Sonar Curriculum

Y3 Biome In A Box Learning Sequence

Synopsis: Children investigate a range of biomes and use this as a stimulus to write a newspaper report. They could also write a description of a biome.

In **Science**, children learn about nutrition and the roles of a skeleton.
In **Geography**, children investigate different biomes.
In **Art**, children create a collage to represent a biome.
In **D&T**, children use a range of mechanical systems to create a 'biome in a box'.
In **Computing**, children explore outcomes when giving sequenced instructions.

Curriculum areas: English, Science, Geography, Art, D&T and Computing
Length of theme: 6 weeks

English

Write a newspaper report based about their chosen biome.

English Objectives

Comprehension

- Identify themes and conventions – newspapers
- Identify how language, structure and presentation contribute to meaning

Grammar & Punctuation

- Use a wider range of subordinating conjunctions (*before, after, while, when, if, because, although*)
- Express time, place and cause using conjunctions, adverbs and prepositions
- Use fronted adverbials and use commas after fronted adverbials (Y4)
- Punctuate direct speech with inverted commas

Language & Vocabulary

English Learning Sequence

- Share examples of newspapers with children and discuss features (*First News* is appropriate for this age range). What is a newspaper for? Who reads it? Why? Explore the tone of language (formal)
- Explore the range of content in a newspaper and discuss the purpose of the different sections and the elements within them eg news articles, advertisements, features, sport, puzzles
- Focus in on news articles - cut articles into key parts and allow children to rearrange, label and annotate: headline, by-line, introduction, main article, quotes, pictures and captions. What is the function of each part?
- Explain that they are going to become news reporters in reporting about a topic related to their chosen biome
- Role play being a reporter or expert, asking key questions and noting responses (ready for direct quotes)

- Use varied and rich vocabulary including adjective, expanded noun phrases, adverbs, preposition phrases, collective nouns, similes and alliteration
- Vary sentence openers for effect

Text Structure & Features

- Write for a range of purposes (newspaper)
- Locate information using contents, index and glossaries

Plan, Draft, Edit & Evaluate

- Discuss and record ideas
- Draw on examples of writing when planning own work
- Compose and practise sentences orally using an increasingly wide range of vocabulary and sentence structure
- Suggest changes to grammar and vocabulary
- Proofread work for spelling/punctuation errors

Assess others' and own writing, suggesting improvements

In addition to the above, teachers should apply general spelling rules and guidance, as listed in English Appendix 1 and ensure concepts and skills outlined in English Appendix 2 are also addressed.

- Practise each newspaper feature in turn, writing headline, by-line, introduction (using the 5 W's of when, who, what, where and why) and main article. Teacher to model level of formality
- Ensure children are using wider range of conjunctions to write more detailed sentences eg. After he swam off the drop-off, he immediately disappeared
- If appropriate, introduce inverted commas to indicate direct quotes and explore the conventions of speech eg "Temperatures as high as this have never been reported in living memory," reported environmentalist, Miss Sulwe.
- Draft, edit and improve to produce final newspaper report

English

Write a detailed description of a biome setting, eg underwater.

English Objectives

Comprehension

- Begin to discuss words and phrases that capture the reader's interest

Grammar & Punctuation

English Learning Sequence

- Read some descriptions texts to children eg settings from books they are familiar with
- Discuss the language used – how does the writer 'paint' a vivid picture of the setting? Children share words and phrases which have captured their interest and give reasons for that

- Use a wider range of subordinating conjunctions (*before, after, while, when, if, because, although*)
- Express time, place and cause using conjunctions, adverbs and prepositions

Language & Vocabulary

- Use varied and rich vocabulary including adjective, expanded noun phrases, adverbs, preposition phrases, collective nouns, similes and alliteration
- Vary sentence openers for effect
- Use similar writing to identify and understand vocabulary and language
- Create settings

Text Structure & Features

- Recognise themes eg good over evil, magical devices
- Retell stories orally
- Build on KS1 wide range of stories, poetry, plays and myths

Plan, Draft, Edit & Evaluate

- Discuss and record ideas
- Draw on examples of writing when planning own work
- Compose and practise sentences orally using an increasingly wide range of vocabulary and sentence structure
- Suggest changes to grammar and vocabulary
- Proofread work for spelling/punctuation errors
- Assess others' and own writing, suggesting improvements

In addition to the above, teachers should apply general spelling rules and guidance, as listed in English Appendix 1 and ensure concepts and skills outlined in English Appendix 2 are also addressed.

- Play children a video of underwater setting/or other biome and they describe what they see
- Give children prompt cards to consider as they watch it eg expanded noun phrases, verbs, adjectives, adverbs, preposition phrases, figurative language
- Model generating language using video and images of coral reef eg Tiny, silver fish like diamonds darted swiftly between the swaying seaweed. Rainbow-coloured seahorses bobbed like tiny boats across the waves.
- Share writing example of underwater setting and discuss use of language to create a vivid picture in the reader's mind.
- Highlight metaphors – discuss these
- Generate metaphors for underwater features eg a forest of coral etc
- Using main clauses as starting points, children experiment with different sentence openers eg adverbs, preposition phrases, subordinate clauses
- Write a short description of a setting focusing on choice of vocabulary and use of metaphors
- Share writing with a peer and evaluate each other's work saying what they like about it and suggesting how it could be improved

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Science

Learn about nutrition and the various roles of a skeleton/muscles.

Science Objectives

Scientific Knowledge

- 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 eat)
- Identify that humans and some other animals have skeletons and muscles for support, protection and movement

Science Learning Sequence

- Give children black sugar paper and white chalk and challenge them to draw what they think their skeleton looks like
- Give children pictures of bones of human body and see if they can reassemble them to make a skeleton
- Discuss the names of each bone and label a skeleton
- Investigate the role of a skeleton in humans and other animals. Do any animals have unusual/no skeletons?
- Discuss how muscles also help us to move – hands-on experience for children. Can you feel your bicep? etc.
- Link to health and fitness – how can we keep our bodies healthy? Generate ideas
- Discuss nutrition and the importance of a healthy, balanced diet. What is your favourite food/meal? Record this using words and pictures
- Compare what humans eat to other animals looking for similarities and differences

Geography

Locate biomes and describe their physical features.

Geography Objectives

- Begin to explain geographical similarities and differences (N/S America)
- Locate some of the countries of Europe and N/S America using maps and identify some environmental regions, key physical / human features, cities
- Begin to identify position of Tropics of Cancer Capricorn, Arctic/Antarctic
- Begin to identify position of Prime/Greenwich Meridian and time zones
- Begin to describe some key aspects of physical geography

Geography Learning Sequence

- Recap the world's continents and oceans to consolidate
- Recap position of Equator and N/S Hemispheres
- Use world maps, atlases and globes to locate different biomes, eg desert, savanna, coral reef, temperate forest
- Generate range of geographical questions to answer. What is the landscape like? What grows here? What lives here? What is the temperature?
- Investigate their chosen biome in more depth, focussing on physical features and what lives there and why
- Compare biomes in different parts of the world with a particular

(climate zones, biomes & volcanoes) • Confidently use world maps, atlases and globes and begin to use digital mapping	focus on N/S America, looking for similarities and differences • Communicate findings in a range of ways including pictures, photographs, digital mapping and writing

Art

Create a collage of a biome using a range of media.

Art Objectives	Art Learning Sequence
• In collage, consider the effect of chosen materials and technique • Create sketchbooks to record and revisit observations • Use and apply art and design techniques and improve control and use of materials • Use range of artistic vocabulary to discuss and evaluate work • Evaluate work of some artists and analyse creative works	• (In conjunction with D&T 'biome in a box') • Children explore images of biomes, discussing colours, shapes, textures etc • Emulate some of the images using range of pencils, capturing the process in sketchbooks • Use a range of materials to try and replicate parts of the images eg thin strips of green tissue paper for the seaweed • Set out template for scene, considering background and foreground and identifying which materials would be best for each part • Create a mixed media collage of biome and use a range of artistic vocabulary to describe their own and others' work

D&T

Use a range of mechanical systems to create a moving biome scene.

D&T Objectives	D&T Learning Sequence
• Identify range of mechanical systems and how they work (*gears, pulleys, cams, levers and linkages*) • Select from and use a wide range of tools, equipment, materials and components accurately • Evaluate own ideas and designs against given design criteria and consider the views of others to improve their work • Communicate ideas using different strategies • Use research to inform design • Take risks to become innovative and resourceful	• Look at dioramas/pictures of dioramas depicting biome scenes, eg underwater • Explain that children are going to make their own, but it has to have a moving element, eg an animal • Share and discuss design criteria • Children explore/research a range of mechanical systems, trying to decipher how they work and make things move • Design own moving part and communicate ideas in a range of ways eg verbally, drawing

	• Using a range of tools, materials and components, children work to create a moving creature for diorama, evaluating and adapting throughout the process

Computing

Explore outcomes when giving sequenced instructions.

Computing Objectives	Computing Learning Sequence
• Start to use reasoning to understand how algorithms work • Detect errors in algorithms and programs • Begin to solve problems by decomposing them into smaller parts • Start to use sequence and selection in programs • Begin to develop understanding of how to write and debug programs that accomplish specific goals, including controlling or simulating physical systems • Begin to work with various forms of input/output	• Plan, create and debug more complex sequences of instructions to achieve a specific outcome • Using a programmable robot or Scratch (or something similar), explore how to input repeated commands to draw 2D shapes • Investigate what happens when values are manipulated (eg length of side of rectangle) • Use coding to simplify or enhance the production of a 2D shape and record how this was achieved