Blue Abyss

Year Group: 3 and 4

Cycle B

Design and Technology	Science
• Cornelius Drebbel and the invention of the Submarine	• Living things and their habitats • Food chains • States of matter: water cycle.
Climate/Environment	**Computing**
• Impact of climate change on the water cycle and availability of drinking water	• Handling Data: Branching Databases

Geography
• Identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/ Greenwich Meridian and time zones (including day and night)

- Describe and understand key aspects of:
- Physical geography, including: rivers, mountains, and the water cycle

Science

National Curriculum (Knowledge and Skills): Pupils should be taught to:

Year 4
- recognise that living things can be grouped in a variety of ways
- explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
- recognise that environments can change and that this can sometimes pose dangers to living things

construct and interpret a variety of food chains, identifying producers, predators and prey
- identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

Year 3 and 4 Working Scientifically

- ask relevant questions and use different types of scientific enquiries to answer them
- set up simple practical enquiries, comparative and fair tests
- make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- gather, record, classify and present data in a variety of ways to help in answering questions
- identify differences, similarities or changes related to simple scientific ideas and processes
- report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- use straightforward scientific evidence to answer questions or to support their findings
- use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

Investigation Focus:
- Water cycle investigation https://www.science-sparks.com/make-a-mini-water-cycle/

Prior Learning

Forever Firs children working at ARE should already be able to:
- ask simple questions and recognise that they can be answered in different ways
- observe closely, using simple equipment
- perform simple tests
- gather and record data to help in answering questions
- identify and classify
- use their observations and ideas to suggest answers to questions
- explore and compare the difference between things that are living, dead, and things that have never been alive
- identify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other
- identify and name a variety of plants and animals in their habitats, including micro-habitats
- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food

Key Vocabulary

Tier 1		Tier 2		Tier 3	
Rain	River	Habitat	Classify	Evaporation	Water cycle
Snow	Stream	Measurement	Pollution	Condensation	Food chain
Hail	Mountain	Investigate	Group	Transpiration	Predator
Cloud	Water	Compare		Precipitation	Prey
Sea	Ocean	Environment		Vapor	Producer
Sun	Heat			Temperature	Classification key

	Cool			Climate change	

Science Assessment			
Children working below ARE	**Children working towards ARE**	**Children working at ARE**	**Children working above ARE**

Geography

National Curriculum: Pupils should be taught to:
- identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/ Greenwich Meridian and time zones (including day and night)
- describe and understand key aspects of physical geography, including: rivers, mountains, and the water cycle

Curriculum Intentions (Key Knowledge and Skills to be learned):
- Children will create their own world map identifying the Northern and Southern hemispheres, tropics of Cancer and Capricorn, the Arctic and Antarctic circles and the equator
- They will add the locations of the world's oceans and seas to their map
- They will learn how, as part of the water cycle, rain falling on mountains becomes ground water, which trickles into streams and then rivers which then run into seas and oceans. https://www.bbc.co.uk/bitesize/clips/zb39jxs
- They will learn about how dams and reservoirs are used to ensure there is enough drinking water available

Climate/Environment Link:
- Children will also learn about the impact of climate change on the water cycle
  https://www.climaterealityproject.org/sites/climaterealityproject.org/files/WaterCycle.pdf (teacher information)
- They will learn that climate change is reducing the availability of clean drinking water
  https://www.acclimatise.uk.com/2019/10/02/the-impact-of-global-warming-on-water/ (teacher information)

Age Related Subject Skills (Progression Guidance):

Year 3	**Year 4**
Using maps	Using maps
- Follow a route on a map with some accuracy - Locate places using a range of maps including OS & digital - Begin to match boundaries (e.g. find same boundary of a country on different scale maps) - Use 4 figure compasses, and letter/number co-ordinates to identify features on a map	- Follow a route on a large-scale map - Locate places on a range of maps (variety of scales) - Identify features on an aerial photograph, digital or computer map - Begin to use 8 figure compass and four figure grid references to identify features on a map
Map knowledge	Map knowledge
- Locate the UK on a variety of different scale maps - Name & locate the counties and cities of the UK	- Locate Europe on a large-scale map or globe, - Name and locate countries in Europe (including Russia) and their capitals cities
Making maps	Making maps
- Try to make a map of a short route experiences, with features in current order - Create a simple scale drawing - Use standard symbols, and understand the importance of a key	- Recognise and use OS map symbols, including completion of a key and understanding why it is important - Draw a sketch map from a high viewpoint

Prior Learning

Forever Firs children working at ARE should already be able to:

Using maps
- Follow a route on a map
- Use simple compass directions (North, South, East, West)
- Use aerial photographs and plan perspectives to recognise landmarks and basic human and physical features

Map knowledge

- Locate and name on a world map and globe the seven continents and five oceans.
- Locate on a globe and world map the hot and cold areas of the world including the Equator and the North and South Poles

Making maps
- Draw or make a map of real or imaginary places (e.g. add detail to a sketch map from aerial photograph)
- Use and construct basic symbols in a key

Key Vocabulary

Tier 1		Tier 2		Tier 3	
Day Night Snow	Rivers Mountains Cloud	Liquid Sea Lake Ocean	Stream	Latitude Logitude Equator Northern Hemisphere Southern Hemisphere Physical geography Evaporate Vapor Condense Precipitation	Tropic of Cancer Tropic of Capricorn Arctic Circle Antarctic Circle Prime/Greenwich Meridian Time zone Water Cycle Groundwater Reservoir Dam Climate change

Geography Assessment

Children working below ARE	Children working towards ARE	Children working at ARE	Children working above ARE

Design and Technology

National Curriculum:

Pupils should be taught to:
- understand how key events and individuals in design and technology have helped shape the world

Curriculum Intentions (Key Knowledge and Skills to be learned):

- Children will learn about Cornelius Drebbel and the invention of the submarine,
- They will look at the changes and improvements to Drebbel's initial design over time by other inventors/engineers
- They will examine the impact that his invention has had on the world in different contexts including the use of submarines in war, science and conservation.

Age Related Subject Skills (Progression Guidance):

Evaluate
- Investigate - how well products have been designed, how well products have been made, why materials have been chosen, what methods of construction have been used, how well products work, how well products achieve their purposes and how well products meet user needs and wants
- Identify great designers and their work and use research of designers to influence work
- Investigate - who designed and made the products, where products were designed and made, when products were designed and made and whether products can be recycled or reused

Prior Learning

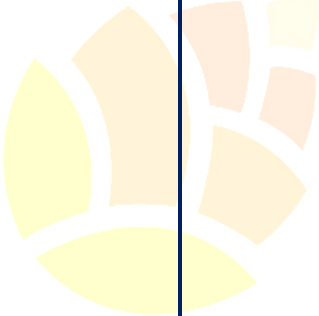**Forever Firs children working at ARE should already be able to:**
- Investigate - what products are, who they are for, how they are made and what materials are used

Key Vocabulary

Tier 1		Tier 2		Tier 3	
Water Sea		Inventor Engineer	Design Evaluate	Submarine	

		Conservation War Science Impact Weapons Ocean	Purpose Intention User Cause Effect		

Design and Technology Assessment
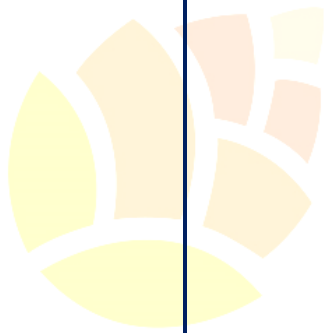
Children working below ARE	Children working towards ARE	Children working at ARE	Children working above ARE

Computing

National Curriculum:

- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

Curriculum Intentions (Key Knowledge to be learned):

- Handling data: Children will learn how to use a branching database to classify organisms (e.g. https://www.tes.com/teaching-resource/classifying-organisms-with-a-branching-database-11055364)
- https://www.youtube.com/watch?v=_HBJtrmBLgw
- Children will be able to recall other graphs they have used to sort/represent information (e.g. maths bar charts)
- They will understand the difference between open and closed questions
- They will be able to come up with a list of closed questions
- Children understand that a branching database is used to sort items
- They can plan their branch database to ensure questions go down to a singular image (answer)
- Children will be able to apply their knowledge of science (classifying organisms)
- Children will be able to say similarities and differences between organisms

Age Related Subject Skills (DDAT Progression Guidance):

- Working with data: Pupils learn to search, sort and graph information

Age Related Subject Skills (Firs Progression Guidance):

Year 3	Year 4
• Use a branch database to answer questions • Make a branch database with at least 4 pictures.	• create and use a branching database to organise, reorganise and analyse information

Prior Learning
Forever Firs children working at ARE should already be able to:

- create and use a pictogram

Key Vocabulary					
Tier 1		**Tier 2**		**Tier 3**	
Sort Yes No	Question Answer Same Different	Classify Criteria Characteristics Similar Identify	Levels Information True False Organise	Branching database analyse	

Computing Assessment			
Children working below ARE	Children working towards ARE	Children working at ARE	Children working above ARE