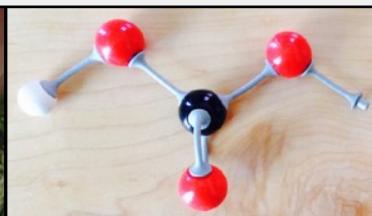


# ingridscience student workshop selections

## 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 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 deer skeleton to explore life cycles of the deer and life connected to it.
Biodiversity, Food Chains, Sustainable food sources	Search for living things in soil, pond water or at the beach, and construct a food web starting with the species discovered. Model fish traps and clam baskets.
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 data collection activities.
Evolution and Natural Selection	Evolution concepts can be inserted into any of the activities: ask for this focus. Fossils workshop: how they form and what they tell us.



## Chemistry

Topic	Activity selections
Properties of Matter	Choose from properties to explore: stickiness, buoyancy, elasticity, conductivity. 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	Make mixtures and discover chemical reactions making mixtures through free-play. Make a soda drink and use molecular models to understand the chemical reaction. Use the same reaction to set off a rocket.
Chemistry of Cooking	Make bread, scones or cake batter. Use molecular models to understand the chemistry of the dough or batter rising. NOTE: may need oven.
Solutions and their separation	Epsom salt crystal painting or chromatography to show separation of components in a solution. Use red cabbage dye to investigate concentration and pH.
Heterogenous mixtures	Mix household chemicals to make heterogeneous mixtures. Explore colloids by making butter or oobleck.
Crystals	Understand crystal structure through crystal activity stations.

or request any K-7 topic

\$5 per student / no charge for low income students

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## Physics

Topic	Activity selections
Motion, Forces and Newton's Laws	Play a coin game and build catapults to explore types of forces and their transfer. Build and test bridges to understand the balance of forces in their structure. Focus on specific forces e.g. friction, magnetic force, air or water resistance. Explore Newton's Third Law with paper airplanes and rockets.
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, heat convection and sources of heat.
Transformation and conservation of energy	Design foam roller coasters for marbles and discuss the energy transformations. Build a catapult and discuss the chain of forces and transfer of energy.
Simple machines	Pulley free-play activity. Experiment with everyday household levers and/or wedges and screws, to understand the trade of force over distance.
Electricity	Experiment with wires, lights and batteries to discover principles of electricity.



## 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 the solar system).
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, Measuring Weather	Recreate lightning, frost, rainbows or sunsets. Measure temperature. Design the mechanism of an anemometer (wind spinner) or rain gauge.
Water, Interconnectedness and Sustainability	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 and our planet. Model an oil spill clean-up. Investigate turbine design for sustainable energy production.
Erosion, Landforms and Rock Cycle	Build a play dough mountain from a contour map. Use sand and water to model erosion and landform formation. Model sedimentary rock formation, uplifting and fossil formation. Study mineral and crystal structure and formation.

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