

ingridscience student workshop selections

Biology

Topic	Activity selections
Needs, Features and Adaptations of Living Things	Live worm or wood bug study, and construction of a classroom habitat. Animal adaptation lesson. Choose from teeth, beaks, wings, fins, fur, feathers. Study of plant structures and adaptations. Make gazpacho soup from plant parts.
Life Cycles	Choose plant activities on pollination, germination and growth, or seeds. Use a real skeleton to explore life cycles of a deer and other life connected to it.
Biodiversity, Food Chains and Interconnectedness	Search for living things in soil, pond water or at the beach. Construct a food web starting with the species discovered. Option for outdoor lesson.
Sensing	Select from hearing, touch, taste, smell, vision activities.
Organ Systems	Clam dissection with comparison of its organs to ours. Skeletal system lesson with real bone activities. Nervous system lesson with a series of data collection activities.
Evolution and Natural Selection	Evolution concepts can be inserted into any of the activities: ask for this focus. Fossils lesson: how they formed and what they tell us.



Chemistry

Topic	Activity selections
Properties of Matter	Choose from properties to explore: stickiness, buoyancy, elasticity. Indigenous use of materials for weaving, plant dyes and clam baskets.
Physical Changes, State changes and molecules	Make popcorn and understand how water changing state makes it pop. Epsom salt crystal painting. NOTE: need nearby microwave. Make and test glues made from mixtures of solids and liquids.
Chemical reactions	Younger students discover chemical reactions making mixtures through free-play. Make a soda drink, with optional molecular modelling of the chemical reaction. Older grades compare soda drinks made with other juices and graph results. Optional (any age): use the same reaction to set off a rocket.
Chemistry of Cooking	Make bread/scones/cake batter. Model the chemistry. NOTE: may need oven.
Solutions and their separation	Epsom salt crystal painting or chromatography to show separation of the components of a solution. Use red cabbage dye to investigate concentration.
Heterogenous mixtures	Mix household chemicals to make heterogeneous mixtures. Make colloids with butter or oobleck.
Crystals	Understand crystal structure through crystal activity stations.

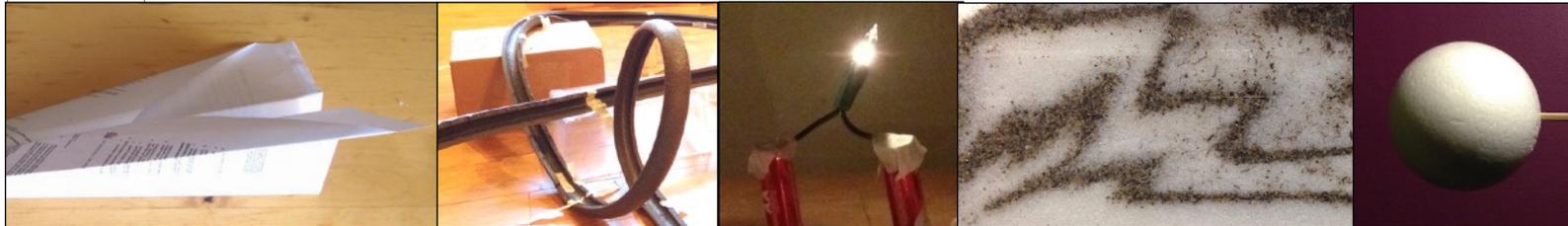
or request any K-7 topic

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Physics

Topic	Activity selections
Motion and Forces	Play a desktop coin game to observe forces and how they are transferred. Build and test bridges to understand the forces and fasteners in their structure. Focus on specific forces e.g. friction, magnetic force, air or water resistance
Sound and Light	Build a noise maker to understand how sound is made and explore pitch. Discover the properties of light through free-play light stations.
Heat	Hands-on activities on heat conduction and convection, and sources of heat.
Transformation and conservation of energy	Design foam roller coasters for marbles; discuss energy transformations in them. Build a catapult; discuss the chain of forces and transfer of energy in them.
Simple machines	Experiment with everyday household levers and/or inclined planes (wedges and screws) to understand the trade of force over distance. Free-play with pulleys.
Forces and Newton's Laws	Make and refine paper airplanes to figure out the balance of forces in flight. Set off balloon or film canister rockets to further explore Newton's Third Law.
Electricity	Freely experiment with wires, lights and batteries to discover some principles of electric current. Optional: make an electromagnet.



Earth/Space

Topic	Activity selections
The Moon	Model phases of the Moon (NOTE: need a space that can be made dark). Make craters in flour to learn how crater features reveal moon/planet composition.
Exploring the Solar System	Construct a Solar System Scale model NOTE: will be outdoors for half an hour. Set off a small rocket and use molecule models to understand rocket chemistry. Older students: model gravity assist which sends probes into space.
Learning from Starlight	Make a spectroscope to view light sources, then the sun. Learn how astronomers use starlight to understand the lives of stars and the expansion of our universe.
Weather Phenomena and Measuring Weather	Recreate lightning, frost, rainbows or sunsets. Measure temperature. Design the mechanism of an anemometer (wind spinner) or rain gauge.
Water and Interconnectedness	Set up a small-scale water cycle (shows evaporation, condensation, precipitation). Model the origins of ocean currents and weather systems using coloured water. Activities on our connection to water, life and our planet; Indigenous practices.
Erosion, Landforms and Rock Cycle	Use sand and water to model erosion and landform formation. Model sedimentary rock formation, uplifting and fossil formation. Mineral and crystal study.

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