

Pre-Inquiry Activity versus Scientific Inquiry Examples

The Claim or Question Makes the Difference!

Pre-Inquiry Activities	→	Questions generated from the Activity	→	Scientific Inquiry Examples
Characteristics: <ul style="list-style-type: none"> • Simple science activity or confirmation lab • Has no particular investigation designed • Does not allow students to collect enough data to complete scientific inquiry • Exploration of science content 		Characteristics: <ul style="list-style-type: none"> • Questions are generated by students or teacher • No limit on questions • Should be mostly student directed but teachers provide clues 		Characteristics: <ul style="list-style-type: none"> • Student poses a question or claim that can be tested • Includes a design based on important science background knowledge • Investigation allows students to collect data that can be transformed and analyzed • Often has a manipulated variable
Make a solid rocket and launch		What makes rockets fly different distances?		Fin placement makes rockets fly different distances.
Magnets can attract metals		What types of materials can magnets attract or not attract?		Magnets attract metals that contain iron.
All parts of magnets are magnetic or attractive		What makes parts of a magnet attract metals?		Does the edge of a circular magnet have the same strength/magnetic force as the north and south pole of the same magnet?
Newspaper is an insulator		Which materials make the best insulators?		The thickness of newspaper affects how well it insulates.
Detect temperature differences of different colored surfaces under light		How does color respond to light?		Light colored surfaces will retain heat energy better than dark colored surfaces.
Solids dissolve in water		Which materials dissolve slowly or quickly?		Surface area affects <i>rates</i> that solids dissolve.
Measure distances of pool balls after collision		What will cause a pool ball to move farther when hit?		Mass affects velocity.
Bugs stand on water		How many drops of water will fit on a penny?		Different substances have different surface tensions.

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These are NOT state-required topics for Scientific Inquiry. Teachers are encouraged to create their own topics for classroom use.

Pre-Inquiry Activities	→	Questions generated from the Activity	→	Scientific Inquiry Examples
Measure water level changes over time		What types of containers hold water the longest?		How does surface area affect the rate of evaporation?
Wind Turbines and how they work		What makes wind turbines produce more energy?		Energy cannot be created nor destroyed but only changed from one form to another.
Water evaporates		What is water and its cycle?		What variables affect the rate of evaporation of water?
Record plant growth		What do plants need to survive?		What factors affect plant health?
Plant a seed and watch it grow		What affects germination?		Light affects the rate of seed germination.
Study fossils that show biological evolution		What information does the locations where fossils are discovered give you?		Fossils show variations over time.
Measure temperature of different surfaces around school		How does the type of surface affect heat absorption?		Does the type of surface affect heat absorption of the soil?
Plot earthquake and volcano locations		What geologic events are frequently associated with plate boundaries?		Earthquakes and Volcanoes occur in patterns along plate boundaries.
Measure outside temperatures over time period		What time of day are temperatures the highest or lowest?		Temperatures vary with the daily weather patterns.