

Croft Church of England primary School Science Vital Knowledge Milestones		
Science Vital Knowledge Mile Stone 1 (by age 5 years)		
Biology	Chemistry	Physics
<ul style="list-style-type: none"> I can locate the arms, legs, body and head on the picture of an animal / a human. I know that the life cycle of a chicken is: egg, chick, chicken. I know the life cycle of a frog is: egg, tadpole, frog. I know that a polar bear lives in cold places. I know that a fish lives in water. I know worms live in the ground. Camels live in hot places. I can locate the flower, root, stem, leaves on a plant (including soil). I know that David Attenborough is a famous Biologist. 	<ul style="list-style-type: none"> I can identify glass, metal, rubber and plastic objects. 	<ul style="list-style-type: none"> I can identify the sun, moon, day and night on a picture.
arms, legs, body, head, animal, human, life cycle, hot, cold, water, flower, root, stem, leaves, soil.	glass, metal, rubber, plastic.	sun, moon, day, night, dark, light.
Science Vital Knowledge Milestone 2 (by age 7 years)		
Biology	Chemistry	Physics
<ul style="list-style-type: none"> I can locate and name the following body parts: feet, knees, hands, shoulders, elbows, neck, mouth, ears, eyes, nose, eyebrows, hair, penis and vagina. I can name and locate the following parts of a plant: petals, fruit, roots, flowers, seeds, trunk, branches and bulb. I know that an orangutan's habitat is the rainforest. I know that a penguin's habitat in the north and south pole. I know that a rattlesnake's habitat is the desert. I know that three characteristics of a mammal are: warm blood, give birth to live young, feed their young milk. I can identify the producer, predator and prey in a food chain. I know that Jane Goodall is a famous biologist who studied chimpanzees. 	<ul style="list-style-type: none"> I know that plastic, fabric and glass are man-made materials. I know that wood, coal and wool are natural materials. I can name materials that are shiny, strong, smooth and waterproof. I know that Louis Pasteur was a famous chemist who was important in developing understanding of vaccinations. 	<ul style="list-style-type: none"> Name all four seasons in order – winter, spring, summer, autumn I know that Isaac Newton is a famous Physicist and he discovered gravity.
body parts, feet, knees, hands, shoulders, elbows, neck, mouth, ears, eyes, nose, eyebrows, hair, penis, vagina, petals, fruit, roots, flowers, seeds, trunk, branches, bulb, habitat, desert, rainforest, north/south pole, mammal, producer, predator, prey, food chain.	plastic, fabric, glass, man-made, natural, material, shiny, strong, smooth, waterproof	Spring, Summer, Autumn, Winter
Science Vital Knowledge Milestone 3 (by age 9 years)		
Biology	Chemistry	Physics
<ul style="list-style-type: none"> I can name and locate the skull, brain, ribs, heart, lungs, joints, muscles on a diagram of the body. I can locate and name the different teeth: incisors, canines, molars and premolars. I can classify the following animals as vertebrates or invertebrates: snake, dolphin, horse, parrot, newt, beetle, woodlouse, spider, octopus I know that plants need water, sunlight and CO₂ to grow. I can identify and name key parts of the digestive system: teeth, tongue, saliva, oesophagus, stomach, small intestine, large intestine, rectum, faeces. I know that Edward Jenner is a famous biologist (and chemist) who discovered the vaccination for smallpox. 	<ul style="list-style-type: none"> I can name and locate the processes of the water cycle on a diagram: evaporation, condensation, precipitation, transpiration. I can classify simple rocks as sedimentary, metamorphic, igneous. I know that water freezes at 0 and water boils at 100 degrees. I know Alfred Nobel was a famous scientist who bequeathed the Nobel Peace prize. 	<ul style="list-style-type: none"> I know that the sun is a source of light and the moon is not. I can name and locate the following forces on a diagram: gravity, friction and magnetism. I can name and locate components on a simple circuit diagram. I know the meaning of the work pitch, amplitude and frequency. I know that Albert Einstein was a famous physicist who revolutionised our understanding of space, time and gravity.
skull, brain, ribs, heart, lungs, joints, muscles, teeth, incisors, canines, molars, premolars, snake, dolphin, horse, parrot, newt, beetle, woodlouse, spider, octopus, water, sunlight, digestive system, tongue, saliva, oesophagus, stomach, small intestine, large intestine, rectum, faeces	water cycle, evaporation, condensation, precipitation, transpiration, classify, sedimentary, metamorphic, igneous, freezing point, boiling point	light source, sun, moon, forces, gravity, friction, magnetism, component, simple circuit, diagram, wire, bulb, switch, batter (cell), pitch, amplitude, frequency
Knowledge Vital Milestone 4 (by age 11 years)		
Biology	Chemistry	Physics
<ul style="list-style-type: none"> I can name and locate the parts of the circulatory system: heart, blood, lungs, arteries, veins, capillaries, oxygenated blood, deoxygenated blood, valves. I can draw and label the life cycle of a frog and flowering plant. I can name a species that is extinct, endangered and thriving. I know that Charles Darwin was a famous biologist who proposed the theory of evolution. 	<ul style="list-style-type: none"> I can name and describe a reversible and irreversible change in state. I know that Marie Curie was a famous chemist who carried out the first treatment of tumours. 	<ul style="list-style-type: none"> I know that light travels in straight lines, reflects from some objects and cannot travel through some objects. I know the names and order of all of the planets in the solar system. I can name and describe air resistance, water resistance, friction. I can use the following components: wires, battery (cell), switch, bulb, buzzer, ammeter, resistor do draw a simple circuit diagram using the correct symbols. I know that Stephen Hawking was a famous theoretical physicist who proposed the idea of the origins of the universe.
circulatory system, heart, blood, lungs, arteries, veins, capillaries, oxygenated blood, deoxygenated blood, valves, life cycle, species, extinct, endangered, thriving.	reversible, irreversible, change in state	light, straight, reflect, translucent, opaque, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, (Pluto), air resistance, water resistance, friction, buzzer, ammeter, resistor, symbol.

**Croft Church of England primary School
Science Vital Knowledge Milestones Questions**

Science Vital Knowledge Mile Stone 1 Questions (by age 5 years)

Biology	Chemistry	Physics
<ul style="list-style-type: none"> ▪ Find the arms, legs, body and head on the picture. (human/animal) ▪ Put these in the correct order: egg, chick, chicken (pictures) ▪ Put these in the correct order: egg, tadpole, frog (pictures) ▪ Put the following animals where you think they should live (polar bear, fish, worm and camel) ▪ Name the parts of the plant – flower, root, stem, leaves, soil 	<ul style="list-style-type: none"> ▪ Identify the objects that are made from: glass, metal, rubber and plastic - practical 	<ul style="list-style-type: none"> ▪ Put the sun and moon onto these pictures. (pictures)
arms, legs, body, head, animal, human, life cycle, hot, cold, water, flower, root, stem, leaves, soil.	glass, metal, rubber, plastic.	sun, moon, day, night, dark, light.

Science Vital Knowledge Milestone 2 Questions (by age 7 years)

Biology	Chemistry	Physics
<ul style="list-style-type: none"> ▪ Name and identify the following body parts: feet, knees, hands, shoulders, elbows, neck, mouth, ears, eyes, nose, eyebrows, hair, penis and vagina. ▪ Name the parts of a plant: petals, fruit, roots, flowers, seeds, trunk, branches and bulb. ▪ Can you name the following habitats: rainforest, polar region, desert, ocean – and suggest an animal that might live there. ▪ Name three characteristics of a mammal. ▪ Identify the producer, predator and prey in a food chain (pictures given). 	<ul style="list-style-type: none"> ▪ Name three man-made and three natural materials. ▪ Name a material that is: stretchy, shiny, strong, smooth, waterproof 	<ul style="list-style-type: none"> ▪ Name all four seasons in order – winter, spring, summer, autumn
body parts, feet, knees, hands, shoulders, elbows, neck, mouth, ears, eyes, nose, eyebrows, hair, penis, vagina, petals, fruit, roots, flowers, seeds, trunk, branches, bulb, habitat, desert, rainforest, north/south pole, mammal, producer, predator, prey, food chain.	plastic, fabric, glass, man-made, natural, material, shiny, strong, smooth, waterproof	Spring, Summer, Autumn, Winter

Science Vital Knowledge Milestone 3 Questions (by age 9 years)

Biology	Chemistry	Physics
<ul style="list-style-type: none"> ▪ Locate and name the parts of the body: skull, brain, ribs, heart, lungs, joints, muscles. ▪ Locate and name the different teeth: incisors, canines, molars and premolars. ▪ Classify the following animals as vertebrates or invertebrates: snake, dolphin, horse, parrot, newt, beetle, woodlouse, spider, octopus ▪ What does a plant need to grow? (water, sunlight, CO₂) ▪ Identify and name the parts of the digestive system: teeth, tongue, saliva, oesophagus, stomach, small intestine, large intestine, rectum, faeces. 	<ul style="list-style-type: none"> ▪ Name the processes of the water cycle: evaporation, condensation, precipitation, transpiration. ▪ Classify rocks: sedimentary, metamorphic, igneous. ▪ At what temperature does water: freeze? boil? 	<ul style="list-style-type: none"> ▪ Name a source of light. ▪ Name the following forces: gravity, friction and magnetism (diagram) ▪ Label the circuit diagram (simple circuit) ▪ Match the word with the definition: pitch, amplitude, frequency
skull, brain, ribs, heart, lungs, joints, muscles, teeth, incisors, canines, molars, premolars, snake, dolphin, horse, parrot, newt, beetle, woodlouse, spider, octopus, water, sunlight, digestive system, tongue, saliva, oesophagus, stomach, small intestine, large intestine, rectum, faeces	water cycle, evaporation, condensation, precipitation, transpiration, classify, sedimentary, metamorphic, igneous, freezing point, boiling point	light source, sun, moon, forces, gravity, friction, magnetism, component, simple circuit, diagram, wire, bulb, switch, batter (cell), pitch, amplitude, frequency

Knowledge Vital Milestone 4 Questions (by age 11 years)

Biology	Chemistry	Physics
<ul style="list-style-type: none"> ▪ Name the parts of the circulatory system (heart, blood, lungs, arteries, veins, capillaries, oxygenated, deoxygenated, valves). ▪ Draw the life cycle of a frog and plant. ▪ Name a species that is extinct, endangered and thriving. 	<ul style="list-style-type: none"> ▪ Name a reversible and irreversible change in state. 	<ul style="list-style-type: none"> ▪ Name three properties of light. ▪ Name the planets of the solar system. ▪ Name the force that is slowing down this object? (air resistance, water resistance, friction) ▪ Use the following symbols to draw a working circuit (wires, battery (cell), switch, bulb, buzzer, ammeter, resistor).
circulatory system, heart, blood, lungs, arteries, veins, capillaries, oxygenated blood, deoxygenated blood, valves, life cycle, species, extinct, endangered, thriving.	reversible, irreversible, change in state	light, straight, reflect, translucent, opaque, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, (Pluto), air resistance, water resistance, friction, buzzer, ammeter, resistor, symbol.