<ul style="list-style-type: none"> <li>● Air Pollution</li> <li>● Sustainability in Urban Areas</li> <li>● Bicycles</li> <li>● Appreciating My Locality</li> </ul>	<ul style="list-style-type: none"> <li>● Mixtures</li> <li>● Separating Mixtures</li> <li>● Keeping Warm and Staying Cool</li> <li>● Combatting Waste</li> <li>● Deforestation</li> <li>● Pollution of the Ocean</li> </ul>
	<b>Caring for the Environment</b>		
	<b>Science and the environment</b>		
	<b>Environmental awareness</b>		
		<ul style="list-style-type: none"> <li>● Water Pollution</li> <li>● Heat</li> <li>● Heating Our Homes</li> </ul>	<ul style="list-style-type: none"> <li>● City Microclimates</li> <li>● How were the Pyramids built?</li> </ul>

<p><b>Energy and Forces</b></p>	<p><b>Heat</b></p>	<ul style="list-style-type: none"> <li>● Magnetism</li> <li>● Magnets, Magnets, Everywhere!</li> <li>● Static Electricity</li> <li>● Current Electricity</li> </ul>	<ul style="list-style-type: none"> <li>● Why do boats Float?</li> <li>● Light Sources</li> <li>● Light and Materials</li> </ul>
<p><b>Living Things</b></p>	<p><b>Forces</b></p>	<ul style="list-style-type: none"> <li>● What's in Our Green Spaces?</li> <li>● How Seeds Feed Us</li> </ul>	<ul style="list-style-type: none"> <li>● How Sound is Made</li> <li>● The Nature of Sound</li> </ul>
<p></p>	<p><b>Light</b></p>	<ul style="list-style-type: none"> <li>● River Wildlife</li> <li>● Non-native Species</li> </ul>	<ul style="list-style-type: none"> <li>● The Circle of Life</li> <li>● Ireland's Native Species</li> </ul>
<p></p>	<p><b>Sound</b></p>	<ul style="list-style-type: none"> <li>● Nutrition and Energy</li> <li>● Breathing</li> <li>● Our Teeth</li> <li>● How My Body Moves</li> </ul>	<ul style="list-style-type: none"> <li>● Life Cycles</li> <li>● Our Brainy Brain</li> <li>● The Heart</li> </ul>
<p></p>	<p><b>Magnetism &amp; Electricity</b></p>	<p><b><u>Resources used:</u></b></p> <p>Explore with Me</p>	<p><b><u>Resources used:</u></b></p> <ul style="list-style-type: none"> <li>● Explore with Me 4</li> <li>● Science Kits</li> </ul>
<p></p>	<p><b>Plant and Animal Life</b></p>	<p></p>	<p></p>
<p></p>	<p><b>Human Life</b></p>	<p></p>	<p></p>

## SEE Science: - 5<sup>th</sup> & 6<sup>th</sup> Classes

<b>Strand</b>	<b>Strand Unit</b>	<b>Topic Name &amp; Resources</b>	
<b>Materials</b>	<b>Properties and characteristics of materials</b>	<b>5th Class</b>	<b>6<sup>th</sup> Class</b>
	<b>Materials and Change</b>	<ul style="list-style-type: none"> <li>● Materials (building materials, properties of materials, matter)</li> <li>● Heat at Home</li> </ul>	<ul style="list-style-type: none"> <li>● Building Bridges</li> <li>● Materials and change</li> </ul>
	<b>Caring for the Environment</b>	<ul style="list-style-type: none"> <li>● Climate Change</li> </ul>	<ul style="list-style-type: none"> <li>● Celebrating local plants and animals</li> </ul>
	<b>Science and the environment</b>	<ul style="list-style-type: none"> <li>● Heating and Cooling</li> </ul>	<ul style="list-style-type: none"> <li>● Wind Farms</li> <li>● The air we breathe</li> </ul>
<b>Environmental Awareness and Care</b>	<b>Environmental awareness</b>	<ul style="list-style-type: none"> <li>● The Force of Friction</li> <li>● The Scientific Method</li> <li>● Gravity</li> </ul>	<ul style="list-style-type: none"> <li>● Wind Farms</li> <li>● Aerodynamics</li> </ul>
	<b>Forces</b>		
<b>Energy and Forces</b>	<b>Light</b>		

<p><b>Living Things</b></p>	<p><b>Sound</b></p> <p><b>Heat</b></p> <p><b>Magnetism &amp; Electricity</b></p> <p><b>Plant and Animal Life</b></p> <p><b>Human Life</b></p>	<ul style="list-style-type: none"> <li>● Heat at Home</li> <li>● Heating and Cooling</li>   <li>● Magnetism and Electricity</li>   <li>● What lies beneath (marine plants &amp; animals)</li> <li>● The Burren: An Ecosystem</li>   <li>● Keeping our Body Healthy</li> <li>● Teeth</li> <li>● The Digestive System</li>   <p><b><u>Resources used:</u></b></p> <p>Explore with Me 5</p> </ul>	<ul style="list-style-type: none"> <li>● Aircraft carriers: machines at work</li> <li>● Light</li> <li>● Sounds all around Us</li> <li>● Plunkett, the wireless and the properties of Sound</li>   <li>● Amazing Animals</li> <li>● The Air We Breathe</li> <li>● Food Chains and Life cycles</li> <li>● Hearing and the Ear</li>   <p><b><u>Resources used:</u></b></p> <p>Explore with Me 6</p> <p>Science Kits</p> </ul>
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