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| **Pendeen SCIENCE SCOPE, CONTENT and SEQUENCING Year B LOWER KEY STAGE 2** |
| Year Group: 3 / 4 | Half term: Year BAutumn 1 | SCOPE: Animals including Humans  | CONTENT / INTENT: Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eatIdentify that humans and some other animals have skeletons and muscles for support, protection and movement |
| Prior Learning | Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 | Lesson 5 | Lesson 6 | Future Learning |
| **Previous Knowledge:****Yr. 2 – Animals including Humans -** Find out and describe the basic needs of animals, including humans, for survival (water, food, and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.  | **LO:** The Importance of Nutrition | **LO:** The Importance of Nutrition | **LO:** TheHumanSkeleton | **LO:** TheHumanSkeleton | **LO:** Muscles in the Human Body | Review of Learning  | Continue to reflect on Memory book and use low stake questioning to embed into long-term memory. Continue learning in Autumn Term 2.Next subject focus.In UKS2 children will learn I know how to describe the changes as humans develop to old age |
| **Success Criteria**Children can name some of the different nutrient groups.Name some of the foods associated with each nutrient group.Describe what a healthy, balanced meal looks likeClassify animals as carnivorous, herbivorous, or omnivorous | **Success Criteria**Describe what a healthy, balanced meal looks likeClassify animals as carnivorous, herbivorous, or omnivorous. | **Success Criteria**To be able to name a variety of animals that have a skeleton. To identify that humans have a skeleton | **Success Criteria**Name some parts of the skeletonDiscuss the possible functions of the skeleton | **Success Criteria**To be able to name some muscles in animals.Discuss the functions of muscles in the body.Can I identify some locations of muscles in the body.Describe how some muscles work together | **Success Criteria**Assessment of learning that has taken place – consolidation activity. |
| See previous year groups vocabulary box in this document. | **Vocabulary:**Protein, Carbohydrate, Fat, Vitamin, Minerals, Fibre, Water, Calorie, Energy, Diet, Vegetarian, Vegan, Carnivore, Herbivore, OmnivoreSkeleton, Bone, Spine, Humerus, Radius, Ulna, Femur, Fibula, Tibia, Cranium, Ribs, Calcium, X-Rays, Internal, Vertebrate. |

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| **Pendeen SCIENCE SCOPE, CONTENT and SEQUENCING Year B LOWER KEY STAGE 2** |
| Year Group: 3 / 4 | Half term: Year BAutumn 2 | SCOPE: Light  | CONTENT / INTENT: Recognise that they need light in order to see things and that dark is the absence of lightNotice that light is reflected from surfacesRecognise that light from the sun can be dangerous and that there are ways to protect their eyesRecognise that shadows are formed when the light from a light source is blocked by an opaque objectFind patterns in the way that the size of shadows change |
| Prior Learning | Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 | Lesson 5 | Lesson 6 | Future Learning |
| **Yr. 1 – Seasons and How They Change** – Observe and describe weather associated with the seasons and how day length varies. | **LO:**Darkness, Sunlight and reflection | **LO:**Darkness, Sunlight and reflection | **LO:**Shadows | **LO:**Shadows | **LO:**Shadows | **LO:**Review of learning and consolidation | Continue to reflect on Memory book and use low stake questioning to embed into long-term memory. Continue Science learning in Spring Term 1.Children will also continue developing their knowledge in year 5/6 recognising that light appears to travel in straight linesKnowing how to use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.How to explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. |
| **Success Criteria:**To state that darkness is an absence of light.To understand that light is reflected from objects, and that opaque objects make the best reflectors.Describe why the Sun can be dangerous to our eyes and how to protect them. | **Success Criteria:**Describe why the Sun can be dangerous to our eyes and how to protect them. | **Success Criteria:**Children will be able to say that we have shadows because a shape blocks the light.Understand that a shadow has a similar shape as the object blocking the lightDescribe how to change the size of a shadow. | **Success Criteria:**Understand that a shadow has a similar shape as the object blocking the light | **Success Criteria:**Describe how to change the size of a shadow. | **Success Criteria:** Assessment of Learning. |
| See previous year groups vocabulary box in this document. | **Vocabulary:** Darkness, Reflection, Angle of Incidence, Angle of Reflection, Lux. Transparent, Translucent, Opaque, Cast, Light Source, Reflection. |
| **Pendeen SCIENCE SCOPE, CONTENT and SEQUENCING Year B LOWER KEY STAGE 2** |
| Year Group: 3 / 4 | Half term: Year BSpring 1 | SCOPE: Forces | CONTENT / INTENT: Compare how things move on different surfacesNotice that some forces need contact between 2 objects, but magnetic forces can act at a distanceObserve how magnets attract or repel each other and attract some materials and not othersCompare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materialsDescribe magnets as having 2 polesPredict whether 2 magnets will attract or repel each other, depending on which poles are facing |
| Prior Learning | Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 | Lesson 5 | Lesson 6 | Future Learning |
| **Yr. 1 – Everyday Materials –** Describe the simple physical properties of a variety of everyday materials.Compare and group together a variety of everyday materials on the basis of their physical properties. | LO: Friction | LO: Friction | LO: Magnetism | LO: Magnetism | LO: Magnetism | LO: Review of Learning and Consolidation | Continue to reflect on Memory book and use low stake questioning to embed into long-term memory. Continue Science learning in Spring Term 1.**Yr. 5 – Forces -** identify the effects of air resistance, water resistance and friction, that act between moving surfaces.Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. |
| Success Criteria:Can state that friction is a force that is caused by two surfaces rubbing together.Can state that friction is a force that slows moving objects.Can describe how different surfaces affect frictionCan give examples where friction is useful and where it is not useful. | Success Criteria:Can describe how different surfaces affect frictionCan give examples where friction is useful and where it is not useful. | Success Criteria:Recognise that magnetism is an invisible, non-contact force that can act at a distance. State that magnets have 2 poles and that like poles repel each other and opposite poles attract each other.State which type of materials are attracted to magnets. | Success Criteria:Predict whether magnets will attract or repel each other based on which poles are facing each other.  | Classify different materials based on whether they are attracted to a magnet or not | Success Criteria:Assessment |
| See previous year groups vocabulary box in this document. | **Vocabulary:**Friction, Lubricant, Surface, Rough, Smooth, Force. |
| **Pendeen SCIENCE SCOPE, CONTENT and SEQUENCING Year B LOWER KEY STAGE 2** |
| Year Group: 3 / 4 | Half term: Year BSpring 2 | SCOPE: Plants | CONTENT / INTENT: Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowersExplore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plantInvestigate the way in which water is transported within plantsExplore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal |
| Prior Learning | Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 | Lesson 5 | Lesson 6 | Future Learning |
| I know how to describe the basic needs of plants for survival and the impact of changing these and the main changes as seeds and bulbs grow into mature plantsI know how to observe and describe how seeds and bulbs grow into mature plantsI know how to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. | **LO:** Introduction to Plants – Roots and their functions | LO: Plants – Roots and their functions | LO: Plants - Leaves | LO: Plants - Leaves | LO: How Water is Transported in Plants | LO: Review of learning – Teacher Assessment. | Continue to reflect on Memory book and use low stake questioning to embed into long-term memory. Continue learning in Summer Term 1. |
| **Success Criteria**Assessment and Introduction – covering Summer 1 too.Project Planning (Working Scientifically)Plan project with children to make use of polytunnel and grow flowers/plants to link to LO’s | **Success Criteria:**Children can describe the differences and similarities between tree roots and other types of plant.Describe how water and nutrients are taken up by the plant through the root. Describe roots as important for the stability of the plant. | **Success Criteria**Children can identify that the surfaces of a leaf are different from each other. Know that the stomata are situated on the underside of a leaf.  | **Success Criteria:**Describe the leaf features of different plant species. | **Success Criteria:**Can name the structures in the stem in which water and nutrients are transported.Can describe the journey of water through a plantCan define transpiration. | **Success Criteria:**Teacher Assessment. Week for review/completion/Consolidation of any outstanding tasks/Assessment. |
| **bulbs. germination, reproduction (questions that recognise growth), growth, survival** | **Vocabulary:** Pitch, frequency, loudness, volume, solid, liquid, gas, particle, vibration, dissipate, propagate.Microscope, leaf, vein, stomata, photosynthesis, carbon dioxide, water, oxygen, glucose, starch, stomata. |

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| **Pendeen SCIENCE SCOPE, CONTENT and SEQUENCING Year B LOWER KEY STAGE 2** |
| Year Group: 3 / 4 | Half term: Year BSummer 1 | SCOPE: Plants | CONTENT / INTENT: Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowersExplore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plantInvestigate the way in which water is transported within plantsExplore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal |
| Prior Learning | Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 | Lesson 5 | Lesson 6 | Future Learning |
| I know how to describe the basic needs of plants for survival and the impact of changing these and the main changes as seeds and bulbs grow into mature plantsI know how to observe and describe how seeds and bulbs grow into mature plantsI know how to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. | **LO:** Flowers, Pollination and Seeds | **LO:** Flowers, Pollination and Seeds | **LO:** How Nutrients and Room affect Plant Growth | **LO:** How Light and Water affect Plant Growth | **LO:** Consolidate learning by reflecting on project – growing. | **LO:**Review of learning/consolidation | Continue to reflect on Memory book and use low stake questioning to embed into long-term memory. Continue onto Summer 2’s programme of learning. |
| **Success Criteria:**Initial Assessment and Project Planning (Working Scientifically)Plan project with children to make use of polytunnel and grow flowers/plants to link to LO’s. | **Success Criteria:**I can name some the parts of a flower and their function.I can describe the process of pollination and name some pollinators. I can say that fertilisation is when a pollen grain and an ovum fuse together and it will eventually result in a seed being formed.I can identify some methods for how seeds are dispersed. | **Success Criteria:**Name some of the nutrients that plants need.Identify some of the health problems plant will have if they do not get the minerals they needDescribe why some plants have evolved to be carnivorous. | **Success Criteria:**Children will be able to explain why plants need air, light and water for healthy growth. | **Success Criteria:**Opportunity to write a report including pictures around how plants have grown and what they have learnt about plants. | **Success Criteria:**Teacher Assessment. |
| See previous year groups vocabulary box in this document. | **Vocabulary**: Photosynthesis, carbon dioxide, water, glucose, oxygen. |

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| **Pendeen SCIENCE SCOPE, CONTENT and SEQUENCING Year B LOWER KEY STAGE 2** |
| Year Group: 3 / 4 | Half term: Year BSummer 2 | SCOPE: Rocks | CONTENT / INTENT:Compare and group together different kinds of rocks on the basis of their appearance and simple physical propertiesDescribe in simple terms how fossils are formed when things that have lived are trapped within rockRecognise that soils are made from rocks and organic matter |
| Prior Learning | Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 | Lesson 5 | Lesson 6 | Future Learning |
| **Yr.1 – Animals including humans** - identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. | **LO:** Introduction to Rocks | **LO:** Sedimentary and Metamorphic Rocks | **LO:** Igneous Rocks and Minerals | **LO:** Fossils | **LO:** Soils | LO: Review of Learning | Continue to reflect on Memory book and use low stake questioning to embed into long-term memory. Year 4’s will progress onto the Year 5 Curriculum. Year 3’s will progress their scientific learning onto Year A. |
| **Success Criteria:**Children can describe the features of different rocks and can classify rocks based on their features. | **Success Criteria:**Children can describe how sedimentary/metamorphic rocks are formed.Give some examples of sedimentary/metamorphic rocks.Describe some of the features of sedimentary/metamorphic rocks. | **Success Criteria:**Children can describe how igneous rocks are formed.Children can give some examples of igneous rocks.Children can describe some of the features of igneous rocks. | **Success Criteria:**Children can describe what a fossil is. Children can describe how a fossil is formed. Children can identify fossils as plant or animal. | Success Criteria:Children can state that soil is made up of rocks and organic matter.Name the types of soil.List some of the properties of soil. | Success Criteria:Assessment of Learning.Can children create a poster of the information they have found out this term. – Linked with computing curriculum. |
| See previous year groups vocabulary box in this document. | Vocabulary: Sedimentary, Metamorphic, Characteristic, Geology, Geologist, Chalk, Limestone, Mudstone, Marble, Gneiss. |