

Classroom Workshop: Energy

Primary school curriculum references: 1. Science

Curriculum	Science
Level	5 th & 6 th classes
Strand	Living things
Strand Unit	Human Life
Objective	<ul style="list-style-type: none"> develop a simple understanding of food a nutrition <p><i>the importance of food for energy and growth</i></p>

Curriculum	Science
Level	5 th & 6 th classes
Strand	Living things
Strand Unit	Plant and animal life
Objective	<ul style="list-style-type: none"> become aware of the sun as a source of energy for plants through photosynthesis become aware of some of the basic life processes in animals and plants <p><i>plants: nutrition, reproduction, movement in response to light, use of oxygen and carbon dioxide</i></p>

Curriculum	Science
Level	5 th & 6 th classes
Strand	Energy and forces
Strand Unit	Light
Objective	<ul style="list-style-type: none"> learn that light is a form of energy

	<ul style="list-style-type: none"> • know that light travels from a source • understand the role of sunlight in photosynthesis and appreciate that the sun gives us heat and light without which people and animals could not survive
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Curriculum	Science
Level	5 th & 6 th classes
Strand	Energy and forces
Strand Unit	Sound
Objective	<ul style="list-style-type: none"> • learn that sound is a form of energy • explore how sound travels through materials <i>air, water and solids</i> <i>identify materials that muffle sound</i>

Curriculum	Science
Level	5 th & 6 th classes
Strand	Energy and forces
Strand Unit	Heat
Objective	<ul style="list-style-type: none"> • experiment with a range of materials to establish that heat can be transferred in different ways <i>through water, metals or air</i> <ul style="list-style-type: none"> • recognise a variety of sources of heat <i>renewable sources (e.g. solar energy, heat from burning bio-mass)</i> <i>non-renewable sources (e.g. heat from burning of fossil fuels)</i> <i>friction in mechanical movement</i> <ul style="list-style-type: none"> • know that heat energy can be

	<p>transferred <i>in solids (conduction)</i> <i>in water and air (convection)</i> <i>from the sun (radiation)</i></p> <ul style="list-style-type: none"> • measure and record temperature using a thermometer
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Curriculum	Science
Level	5 th & 6 th classes
Strand	Energy and forces
Strand Unit	Magnetism and electricity
Objective	<ul style="list-style-type: none"> • learn that magnets can push or pull magnetic materials • investigate how magnets may be made <i>stroking a piece of iron or steel with a magnet</i> <i>passing electricity through a coil around a piece of iron or steel (electromagnet)</i> • explore the use of magnets to lift and hold objects <i>how magnets can be used in cranes, door catches</i> <i>how magnets may be used to sort materials</i> • learn about electrical energy • investigate current electricity by constructing simple circuits <i>use wire, bulbs, motors and batteries</i> <i>experiment with simple switches</i> <i>design and make set of traffic lights using a simple circuit and switch</i> • become aware of how some common electrical appliances work

Curriculum	Science
Level	5 th & 6 th classes
Strand	Energy and forces
Strand Unit	Forces
Objective	<ul style="list-style-type: none"> • explore how objects can be moved <i>by pushing and pulling by machines using rollers, wheels, axles, gear wheels, chains and belts by pouring and pumping using trapped air pressure (pneumatics) using trapped liquid under pressure (hydraulics) using wind energy harnessing energy of moving water design and make a lifting device that uses levers and gears design and make a windmill, water wheel or wind turbine to spin a coloured disk or turn a flywheel</i> • explore the effect of friction on movement and how it may be used to slow down or stop moving objects <i>a bicycle wheel by a brake a falling object by a parachute air resistance, streamlining</i> • explore how friction can generate heat <i>rubbing hands</i> • come to appreciate that gravity is a force • become aware that objects have weight because of the pull of gravity <i>design and make a spring balance</i> • explore how levers may be used to help lift different objects <i>design and make a toy using a lever</i>

Curriculum	Science
Level	5 th & 6 th classes
Strand	Materials
Strand Unit	Properties and characteristics of materials
Objective	<ul style="list-style-type: none"> • recognise that materials can be solid, liquid or gaseous • recognise that a gas such as air, occupies space, has <i>mass</i> and exerts pressure <i>investigate evidence for atmospheric pressure</i> <i>explore the effect of air resistance</i> <i>design and make a glider</i> • become aware of some practical applications of these gases in everyday life <i>use of carbon dioxide in fizzy drinks</i> <i>and in fire extinguishers</i>

Curriculum	Science
Level	5 th & 6 th classes
Strand	Materials
Strand Unit	Materials and change
Objective	<ul style="list-style-type: none"> • explore the effects of heating and cooling on a range of liquids, solids and gases <i>temporary changes (e.g. from solid to liquid to gas)</i> <i>expansion of water on freezing</i> <i>evaporation of water on heating</i> <i>permanent changes (e.g. those caused by baking bread in an oven)</i> • recognise that oxygen is required for burning • examine the changes that take place in materials when

physical forces are applied
*when materials are beaten, whisked,
 mixed, squashed, pulled or bent*

Curriculum	Science
Level	5 th & 6 th classes
Strand	Environmental awareness and care
Strand Unit	Environmental awareness
Objective	<ul style="list-style-type: none"> • come to appreciate the need to conserve resources • become aware of the importance of the Earth's renewable and non-renewable resources

Curriculum	Science
Level	5 th & 6 th classes
Strand	Environmental awareness and care
Strand Unit	Science and the environment
Objective	<ul style="list-style-type: none"> • begin to appreciate the application of science and technology in familiar contexts <i>at home</i> <i>at school</i> <i>in the work-place</i> <i>in hospitals</i> <i>in designing and making activities</i> • identify some ways in which science and technology contribute positively to the use of the Earth's resources <i>generating electricity, processing food</i>

Curriculum	Science
Level	5 th & 6 th classes
Strand	Environmental awareness and care
Strand Unit	Caring for the environment
Objective	<ul style="list-style-type: none"> • identify and discuss a local, national or global environmental issue <i>such as ozone depletion, nuclear energy, global warming</i>