Durham Lane Primary School: Topic Planning

Topic: The Rainforest/Kensuke's Kingdom **Term:** Summer **Class:** 5/6

Subjects	Objectives	Key Knowledge	Key Vocabulary	Skills	Activities/ Tasks
English	See progression sheets			**See progression sheets**	Here are some examples of writing tasks that children will complete during this topic. These tasks cover a range of genres and not all tasks will be undertaken: Children will take part in a class debate about deforestation. Using question stems, chd will write figurative poems about life in the rainforest. After detailed research, chd will write non-chronological reports about rainforests, including where they are located, what they are like, which species they house and why they should be protected. .Chd will write persuasive letters to the South American government trying to discourage deforestation. Write diary entries from Michael's point of view at various parts of the Kensuke story. Write a persuasive leaflet to encourage people to visit Brazil
Geography **Key question:** Where are tropical rainforests mainly located and why? **Splinter Questions:** 1. Where are tropical rainforests located in the world? 2. Why are tropical rainforests located between the two tropics? 3. What are grid references and how can these be used to locate places on maps? 4. What are climate zones and how do they differ between regions? 5. How can we use maps and scales to measure distances from one country to another? 6. What is it like in a tropical rainforest? 7. What natural resources can be found in the places studied and where are these exported to? 8. How is Brazil different to the UK? For example, climate, resources and physical features.	1c. Identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, the Prime/Greenwich Meridian and time zones (including day and night). 2. Understand geographical similarities and differences through the study of human and physical geography of a region of South America – compare to the UK, physical geography 3a. Physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains. 3b. Human Geography, including:	Location • To know where a range of countries in North and South America are on a map. • **To know how to use 4 and 6 figure grid references to locate places.** • **To know understand the terminology latitude, longitude, equator, northern hemisphere and the Topics of Cancer and Capricorn and to use maps to discuss them.** Human Features • **To know which goods some of the countries in North, Central and South America export and why.** Physical Features • To know what different physical features certain regions of North/South America have e.g. mountains, rainforests etc. and to compare this to UK. Climate • **To know about the different climate zones in North, South and Central America and how this affects imports and exports.** Mapping To know how to use an atlas to find out about features of different places. **To know about the 8 points of the compass.** **To know how to use keys and symbols on Ordnance survey maps.**	**Tier 2 words** Distribute Locate Climate Import Export Features Natural Resources Origin Position Mountainous Physical features **Tier 3 words** Longitude Latitude Equator Hemisphere Tropics Coordinates Ordnance Survey Grid references Climate Zones Vegetation belts Biomes	**Geographical enquiry** 1) Suggest questions for investigating 2) Investigate places with more emphasis on the larger scale; contrasting and distant places 3) Collect and record evidence e.g. temperature and rainfall comparisons 4) Analyse evidence from primary and secondary sources and draw conclusions e.g. compare temperature of various locations - influence on people/everyday life 5) Analyse evidence and draw conclusions, identifying patterns and explain reasons behind them. **Direction/location** 1) Use 4 figure co-ordinates confidently to locate features on a map. 2) Use 8 compass points confidently and accurately 3) Begin to use 6 figure grid refs; use latitude and longitude on atlas maps **Representation** 3) Use atlas symbols. **Using Maps** 2) Select a map for a specific purpose. (E.g. Pick atlas/globe to find where different countries/cities of South America are). 4) Locate places on a world map. 5) Use atlases to find out about other features of places. (e.g. mountain regions, weather patterns) **Scale/distance** 1) Measure straight line distance on a plan/map. 2) Find/recognise places on maps of different scales. (E.g. Counties and cities in UK) 3) Use a scale to measure distances. 4) Use maps and plans at a range of scales. **Map Knowledge** 1) Confidently identify significant places and environments. **Style of Map**	Chd will be reminded about lines of longitude and latitude, tropics, hemispheres and use atlases and other information/resources to locate the countries which house rainforests. They will recap 4 and learn about 6 figure grid references. They will be introduced to the term climate zone and will look at the different climate zones in the world using an atlas. Chd will be asked to measure straight line distances from one location to another, using a range of maps and will see how far it is from the UK to each of the rainforests they have previously located. Chd will learn about the layers of the rainforest and will be able to discuss the different plants and animals that live in each of the layers, explaining how they are adapted to these conditions. Chd will find out about the difference between climate and weather and will be given information about the climate in different rainforest regions. They will use this information in small groups to make a weather forecast to present to the rest of the group. Chd will look at the main rainforests and find out about the natural resources of these places and where/how they distribute them. They will measure airmiles that different products need to travel to get to the UK. Chd will compare the climate/weather patterns/rivers/mountains/natural resources of Brazil compared to the UK. They will produce leaflets encouraging people to visit this country, but will also find out about places in Brazil that are not so popular to visit and consider poverty. Chd will complete rainfall and temperature graphs of differing types and will be encouraged to find data, record it appropriately and compare to similar graphs they have made using UK data. They will complete an activity where they have been shown a graph and have to find matching data.

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9. What are biomes and vegetation belts? 10. Why is the Amazon River so important?	distribution of natural resources including food 3c. Use maps, atlases, globes to locate countries and describe features studied. 3d. Use the eight points of a compass, four and six figure grid references, symbols and key to build their knowledge of UK and the wider world.			1) Use index and contents page within atlases. 2) Recognise world map as a flattened globe.	Chd will find out about the Amazon river and how it affects the whole rainforest. They will be introduced to the terms biome and vegetation belts in relation to the River Amazon.
Science	6.1 Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences plants and animals 6.2 Give reasons for classifying plants and animals based on specific characteristics. 5.1 Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird 5.3 Describe the changes as humans develop to old age. 5.2 Describe the life process of reproduction in some plants and animals.	To know how to group animals according to their characteristics. **To know how to classify a range of animals and use reasons for this.** **To know how to classify plants into different categories.** **To know about life cycles of different creatures.** To know about the stages humans go through from birth to death. To know that humans reproduce and that human offspring look similar to parents. (See also SRE scheme of work). To know the names of the parts of a plant, including the reproductive names. **To know about reproduction of flowering plants.** **To know about the reproductive process of frogs, birds and insects.** To know how some animals have to adapt in order to survive e.g. finches' beaks.	**Tier 2 words** Characteristics Similarities Differences Classification Offspring Adaptation Environment Survival **Tier 3 words** Microbes Micro organisms Life cycles Amphibian Reptiles Mammals Life processes Reproduction Evolution Adolescence Puberty Causal relationships Keys Data Scatter graphs	**Asking Questions & Planning Enquiries** • Use their science experiences to explore ideas and raise different kinds of questions • Talk about how scientific ideas have developed over time • Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact **Testing, Measuring & Recording** • Use and develop keys and other information records to identify, classify and describe living things and identify patterns that might be found in the natural environment. • Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs **Concluding** • Look for different causal relationships in their data and identify evidence that refutes or supports their ideas • Identify scientific evidence that has been used to support or refute ideas or arguments • Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results	**Living things and their habitats** **Books: Science through books: Life cycles: Jack and the giant's peach** **Cover a STEM career -** Explorify – Who Is? Adam Hart. Explorify – Who Is? David Attenborough Recap learning from Y3/4 that everything in the world can be classified into one of two very broad groups: living and non-living. Model using the earth and 2 lolly sticks: living and non-living. Divide the living group further into plants and animals and get the chn to come up with things for each group. Challenge chn to divide animals further: vertebrates/invertebrates then further into mammals etc. **Focus Skill:** Asking questions Introduce Carl Linnaeus and ask chn to draw diagram of world and classification. They will then complete classification key work and be asked to classify different animals according to common characteristics. They will be given data about different creatures and asked to use scientic language to group them and to justify their reasons for this. They will present their findings in classification keys and tables. **Focus Skill:** Asking questions Chd will write/draw/label lifecycles of mammals, birds, insects, reptiles and amphibians and compare the differences between them. Asking questions **Focus Skill:** **Animals including humans** **Cover a STEM career - Explorify – Who Is? Maria Sibylla Merian** **Explorify – Who Is? Jane Goodall.**

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	6.7 Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents 6.8 Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	**To begin to understand the concept of evolution.**			**Explorify – What's Going On? Life Saving Chemist - Video** Chd will look at ppt called Human Timeline in Y5 Animals including humans packs and will be taught about the stages of life from pre infancy to old age. They will complete a timeline with correct events on and will be able to use scientific vocabulary to describe all the stages. Chd will look at how some mammals reproduce and will be asked to order pictures of how a baby develops and this will be part of their SRE curriculum. Chd will be given data about the gestation periods of different animals, but will be asked to make predictions about which will be longest. They will then be given statements such as "animals who live in the water have shorter gestation periods than animals who live on land". They will use their data and other resources to prove/dispute these statements (lesson 5 Animals including humans Y5 pack). **Evolution and Inheritance** **Books: Science through books: Adaptation: Mummy can I have a penguin?** Chd will be given CGP books to read during guided reading independent time and will produce information about different animals e.g. desert rat, polar bear to show how they are adapted to their different habitats. They will then look at how adaptation can lead to evolution and will carry out an investigation from the Nicky Waller science book about work that Charles Darwin did about Finches' beaks. This will involve them being given information about Darwin's theory about how these birds evolved and being able to see if they agree with the theory.
Art	1) To create sketchbooks to record their observations and use them to review and revisit ideas. 2) To improve their mastery of art and design techniques, including drawing and painting with a range of materials 3) Learn about great artists in history	**Exploring/ Evaluating and developing ideas** To be able to discuss artistic and visual vocabulary when discussing artwork they have seen and made. **Drawing** **To know how to draw and paint the same subject from different perspectives.** **To know how to shade to create light and dark.** **Painting** **To know that using different materials e.g. sand in paint can create different textures.** **Artists** **To know who the artist Hokusai is and to know how to use different techniques to emulate his work.**	**Tier 2 words** Colour Texture Techniques Representations **Tier 3 words** Perspective Sketch Collage Collographs Textiles Foreground Background	**Exploring/ Evaluating and developing ideas** -Develop sketch book - Select and record from observation, experience and imagination and develop ideas confidently, using suitable materials confidently - Question and make thoughtful observations about starting points and select ideas for use in their work, recording and annotating in sketchbooks - Improve quality of sketchbook with mixed media work and annotations - Develop artistic/ visual vocabulary when talking about own work and that of others - Begin to explore possibilities, using and combining different styles and techniques - Think critically about their art and design work **Drawing** - Begin to develop an awareness of perspective, composition, scale and proportion -Use a variety of techniques to interpret the texture of a surface e.g. mark making, different textured paint	**Drawing and painting** Look at different photographs/pictures of tree frogs from different perspectives. Practise sketching these in sketch books adding shading. Look at the scale and proportion of the different parts of the frog. Look at techniques to show different textures of a surface to create different images of frogs, Use glue, paint and pastels to create rainforest animals e.g. Tree Frog textured canvas (crafty classroom) https://thecraftyclassroom.com/tree-frog-oil-pastel/ . Investigate the work of Hokusai, using Kensuke's Kindom artwork as a stating point. Chd will look at colour and texture of paint and experiment to make own representations of some of his art work, using aqua pencils and watercolours. https://artclasscurator.com/art-spotlight-hokusais-thirty-six-views-of-mount-fuji/

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				-Explore the relationships between line and tone, pattern and shape, line and texture - Independently selects materials and techniques to use to create a specific outcome **Painting** -Use colour to express moods and feelings - Explore the texture of paint – very wet and thin or thick and heavy – add PVA to the paint - Develop painting techniques using different types of paint e.g. acrylic, water colour - Demonstrate a secure knowledge about primary and secondary, warm and cold, complementary and contrasting colours - Show an awareness of how paintings are created - consider artists use of colour and application of it	
DT	1) use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups 2) generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 3) select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	Design, Make and Evaluate: • **To know about different materials and know why certain properties make a material fit for a specific purpose.** • **To know what design criteria are and why they play an important role in product development.** • To know and use the acronym CAFEQUES to develop design criteria and know how to use this to develop an innovative design. • **To know how to safely and accurately measure and cut different materials for product components.** • **To know different methods of joining materials including glue, pin nails and cardboard triangles.** • **To know how to identify and tackle problems as they arise and how to make any necessary adjustments.** • **To know that evaluating a final product can lead to a better product being created next time.** Mechanical Systems: • **To know what a cam and follower are and to be to identify these in a mechanism.** • **To know how rotary motion is converted into linear motion in a mechanical system.** • **To know how using a snail and egg shaped cam changes the movement of the mechanism.**	**Tier 2 words** appearance research motion movement quality measure accurately evaluate feedback materials join cut innovative components mechanism finish smooth design brief hexagon round functional aesthetic framework construction **Tier 3 words** off-centre offset cam follower mechanical system rotary linear convert	**Design** * use research of user's individual needs, wants, requirements for design to ensure product is fit for purpose *create own design criteria and specification * come up with innovative design ideas *produce a logical, realistic plan and explain it to others; be willing to refine. *use annotated sketches, cross-sectional planning and exploded diagrams * make design decisions, considering, resources (and cost Y6) * clearly explain how parts of design will work, and how they are fit for purpose *model and refine design ideas by making prototypes and using pattern pieces, with increasing independence **Make** * use tools/equipment with good level of precision * produce suitable lists of tools, eqpt/materials needed * select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics * create, follow, and adapt detailed step-by-step plans * explain how product will appeal to an audience * accurately measure, mark out, cut and shape components * accurately assemble, join and combine components * apply a range of finishing techniques, with inc accuracy * use techniques that involve a number of steps * begin to be resourceful with practical problems **Evaluate** * evaluate quality of design while designing and making * keep checking design is best it can be. * evaluate ideas and finished product against specification, considering purpose and appearance (stating if fit for purpose Y6)	**Technical Knowledge – Mechanisms (cams and followers)** • Chn will be introduced to the concept of cam/follower mechanism through examples, videos and ppt presentation and discussion. :Can you identify the cam? Can you identify the follower? Where is the rotary motion used? Where is the linear motion used? Discuss how, for most of the mechanisms, the rotary motion is converted into linear motion. • Complete the differentiated Cam Mechanisms Activity Sheet where they will be asked to explain cams and followers and how rotary motion is converted into linear motion. • Chn to identify/bring in any toys which use rotary/linear motion and present to class. • Chn to learn that the shape of the cam changes the movement. Teacher will demonstrate how to make a snail-shaped cam mechanism following the differentiated Exploring Cam Movement Activity Sheet. Use the Cam Template Activity Sheet to get the correct sizing for the cams. Discuss and consider the different use of sheet materials. • In groups/pairs, chn will make their own simple cams, exploring the results with different shaped cams and using different materials. **Design** • Chn to design their own moving animal based on one of the rainforest animals we have studied. • 'CAFEQUES' will be used to help chn develop their own design criteria. Explain what the acronym means using the Lesson Presentation. Discuss ideas as a class about how to use the table to create design criteria. • Use Automata Animals Design Activity Sheet and discuss how to complete the different sections. Discuss the importance of the frame and decoration surrounding the mechanism which gives the product its finished quality. Chn will now create and clearly communicate their own designs which will be innovative and consider the design criteria and the information about animal movement, appearance and habitat. • Watch a short video clip of a Prototype Moving Automata Animal and chn use the questions on the Lesson Presentation to help them evaluate the prototype. Chn work with a partner to evaluate their designs using the Peer Evaluation Activity Sheet and their completed design criteria. They then need to discuss ideas about ways to proceed. (This allows peer feedback and encourages children to verbalise and think through their own design before they start to make it.) **Make** *STEP-BY-STEP TEACHER DEMONSTRATIONS WILL BE NECESSARY AS THE CHN TACKLE MANY NEW SKILLS AND PROCESSES.*

	4) select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities 5) evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 6) understand how key events and individuals in design and technology have helped shape the world 7) apply their understanding of how to strengthen, stiffen and reinforce more complex structures 8) understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]		guide dwell snail egg-shaped ellipse corner joints saw hacksaw vice notch mount axle shaft	* test and evaluate final product; explain what would improve it and the effect different resources may have had * evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * evaluate how much products cost to make and how innovative they are * research how sustainable materials are * talk about some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products **Technical Knowledge – Mechanisms** *refine product after testing considering aesthetics, functionality and purpose *grow in confidence about trying new / different ideas *begin to use cams, pulleys or gears to create movement	• Frame: most of the children will be cutting wood to make their frame so teacher will demonstrate how to safely cut square section wood using a junior hacksaw and a bench hook. Chn will be reminded of safety, resources, accuracy. Chn will be shown how to use triangles and PVA glue to join the square section wooden frame together and strengthen it. • Teacher will demonstrate: how to accurately use a saw to cut dowel; how to attach the doweling through the cam hole; how to mount the mechanism into the framework, emphasising the importance of measuring carefully before gluing into place; the need for a guide to keep the follower in place; how to use small pieces of plastic tubing pushed onto the doweling to hold the cam in place; an example of how a handle can be made by attaching a small wheel to one end of the axle/shaft. The wheel should have a hole drilled off-centre with a small piece of doweling pushed into the hole. • Chn will use their design and all the new skills they have learnt to produce their own rainforest cam mechanism animal. They will solve problems as they are encountered, seeking assistance from peers and adults when needed. The quality of the finish will be considered including using sandpaper, colour, materials appropriately. **Evaluate** • Chn will present their finished products to each other/group/class and take feedback. • They will complete an evaluation sheet which prompts them to think about details such as Does the animal move smoothly and as planned? Are colours/materials appropriate? Is it finished neatly and safely? Is it strong/robust? What improvements could be made?