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ENDPOINTS **Substantive knowledge children will know:** **Disciplinary knowledge children will know how to / be able to:**	**Geography:** **Locational knowledge** - identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle **Human and physical geography** describe and understand key aspects of: - physical geography, including: climate zones (compare Arctic to London), biomes (polar, temperate, Mediterranean, desert and tropical) - seasons - climate change (drilling in the polar regions/Arctic ice reduction) - renewable and non-renewable energy **Geographical skills and fieldwork** - use maps, atlases, globes and digital/computer mapping to locate countries (countries in the polar regions) and describe features studied - use the eight points of a compass **Science:** Working scientifically: - trial and error buoyancy testing (children to make control boats) - animal adaptations (to polar regions) and habitats - food chains (polar animals) - forces friction **Art:** - to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials (clay polar animal sculpture, northern lights pastels and animal collage) **DT:** - design, make and evaluate a smooth-running sled - design, sew and evaluate a polar felt animal **Computing:** - databases (polar animals and class database)
Links to Prior Knowledge:	Geography –continents, countries, capitals, oceans / Use of atlases, maps, aerial photos compass directions I Science – animals, habitats and adaptations
Links for Relevance and Currency:	Climate change: melting ice-caps and subsequent destruction of habitats I Need for renewable energy and exploitation of natural resources I Ethnicity of hunting, preservation of traditional ways of life
Immersion Event / Activity:	Recreation of 'Scott of the Antarctic' camp / 'Polar classroom
Celebration of Learning:	Science – Video reports I Design and Tech – sewn Christmas decorations I Art – Animal collages and clay models I DT/TASC Inuit inspired shelter
English Links:	Chronological report – Scott's diary I Non-chronological reports – Inuit culture I Newsround style videos I Oral fluency during spoken reports Matthew Henson (black explorer) / Ada Blackjack (Arctic Survivor)
Maths Links:	Direction - Compass bearings I Statistics – climate and biome data, human/animal population changes I Measurement - length

Subject	Key Knowledge or Skill	Substantive and Disciplinary knowledge and Skills embedded through:	Outcomes	Links to Curriculum Drivers

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		(Taken from Chris Quigley Milestone or scheme of work)			Values	Outdoor Learning	P4C	Global Rights	TASC
Geography	1	Communicate geographically:	**TA/Teacher draws large globe on playground in chalk/cones whilst introduce project to make video reports to children, explain we need basic understanding (Tier 3 Vocab).** Inside, recap continents. Outside, children show where these features are, and TA/Teacher draws and labels them: • Equator, Northern Hemisphere/ Hemisphere, • Arctic and Antarctic Circles • Tropics of Cancer and Capricorn – use **Basketball** to demonstrate sun movement • Longitude– degrees N and S: where is UK, where is Arctic circle, where are other countries. • Latitude - Prime/Greenwich Meridian and time zones (including day and night) – use **Basketball** to show Plenary – Intro to the Poles.	Clear map showing core information using tier 3 vocabulary. Use of atlases to add info: • What shape is the world • 8 countries in the arctic circle • Continents in the arctic circle • Why it is night and day in different places.		✓			✓
Geography / English	2	Communicate geographically: Understanding of Geographical vocabulary (Tier3)	**Shorter lesson -** Review 3 tiers of vocabulary, identify examples of each on the Knowledge organisers. Intro to Learning at home research project: children given one of 6 topics to research.	Children use dictionaries, **iPads** and topic books to write definitions of Tier 3 vocabulary.					✓
Maths	3	Statistics	**Teach as Maths lesson on morning of subsequent climate lessons.** Discuss what a **climate** is, consider for polar regions. Explain and check understanding of climate graphs (rainfall and temperatures). In pairs compare London climate data to Arctic. Consider wettest, driest, hottest, coldest, which months are 'freezing'. Extra: compare Arctic weather stations.	Understanding of climate Compare climate data and graphs Accurate responses to world climate data.					
Geography	4-7	Investigate patterns / Investigate places Understanding of world climate zones and effect on human settlements and activities.	Consider why people go on holiday and whether climate make a difference. Explain the main climate zones: polar, temperate, Mediterranean, desert and tropical (video)	Map showing main climate zones. Countries in each zone.				✓	✓
			On groups of 3 or 4 use atlas to find 5 places in the world: annotate a map. Match climate and tourist information present on A3 Sheets. Describe which location they would like to visit and why.	Matched countries and climates etc.					

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			Extra: Match objects, purpose and materials (British Museum Exhibits) Consider which climate zone they are from. What objects would be expected from other climate zones? Why?	Understanding of climates and impact on people e.g. tourist activity / skills / artefacts					
			Children match flora to biomes. Can they determine what a biome is? Check understanding of biomes. Label climate zones and compare biomes and climate zones. Complete a table of animals, biomes, climate zones. Observe patterns, e.g. tropical = rainforest, polar = Tundra	Demonstrate an understanding of how climate zones relate to biomes and therefore fauna. Via map and table.					
			Recap UK climate and biome. Discuss UK seasons. Use to explain difference between weather and climate. How seasons are created. Use images, video and globe with ball to represent the sun. TASC Groups to demonstrate seasons in either: polar, temperate or polar zones. Present and check understanding of different seasons.	Demonstrate an understanding of reasons for climate zones and biomes. Comprehension cloze exercise TASC activity to explain.					
Science	8	Work Scientifically	Using **cm² paper** children make 'control boat' 6 x 7 squares. Show how floats in **trays.** Add **coins** as weights, how many does it hold? Consider how to arrange. Children make other designs. What is the biggest boats? Most weight? If time, use **other materials: foil, card, plastic sheets etc.**	Understanding of trial and error scientific process. Understanding of buoyancy. A wet floor					
Art	9 and 10	Master techniques: clay Biology Understand animals and humans Investigate living things	Model a polar animal considering its adaptations. Recap animals that live in the Arctic and the Antarctic. Discuss the different colours and skin types e.g. fur, feathers, seal skin. Discuss why they have these adaptations. Remind how to use clay, using water to create smooth joins. Remind chn that small parts will fall off, so ensure they are carefully joined. Show how to add details e.g. eyes, nose. Show basic colour mixing methods, to show shadows etc. Show method of making L-shape frame. Children, paint then fold background and secure. Show video: Ask how polar bear is adapted to is environment.	Well-constructed and decorated clay animal. Background habitat showing adaptations. Demonstrate an understanding of how animals adapt to environments.					

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			Take photos of art, children, stick in books, show how animal is adapted to its environment.						
P4C	11	Hold conversations and debates	Ethnicity of hunting Show images of hunting for food and hunting for sport. Initial reactions, then P4C debate. Web link if more emotional response is required. If needed suggest a P4C question: are human rights more important than animals? This lesson may work better after the work on Inuit to understand the other point of view. Alternative for 2022 – Stimuli of JW Turner images of whaling ships and slave ships.	Children interact and move thinking forward. Understanding of 'need' to hunt for some cultures.			✓	✓	
Art	12	Master techniques: collage	Discuss migration: people and animals. Check understanding of migration and hibernation, with examples. Explain collage task. Children describe their animal surviving extreme conditions. encourage creative responses and effective vocab.	Collaged animal showing adaptations. Understanding of adaptations and need for migration and hibernation. Effective description.					
Science	13	Food chains	Introduce key vocabulary: food chain, producer, predator, prey, consumer, herbivore, omnivore, carnivore Show interactive picture of animals that live in the Arctic Children use I pads to click on picture and create own food chain **Book i-pads – if using ipads save the link on google classroom so that they can access it.** **Laptops – link saved in pupil share.** **Plenary**: Bitesize game on i-pads /**laptops**	Understanding of key vocabulary: producer, predator, prey, consumer etc. Model food chain/web with correct arrows. Application to specific polar ecosystem.		✓			✓
Art	14	Master techniques: pastels	Ask where does light come from: sun, electric sources, fire, and bioluminescence. Show Arctic winter, how do Inuit cope? What fuel do they use? Info from video. Show northern lights, can children explain the light? Give info, via video https://youtu.be/eJV_wlCm6ms Use of pastels to create an effective scene. Use black paper to make silhouette foreground.	Consideration of light sources, need for fuel for fire. Northern lights image with understanding of use of pastels.					
Design and Technology	15-16	Take inspiration from design throughout history	**Lesson 1:** Design and test materials **Lesson 2:** Make and Evaluate. Friction focus – what force slows things down between two surfaces?	Understand friction as a slowing force.					✓

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		Design, make, evaluate and improve Master practical skills: textiles	Study of designs through history e.g. Inuit and modern day Test out materials which reduce friction. Design for a purpose and efficiency Material choices, Measurement, Cutting, Joining, Construction	Design, build and evaluate a smooth running sled.					
Geography P4C	17	Communicate geographically	**Best taught after knowledge of Inuit is developed.** Discuss what is a natural resource, which are non-renewable resource. Check understanding by sorting pictures. What are there the challenges with using renewable sources? Videos to support thinking Consider resources in the Arctic and Antarctic. Discuss challenges with extracting resources from the Arctic and Antarctic Gather of strengths and limitations of using resources from the Arctic. Groups of 4 debate for and against. Extra for 2022: Antarctic Day and Global Warming.	Discussion of advantages and disadvantages of extracting resources from the Arctic and Antarctic Understanding of renewable and non-renewable natural resources How human settlements are linked to natural resources.	✓		✓	✓	
Geography / Science	18-20	Investigate living things: Recognise that environments can change and that this can sometimes pose dangers to specific habitats.	Why are people concerned about climate change? Going on strike? Science behind it: Caused by fossil fuels, via video: https://vimeo.com/140200000 How do humans affect climate change? *fossil fuels (carbon), deforestation, damage to oceans, pollution of biomes* Impact on Biomes, explore via BiomeViewer app on **iPads** Summarise changes to biomes • *Weather* • *Extreme events* • *Sea level rises* • *Pollution (seas become acidic)* • *Migration* • *Extinction* Extra: look at NASA big questions Try to allay fears from last lesson. Scientists are working on the issue, e.g. COP26, Use video, children make more notes in Jotters, https://www.youtube.com/watch?v=hgUKH3HOOlI So: • What can we do? • What should we ask governments to do? *Renewable energy, less pollution, reduce plastics, better recycling* Assign child a role to role-play Children into 8 groups to discuss a response: • Climate scientist • Police Officer • Farmer	Summarise how biomes are affected by climate change Understand different human motivations Recognise we can make a difference	✓		✓	✓	✓

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			• Politian • Asthma suffer • Petrol seller • Protester • Lorry Driver Show Arctic sea ice reduction. Ask how children feel. Explain experiment, model of ic-caps melting, measure impact on: sea animals, land animals, humans and the world climate						
Computing		Computing: To communicate Science: Understand animals and humans / Understand the Earth's movement in space Geography: Communicate geographically	**See English Planning: Record using iPads, edit using MovieMaker on Laptops** Based on learning at home, children work in groups to produce a video report on a Geographical or Scientific topic. • Geographical locations: continents, poles, hemispheres, tropics, • Climate Zones and Biomes • The Poles: Continents, Countries, Cities, natural physical features, Changes over time • Global warming • Polar Animals and Plants • Food chains • Polar Resources	A video report that communicates key Geographical or Scientific information for the topic.	✓	✓		✓	✓

Computing	23-24	To collect	Model how to use a database to find out information.
			• Select cards for information
			• Sort data-cards by
			  ○ Tables
			  ○ Sort / Group / Arrange
			  ○ Statistics and reports
			  ○ Charts
			• Use Statistics and Sorting to find answers to questions
			• Discuss what a database is and how it is useful
			
			(2 subsequent lessons available, to design, populate and analyse a class database.)
				Children use polar animal database to answer questions and understand how databases work and how they are useful.
				
				(Extend to make Class Database)					

RSHE	25	**Relationships** Fa 3) How should we treat people who are different?	Look at key vocabulary – gender, sexism, stereotype. Discuss how boys and girls are the same/different. Look at images of girls' and boys' toys. Can we define them? Should we? Discuss how girls and boys can play with whichever toys they wish and we are being sexist if we say otherwise. Show how adverts are often aimed at boys or girls.	A3 Venn diagram of male, female, all genders. Give chn a selection of words on 4 topics – characteristics, jobs, domestic roles and childcare. They chose a topic and sort the labels in the venn diagram.					
RSHE **P4C**	26	**Relationships** Fa 3) How should we treat people who are different?	How many jobs can you think of that are just for men? And just for women? Are men and women the same? - What might stop young women from choosing these	Give out 9 philosophical questions (no.10 is free choice) and chn discuss images they've seen and questions. In pairs chn choose					

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			jobs? - Is there such a thing as "man's" or "woman's" job? Show images of men doing 'women's jobs' and women doing 'men's jobs' and statistics.	which questions they would like to discuss or create a new one. P4C using most popular question.					
RSHE	27	**Community** C 2) Where do you feel like you belong?	Fill in sheet with person in centre and 4 boxes branching out. Choose 4 communities to write about e.g. school, church, family, friends. Discuss how people in the community help us.	Continue filling in sheet with ways in which people help us.				✓	
RSHE	28	**Community** C 2) Where do you feel like you belong?	Discussion questions: In what ways were they just the same as all the other penguins? - In what way were Roy and Silo a bit different to the other penguins? - What was Roy and Silo's big problem? - What changed (for the better)? - Have Roy and Silo been good or bad?- Where did the egg come from? [another penguin who couldn't look after it as well as Roy and Silo could] - What do we call it when a different adult looks after a child instead of their original parents? [adoption or fostering] - What do we call two people of the same sex who are in love? (two men or two women) [they are called gay people or lesbian if they are both women] - How should we treat people who have different families than us [the same as everyone else - with respect and kindness]	What makes a good penguin parent? - Children label a penguin silhouette with all the traits of a good penguin parent [love, kindness, sitting on the egg, keeping the chick warm, helping it to swim, feeding it, protecting it from danger]				✓	
RSE / Art	29	**Relationships - separation** Fa 1) Do families always stay the same (1)	Share images of different families. Discuss separation, sharing the story 'when my parents forgot how to be friends'.	Children draw a picture to represent how they felt after a change in their life.				✓	
RSE	30	**Relationships - grief** Fa 1) Do families always stay the same (1)	Share the story Badger's parting gift, discuss grief.	Children to draw a picture of 'gifts' they have received.					
RSE/RE	31	**Relationships** Fa 2) Are all families like mine?	RE link to Islam/Hindusim/Christianity					✓	
RE		**Christianity**	Has Christmas lost its true meaning? Do sacred texts have to be 'true' to help people understand their religion? Is religion the most important influence and inspiration in everyone's life? (Believing/Behaving)	We are learning to find out what the true meaning of Christmas is to Christians and compare this with what Christmas means to us.	✓		✓		
DT	32-33	Understand the need for a seam allowance. Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles. Cut materials accurately and safely by selecting appropriate tools.	To design, sew and evaluate a Polar animal (key skills): • Blanket stitch • Cut felt and other materials • Seam allowance • Decorate the polar animal	Children design and sew a polar animal of their choice for a specific user.					✓

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		Select appropriate joining techniques. Design with purpose by identifying opportunities to design. Make products by working efficiently (such as by carefully selecting materials).							
Music **Violin**	33-37	Play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing accuracy, fluency, control and expression Listen with attention to detail and recall sounds with increasing aural memory Use and understand staff and other musical notations. Some Inuit music:		Children to perform a violin recital which will be recorded and sent to parents.					
Outdoor Learning	38-39	Outdoor Learning: Shelter Skills: build a ridge line shelter, build an A frame, build a waterproof lean-to, build a central pole tip, build a den, select an appropriate site for a shelter Session 1: Discuss Scott's expedition – snow storm, insulation. Session 2: Refer back to Scott's shelters, Ben Fogle 100 year celebration race with Norwegians, training (marathons/slept in freezer).		Demonstrate basic tripod with large sticks – how to tie knot/lash and add tarp. Children to build own shelter in groups. Children work as a team to carry resources (4 poles, tarp, string) on their sledge (tyre with blue rope) and then build 2 tripods with joining pole for main shelter.		✓			