



Thursby Primary School

Whole School Overview – Science



Below is an overview of the learning focus for each half term in each class. Class teachers may choose to adapt the learning focus to suit their class but must ensure full coverage.						
2025-26 Cycle A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Class 1 Nursery and Reception	Animal Adventures		I am a scientist		Our Beautiful Planet	
Key Vocabulary	Alive compare desert farm group grow home minibeast move non-living ocean polar sort woodland zoo		Dark daytime float freeze light loud melt night time pull push quiet sink volume		Care Earth flower grow human-made leaf natural plant roots seed stem	
	Changing Seasons – taught across the year - Autumn seasons Spring Summer weather Winter					
Class 2 Year 1 and 2	Introduction to plants Venturing outside, children identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. They use magnifying glasses to observe and name plant parts and draw and label diagrams of flowers. Children closely	Seasonal Changes Reflecting on their own experiences, children learn about the four seasons and the weather associated with each. Pupils explore how seasonal changes affect trees, daylight hours and our choices about outfits. They plan and carry out their own weather	Habitats Considering the life processes that all living things have in common, pupils classify objects into alive, was once alive or has never been alive. Pupils explore global habitats, naming plants and animals that can be found there. They learn how a range of different living things depend on each other	Life cycles and health Studying the life cycles of various animals, children learn what animals need to survive and how they change over time. Pupils collect data that allows them to observe changes in their peers, while also developing their ability to take	Plants: plant growth Carrying out comparative tests, pupils identify the conditions required for seed germination and compare these to the survival needs of plants in later growth phases. Pupils use rulers to measure stem growth and record data in a table. They use their results	Consolidation unit: Ocean Protectors Consolidating knowledge of life cycles, habitats and food chains, children explore the ocean and rock pools. They investigate what happens to litter when it is left in water to better understand the



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	<p>observe leaves and sort them into groups based on their appearance. They use non-standard units to measure leaf length and record their observations in a table. Pupils investigate if beans need water for growth and identify edible plant parts.</p>	<p>reports, considering the knowledge required for this job.</p>	<p>for food or shelter. Pupils explore this further by creating food chains to show the sequence that living things eat each other for energy to grow and stay healthy</p>	<p>measurements and record data. They consider how scientific knowledge helps people to make healthy choices.</p>	<p>to conclude that plants need water, light and a suitable temperature to grow and stay healthy. Children identify the stages in a plant's life cycle and discover how humans impact plants in the environment.</p>	<p>choices we make about materials available. Pupils role-play as marine biologists to collect data about population sizes to plot as pictograms and to better understand how we can protect the oceans.</p>
Key Vocabulary	<ul style="list-style-type: none"> • bulb • deciduous • diagram • evergreen • flower • fruit • garden plants • group • growth • leaf • measure • observe • roots • seed • stem • trunk • wild plants 	<p>deciduous tree evergreen tree season weather</p>	<ul style="list-style-type: none"> • alive • carnivore (Y1) • dead • depend • diet (Y1) • energy • food chain • growth (Y1) • habitat • herbivore (Y1) • life processes • mammal (Y1) • omnivore (Y1) • predator • prey • shelter • sort (Y1) 	<p>basic needs egg health hygiene life cycle live young pupa spawn survive teenager toddler tadpole</p>	<p>bulb (Y1) diagram energy flower (Y1) germinate growth (Y1) leaf (Y1) life cycle measure nutrient observe seed (Y1) shoot stem (Y1)</p>	<ul style="list-style-type: none"> • compare • depend • difference • egg • food chain • habitat • invention • life cycle • live young • observe • predict • results • scientist • season • similarity • table • test



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<p>Class 3 Year 3 and 4</p>	<h3>Light and Shadows</h3> <p>Identifying examples of light sources, children learn that light is needed to see and how its absence causes darkness. Children investigate reflection and shadow formation, including how different factors affect shadows. They explore how shadows can be used to entertain in the arts and create shadow puppets to recount how different people work or experiment with light.</p>	<h3>Movement and Nutrition</h3> <p>Studying the human skeleton, children identify key bones and compare them to other animals explaining the role within the body. Pupils explore how changes in muscles result in movement and the implications these discoveries have in the scientific development of prosthetic limbs. They study how energy is used by the body, what constitutes a balanced diet in humans and how research contributes to nutritionist expertise.</p>	<h3>Rocks and Soils</h3> <p>Studying rocks and their properties, children learn how to classify rocks and identify how they were formed. They look at the work of palaeontologists to learn about fossil formation and use models to explore how fossils tell us about the past. Pupils investigate the physical properties of rocks and link these to their particular uses. Pupils also explore soil formation, separate soil using a sedimentation jar and test soil drainage.</p>	<h3>Digestion and Food</h3> <p>Using models, children describe the function of key organs in the digestive system. Pupils identify the types of human teeth to create their own model and investigate factors that impact our dental health. They compare human teeth to other animals' and consider this in the light of prior knowledge about predators, prey and food chains. Children take on the role of a naturalist investigating animal faeces for clues about diet, digestion and dentition.</p>	<h3>Electricity and Circuits</h3> <p>Exploring appliances that use electricity in their setting, children learn how to work with electricity safely and build circuits. Pupils investigate electrical conductors and insulators and explore the relationship between the number of bulbs and bulb brightness. Real scenarios and historical discoveries inform children about scientific progression and home safety.</p>	<h3>Consolidation Unit:</h3> <h3>How does food effect muscle fatigue?</h3> <p>Using practical investigations, pupils develop their working scientifically skills by exploring how food influences muscle fatigue. Revisiting learning on digestion, nutrition and energy, they plan and carry out a comparative test, measuring muscle endurance before and after eating. Gathering and recording data carefully, pupils analyse their findings and evaluate the reliability of their test. They extend their understanding by investigating whether food can provide chemical</p>
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						energy to power an electrical circuit, before presenting their results clearly to others.
Key Vocabulary	<ul style="list-style-type: none"> • cast a shadow • conclusion • control variable • dangerous • light source • luminous • non-luminous • opaque • protect • prove • reflect • reflection • reflective (shiny) • relationship • shadow • shadow puppet • translucent • transparent • variable 	<ul style="list-style-type: none"> • balanced diet • bone • carbohydrate • conclude • diet • endoskeleton • energy • exoskeleton • fat • fibre • invertebrate • joint • measure • mineral • movement • muscle • nutrient • pelvis • protection • protein • ribs 	<ul style="list-style-type: none"> • bar chart • conclusion • crystal • diagram (Y1) • fossil • grain • group (Y1) • hard • hardness • observe (Y1) • predict (Y2) • record • research (Y2) • rock • sediment • sedimentary rock • sedimentation • soft • soil 	<ul style="list-style-type: none"> • canine • carnivore (Y1) • conclusion (Y3) • control variable • diagram (Y1) • digest • digestive system • ethics • faeces • food chain (Y2) • fair test • group (Y1) • herbivore (Y1) • incisor • large intestine • molar • mouth • nutrient (Y3) • oesophagus 	<ul style="list-style-type: none"> • appliance • battery/cell • bulb • buzzer • circuit • conclusion • electrical conductor • electrical insulator • electricity • mains • method • motor • pattern (KS1) • power source • predict (KS1) • property • results table • switch • wire • variable 	<ul style="list-style-type: none"> • bar chart • battery • bulb • circuit • conclusion • control variable • fair • joint • light source • opaque • pattern (KS1) • predict (KS1) • shadow • trustworthy • variable



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				<ul style="list-style-type: none"> omnivore (Y1) pattern (Y1) 		
<p style="text-align: center; margin: 0;">Class 4 Year 5 and 6</p>	<p>Materials: Mixtures and Separation Pupils explore different types of mixtures and the different methods that can be used to separate them. They dissolve a range of substances, identify different solutions and investigate how temperature affects the time taken to dissolve. They design and create a water filter, sieve soil and evaporate solutions.</p>	<p>Materials: Properties and Changes Broadening their experience of the properties of materials, children investigate hardness, transparency and conductivity and consider how these properties influence the uses of materials. They explore reversible changes, including dissolving and changes of state. Children compare these to irreversible changes, including rusting, burning and mixing vinegar and bicarbonate of soda.</p>	<p>Forces and Space: Earth and Space Exploring some of the key celestial bodies in our Solar System, children learn their names and compare their movements. Pupils discover the relationship between the Earth’s rotation and daylight, making models to represent their knowledge. They make their own sundials and consider how and why humans’ ideas about the universe have changed over time.</p>	<p>Animals including Humans - Circulation and Health. Studying the human circulatory system, children learn about the role of the heart, blood and blood vessels and use models to demonstrate their function. They explore how lifestyle choices affect our health and use secondary sources to help them play the role of healthcare professionals advising patients. Pupils devise their own investigation to look at the relationship</p>	<p>Energy: Light and Reflection Proving that light travels in a straight line, children use this information to explain observations of reflection and shadows. They explore how our eyes allow us to see and how mirrors can be used in a variety of ways. Pupils investigate factors affecting the size of shadows and the laws of reflection. Children apply what they have learned about light by exploring real-life uses of mirrors.</p>	<p>Consolidation of unit: How reflective are space blankets? Exploring the reflectiveness of space blankets through experiments, the children analyse data, draw conclusions and apply their understanding of reflection to make predictions, plan and carry out an enquiry. They consider how inventions can be used in new contexts, such as space technologies being used for marathon runners. Extending the enquiry, children explore further</p>



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				between exercise and heart rate, applying their knowledge of variables and then analysing secondary data to understand fitness better.		properties of space blankets, like reflection of light, transparency, conductivity and hardness. Developing persuasive speech, the class share their findings like a scientist by advertising the uses and properties of space blankets.
Key Vocabulary	control variable (LKS2) dissolve filtering insoluble mixture sieving soluble solution stopwatch (LKS2) variable (LKS2)	<ul style="list-style-type: none"> • burning • conductor • control variable (LKS2) • electrical conductivity • hazard • insulator • irreversible change • method (LKS2) • reversible change 	<ul style="list-style-type: none"> • celestial bodies • data • day/daytime • degrees Celsius (LKS2) • discovery • Earth • evidence • gravity • Jupiter • line graph • line of best fit • Mars • Mercury 	<ul style="list-style-type: none"> • anomaly • blood • bloodstream • blood vessels • carbon dioxide • circulatory system • control variable (LKS2) • data • drug • evaluate • evidence 	<ul style="list-style-type: none"> • anomaly • conclusion (LKS2) • control variable (LKS2) • evaluate • evidence • fair test • light ray • line graph • line of best fit • mean average • pupil 	<ul style="list-style-type: none"> • blood • blood vessels • celestial bodies • circulatory system • conclusion (LKS2) • degrees Celsius (LKS2) • electrical conductivity • evaluate • evaporating (LKS2)



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		<ul style="list-style-type: none"> • rust • rusting • safety • states of matter • thermal conductivity • transparency • trustworthy (LKS2) • variable (LKS2) 	<ul style="list-style-type: none"> • model • moon • Neptune • night/night time • orbit • phase • planet • Pluto 	<ul style="list-style-type: none"> • fair test • heart • heart rate • line graph • mean average • model • oxygen • pulse • rate (LKS2) • relationship 	<ul style="list-style-type: none"> • ray diagram • reflective • relationship • reliable • scale • testable • units • variable (LKS2) 	<ul style="list-style-type: none"> • evidence • fair test • filtering • hardness (LKS2) • health (KS1) • heart • heart rate • insulator (LKS2) • irreversible • mixture • muscle (LKS2) • predict (KS1)
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Below is an overview of the learning focus for each half term in each class. Class teachers may choose to adapt the learning focus to suit their class but must ensure full coverage.						
2026-27 Cycle B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Class 1 Nursery and Reception	<h3 style="margin: 0;">Animal Adventures</h3> <p>Exploring habitats where animals big and small live—from spiders to sloths and farms to forests—pupils use their observations to sort animals based on their similarities and differences. They observe and compare the homes and behaviours of various animals, understanding how different environments meet their needs. Through outdoor activities,</p>		<h3 style="margin: 0;">I am a scientist</h3> <p>Exploring processes and changes in the natural world, children build important foundations for working scientifically. They are introduced to the first step in scientific enquiry - asking questions. Through hands-on activities, pupils discover that objects move when pushed or pulled and some float while others sink. They guess what might happen to</p>		<h3 style="margin: 0;">Our Beautiful Planet</h3> <p>Exploring the outdoor environment, pupils use their senses to identify and describe natural objects, including flowering plants. Through role-play, they learn about plant parts by creating pretend medicine for unwell toys. By planting seeds, pupils discover that water and sunlight are essential for growth. They also learn the importance of caring for the planet,</p>	



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	songs and creative tasks, pupils develop a deeper connection to the natural world.	ice in different conditions and investigate ways to melt chocolate.	considering practical actions they can take to protect it.			
Key Vocabulary	Alive compare desert farm group grow home minibeast move non-living ocean polar sort woodland zoo	Dark daytime float freeze light loud melt night time pull push quiet sink volume	Care Earth flower grow human-made leaf natural plant roots seed stem			
	<p>Changing Seasons – taught across the year - Autumn seasons Spring Summer weather Winter</p> <p>Observing how the natural world transforms through the year, children discover how these changes affect plants, animals and daily life. In autumn, they create a class weather chart and collect the treasures that the season brings. They learn how some animals prepare for winter. In spring, they explore new life and the life cycle of a butterfly through dance. During summer, they experiment with sand and water to find the perfect mixture for building sandcastles. This unit has six standalone lessons to be taught across the year, at the end of each half term. The timing is flexible but they should be planned to coincide with typical seasonal changes.</p>					
Class 2 Year 1 and 2	<p>Animals, inc humans – Sensitive Bodies</p> <p>Familiarising themselves with the basic parts of the human body, children investigate their senses through stimulating experiences that highlight how we interact with the world around us. They work</p>	<p>Everyday Materials</p> <p>Identifying the difference between objects and materials, children explore their surroundings to find examples of each. They work scientifically by planning tests, making observations and recording data. Pupils use results to</p>	<p>Comparing animals</p> <p>Studying both local and global animals, children recognise common characteristics and physical features. They use this information to make comparisons and classify animals. Pupils consider the most effective way to</p>	<p>Animals, inc humans - Uses of everyday material</p> <p>Building on their knowledge of everyday materials and their properties, pupils recognise that materials are suited to specific purposes</p>	<p>Living Things – Micro habitats</p> <p>Developing their understanding of scientific enquiry, pupils learn that scientists use a range of skills to answer questions. They discover that microhabitats provide what minibeast need to survive and carry out a survey to find</p>	<p>Consolidation Unit- Fairy tale science</p> <p>Using familiar fairytales, pupils develop their working scientifically skills through practical investigations. Prompted by 'The Tortoise and the Hare', children compare</p>



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	<p>scientifically, using their senses to make observations, spot patterns and use data to answer questions. They develop an understanding of how science can support those who have lost sensory function and consider how firefighters use their senses at work.</p>	<p>answer questions and sort and group materials based on their properties.</p>	<p>collect data about class pets and record their findings in a block chart. They develop their understanding of classification by comparing the dietary habits of different animals and role play as Jane Goodall carrying out research into chimpanzees in the wild.</p>	<p>and explore how actions such as stretching and bending affect the shape of solid objects. They compare the suitability of materials; gather and record data in tables and block graphs and use their results to answer questions. Children also learn about the harmful effects of plastic and explore eco-friendly alternatives.</p>	<p>out where different minibeasts live in the school grounds. They practise asking scientific questions and follow a method to investigate which conditions woodlice prefer. Pupils explore the job role of a botanist by identifying flowering plants.</p>	<p>animal features and speed. Investigating materials with 'The Gingerbread Man', they test properties such as waterproofing and strength. Exploring 'Goldilocks', pupils investigate temperature differences and sensitivity of touch. With 'The Princess and the Pea', they record results and present findings using block graphs.</p>
Key Vocabulary	<p>compare group hearing pattern sense(s) sight smell taste touch</p>	<p>absorbent fabric glass group material metal object plastic rock tough waterproof wood</p>	<ul style="list-style-type: none"> • amphibian • bird • carnivore • compare • diet • difference • fish • group • herbivore • mammal • observe • omnivore • reptile • scientist 	<p>elastic fabric (Y1) flexible glass (Y1) material (Y1) metal (Y1) object (Y1) plastic (Y1) property rock (Y1) suitable wood (Y1)</p>	<p>food chain microhabitat minibeast research results test</p>	<ul style="list-style-type: none"> • absorbent • amphibian • bird • compare • difference • fish • group • hearing • mammal • material • measure • object • observe • predict



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			<ul style="list-style-type: none"> • similarity 			<ul style="list-style-type: none"> • property • research • reptile • sight • similarity • smell • suitable
Class 3 Year 3 and 4	<p style="text-align: center;">Forces and magnets</p> <p>Investigating the movement of vehicles on different surfaces, children learn about the impact of friction and compare uses and drawbacks. They broaden their experience in writing scientific methods and recording data as they investigate contact and non-contact forces. Pupils explore the properties of different magnets and use this to understand their uses.</p>	<p style="text-align: center;">Materials – States of matter</p> <p>Investigating the properties of solids, liquids and gases, children learn about the different states of matter. They explore changes of state using relatable examples and use this to explain changes to water through the water cycle. Pupils investigate the relationship between temperature and rate of evaporation while broadening their experience of working scientifically</p>	<p style="text-align: center;">Energy – Sound and vibrations</p> <p>Exploring different ways of producing sounds, children learn about the relationship between vibrations and what they hear. They study dolphins and whales to develop their understanding of how sound travels between objects and investigate the role of insulation to protect our ears. Pupils explore how pitch and volume can be altered and make their own musical</p>	<p style="text-align: center;">Living Things – Classification and changing habitats</p> <p>Identifying different ways to group living things, children make classification keys to explore which grouping methods are most effective. Pupils study how habitats change over time and understand that humans can have both positive and negative effects on their surroundings. They play the role of conservationists and</p>	<p style="text-align: center;">Plants – Plant reproduction</p> <p>Building on their prior knowledge of plant structures, children describe the functions of named parts and use evidence to explain their significance in plant development. They investigate factors that may affect plant growth and how water is transported. They explore how seeds vary and create models to show seed dispersal methods.</p>	<p style="text-align: center;">Consolidation unit – How does wind force effect seed dispersal?</p> <p>Using different wind speeds to disperse seeds, pupils measure how force affects the distance they travel. They consider how seeds are shaped differently and how this links with the way they are dispersed. Extending the enquiry, pupils measure the volume of different wind speeds to better explain their results. They explore</p>



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			instruments to demonstrate these principles.	design conservation pamphlets.		biomimicry, considering how seed shapes have contributed to product design.
Key Vocabulary	attract contact force electromagnet force friction magnet magnetic material magnetism non-contact force non-magnetic material north pole repel south pole	<ul style="list-style-type: none"> • boiling point • climate change • compress • condensation • condensing • condensing point • drought • evaporating • evaporation rate • flood • force • freezing • freezing point • gas • gaseous • liquid • matter • melting • melting point • precipitation • rate 	<ul style="list-style-type: none"> • air • bar chart (Y3) • eardrum • insulator • observe (Y1) • pitch • plan (Y1) • predict (Y2) • proof • record (Y3) • research (Y2) • results table (Y3) • sound • trustworthy (Y3) • vibration • volume 	<ul style="list-style-type: none"> • amphibian (Y1) • bird (Y1) • classification key • classify • conservation • deforestation • endangered • fish (Y1) • flowering plants (Y3) • group • habitat (Y2) • insect • invertebrate (Y3) • mammal (Y1) • nature reserve • non-flowering plants • observe (Y1) • pollution 	<ul style="list-style-type: none"> • bar chart • conclusion • female • flowering plant • male • pattern (KS1) • pollen • pollination • predict (KS1) • record • reproduction • results table • seed dispersal • transport • variable 	<ul style="list-style-type: none"> • bar chart • conclusion • conservation • control variable • deforestation • fair • flowering plant • force • friction • investigation • measure (KS1) • method • pattern (KS1) • pollution • predict (KS1) • proof • record • results table • seed (KS1) • seed dispersal • sound



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Class 4 Year 5 and 6	<p>Living things: Life cycles and reproduction Studying animal life cycles, children learn about the significance of reproduction for a species' survival. Pupils compare asexual and sexual reproduction in plants and grow cuttings to measure and plot root growth over time. Children compare the life cycles of mammals, birds, amphibians and insects identifying key differences. They analyse secondary data to investigate how the amphibian life cycle is affected by predators and climate change.</p>	<p>Forces and space: Unbalanced forces Building on their knowledge of forces, children explore gravity, air resistance and water resistance in more depth and consider the effect of these forces being unbalanced. They demonstrate key principles in the classroom and plan investigations to further their understanding of the effects of these forces. Pupils test their ideas using models and compete to build the most effective pulley system</p>	<p>Living things: Classifying big and small Children broaden their knowledge of how vertebrates, invertebrates, plants and micro-organisms are grouped using shared characteristics. They discover how Carl Linnaeus developed the Linnaean and binomial systems for classifying and naming living things. Pupils use and produce classification keys to sort and identify organisms.</p>	<p>Electricity – Energy: Circuits, batteries and switches Using their prior knowledge of electrical circuits, children learn to draw conventional circuit diagrams and use models to explain current, resistance and voltage. They compare different batteries and consider the effect on bulb brightness. Pupils apply their knowledge of switches and electrical circuits to design and produce their own practical devices.</p>	<p>Living things: Evolution and inheritance Studying patterns in humans and other species, children learn about characteristics that are inherited from parents and those that are environmental. Through the eyes of Darwin and Wallace, they learn how observations lead to theories and explore natural selection. By modelling the variation and natural selection of Darwin's finches, they begin to explain how species evolve over time and the role of fossil evidence that supports this theory.</p>	<p>Consolidation unit- Animals, including humans: Human timeline Studying human development and changes, children identify key stages and consider what data may help determine if a child is growing normally. They describe how puberty affects girls and boys and produce graphs to compare how gestation periods vary across different mammals, including humans.</p>
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		Scientist Study: Hertha Ayrton			Scientist Study: Charles Darwin	
Key Vocabulary	<ul style="list-style-type: none"> • adolescence • asexual reproduction • characteristic • data • estimate • fertilisation • germination • gestation • gills • incubation • line graph • line of best fit • lungs • mating • metamorphosis • offspring • ovule • pollen • pollination • reproduction • sexual reproduction 	<ul style="list-style-type: none"> • air resistance • anomaly • balanced • control variable (LKS2) • data • force (LKS2) • gear • gravity • lever • line graph • line of best fit • mean average • pivot • pulley • relationship • reliable • surface area • trustworthy (LKS2) • unbalanced • variable (LKS2) 	classification key (LKS2) classify (LKS2) cold-blooded conifer exoskeleton fern life processes micro-organism moss organism warm-blooded	<ul style="list-style-type: none"> • anomaly • cell • circuit diagram • control variable (LKS2) • current • data • evaluate • evidence • fair test • hazard • mean average • model • relationship • resistance • safety • units • variable (LKS2) • voltage 	<ul style="list-style-type: none"> • adaptation • anomaly • characteristic • competition • control variable (LKS2) • environment • environmental • evaluate • evidence • evolution • extinct • fossil (LKS2) • gene • habitat (KS1) • inherit • inheritance • mean average • model • natural selection • offspring • parent (biological) 	anomaly evidence foetus gestation period hormones life cycle line graph period (menstruation) puberty rate (LKS2) relationship



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		<ul style="list-style-type: none">• water resistance				