

Science High School (general)

Science is the process of understanding the natural world through the analysis of data and evidence

Scientific processes

- design inquiry based investigations
- gather, analyze, and interpret data, maps, and models
- use direct and indirect evidence to develop and support claims
- use measurements, equations, and graphs to analyze and interpret data
- develop, communicate, and justify an evidence-based scientific explanation and prediction
- develop models
- research the history of science
- share experimental data
- critically evaluate claims in the media
- debate
- collaborate with the scientific field
- make inferences
- distinguish between causation and correlation

KEY:
● Unifying Theme
● Organizing Concept
● Supporting Concept
— Explicit Connection
- - - Supporting Connection

Interacting processes and structures in nature can be viewed at various scales

- atomic bonding
- structure of matter
- genes role in multicellularity
- genes and proteins role in physical and behavioral characteristics
- physical and chemical changes on Earth

Change occurs through energy

- chemical and nuclear reactions
- Newton's laws
- forms of energy
- conservation of energy
- organismal homeostasis through cells, tissues, organs, systems
- cellular homeostasis through cell membranes
- cellular energy
- biomolecules and metabolism
- energy interactions result in climate

Nature has a history that can be inferred from evidence

- evidence showing the history of the Universe, Solar System, and Earth
- evolution

Humans have complex interactions with nature

- natural hazards
- cost/benefit of renewable and nonrenewable resources

There is an equilibrium in nature that can be disturbed and lead to a new equilibrium

- extraterrestrial influences on Earth
- matter and energy in ecosystems
- size and persistence of populations