Science Philosophy

Science is a way of making sense of the world through careful examination of evidence. Scientific understanding is a dynamic process that relies on a healthy skepticism, where assumptions about the world can be modified or abandoned when new evidence is discovered. The purpose of science is to uncover practical truths about the way the world works. This approach enables us to solve problems and to become responsible caretakers of our environment and planet.

Students learn science best through:

- Curiosity and the desire to understand the world.
- Engaging in hands on inquiry-based collaborative exploration.
- Scientific inquiry takes on many forms that include, but are not limited to: *trial and error, documentation, prediction, testing, experimentation, reflection, model making, invention, creativity and intuition.*
- Functioning as scientists.
- Demonstrating a balance of conceptual understanding, procedural proficiency and factual knowledge.
- Revising thinking by acknowledging and resolving discrepancies and misconceptions through examination of evidence.
- Developing scientific literacy in the process of doing science.
- Immersing themselves in science when it is relevant to their lives.

Effective science teaching practices:

- Provide opportunities for choice, hands-on and collaborative group work that guides scientific discovery.
- Teach process skills that apply to the various content areas of science.
- Offer learning experiences that are integrated across the curriculum.
- Teach a developmentally appropriate number of fundamental concepts that are explored in depth.
- Guide and support students in making connections between their prior knowledge and current instruction.
- Use varied assessments to monitor understanding and ability to apply knowledge.
- Identify and challenge misconceptions.
- Use technology appropriate for doing and teaching science.
- Support understanding of connections within science.
- Link prior knowledge, established scientific knowledge, and new emerging knowledge.
- Place science within an historical context.