St. Joseph's Catholic Primary School

	BIOLOGY	PHYSICS	CHEMISTRY
	Pupils develop an understanding of the concept of BIOLOGY through:	**Pupils develop an understanding of the concept of PHYSICS through:**	**Pupils develop an understanding of the concept of CHEMISTRY through:**
Properties and changes of materials *Chemistry*	• knowing, describing and explaining the changes humans go through to old age • knowing and using a timeline to show stages of growth and development of humans, including puberty • knowing, comparing and explaining the difference in gestation periods of humans to other animals, such as an elephant or butterfly	• knowing and explaining that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • knowing, identifying and explaining the effects of air resistance, water resistance and friction, that act between moving surfaces, such as a parachute or a brake on a bike • knowing and explaining how significant scientists, such as Isaac Newton or Galileo Galilei helped develop the theory of gravitation • knowing, experiencing and explaining how the effect of friction on movement slows or stops moving objects	• knowing, identifying and grouping the properties of everyday materials, such as hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets • knowing and explaining how some materials dissolve in liquid to form a solution • knowing and describing how to recover a substance from a solution • knowing and using their knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating • knowing and explaining, by giving reasons based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • knowing and explaining how dissolving, mixing and changes of state are reversible changes • knowing and explaining that some changes result in the formation of new materials that are not usually reversible, such as burning
Animals, including humans *Biology*	• knowing, identifying and explaining the differences in the life cycles of a mammal (dog) , an amphibian (frog), an insect (ladybird) and a bird (chicken) • knowing and explaining the life process of reproduction in some plants and animals • knowing and explaining about a significant scientist, such as Maria Merion who David Attenborough described as one of the most important contributors to entomology	• knowing and explaining that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect known as a force multiplier • knowing and experiencing how levers, pulleys and gears multiply a smaller force to achieve a greater effect, such as removing a nail using a claw hammer, making simple pulleys and gears on a bike	
Forces *Physics*			
Earth in Space *Physics*		• knowing and identifying the eight planets in our solar system - Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune • knowing and identifying Pluto as a dwarf planet • knowing, identifying and explaining the movement of the Earth and other planets, relative to the Sun in the solar system • knowing and explaining the movement of the Moon relative to the Earth • knowing and explaining that a moon is a celestial body that orbits a planet, such as the Moon around Earth or the four large moons of Jupiter - Io, Europa, Ganymede and Callisto first seen by Galileo Galilei • knowing and explaining that the Sun, Earth and Moon are approximately spherical bodies • knowing about Earth's rotation to explain day and night and the apparent movement of the sun across the sky	
Living things and their habitats *Biology*			