

Notre Dame Academy

STREAM Curriculum 6th - 8th Grades

Obtaining, Evaluating, and Communicating Information

Integrate qualitative scientific and technical information in written text with that contained in media and visual displays to clarify claims and findings.

Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence.

Analyzing and Interpreting

Analyze and interpret data to determine similarities and differences in findings. Construct and interpret graphical displays of data to identify linear and nonlinear relationships.

Analyze and interpret data to provide evidence for phenomena.

Constructing Explanations and Designing Solutions

Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints.

Apply scientific ideas or principles to design an object, tool, process or system.

Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.

Construct an explanation that includes qualitative or quantitative relationships between variables that predict phenomena

Engaging in Argument from Evidence

Evaluate competing design solutions based on jointly developed and agreed-upon design criteria.

Construct and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem.

Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena

Laws are regularities or mathematical descriptions of natural phenomena.

Interdependence of Science, Engineering, and Technology

Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems.

Asking Questions and Defining Problems

Ask questions that can be investigated within the scope of the classroom, outdoor environment, and museums and other public facilities with available resources and, when appropriate, frame a hypothesis based on observations and scientific principles.

Planning and Carrying Out Investigations

Plan an investigation individually and collaboratively, and in the design: identify independent and dependent variables and controls, what tools are needed to do the gathering, how measurements will be recorded, and how many data are needed to support a claim.

Conduct an investigation and evaluate the experimental design to produce data to serve as the basis for evidence that can meet the goals of the investigation.

Developing and using models

Develop and use a model to describe phenomena.

Develop a model to describe unobservable mechanisms.

Scientific Knowledge is Based on Empirical Evidence

Students develop their understanding the Science knowledge is based upon logical and conceptual connections between evidence and explanations.

Using Mathematics and Computational Thinking

Use mathematical representations to describe and/or support scientific conclusions and design solutions.

Influence of Science, Engineering and Technology on Society and the Natural World

The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. Thus technology use varies from region to region and over time.

Technologies extend the measurement, exploration, modeling, and computational capacity of scientific investigations.

The above areas of focus will be actively integrated with the current course of science, technology and religion studied by each student at middle school level.