

Aesthetics	Change	Communication	Communities
Connections	Creativity	Culture	Development
Form	Global interactions	Identity	Logic
Perspective	Relationships	Systems	Time, place and space

Table 1
MYP key concepts

These key concepts provide a framework for sciences, informing units of work and helping to organize teaching and learning.

Change

Change is a conversion/shift/movement from one state to another. Exploring change allows students to examine forces that shape the world: past, present and future. Inquiry into the concept of change invites students to consider causes, processes and consequences: natural and artificial, intentional and unintentional, positive and negative.

In sciences, change is viewed as the difference in a system's state when observed at different times. This change could be qualitative (such as differences in structure, behaviour, or level) or quantitative (such as a numerical variable or a rate). Change can be irreversible, reversible or self-perpetuating.

Relationships

Relationships allow students to identify and understand the connections and associations between properties, forces, objects, people and ideas, including the human community's connection with the worlds in which we live. Any change in relationship brings consequences—some of which may occur on a small scale, while others may be far reaching, affecting large systems like human societies and the planet as a whole.

Relationships in sciences indicate the connections found among variables through observation or experimentation. These relationships also can be tested through experimentation. Scientists often search for the connections between form and function. Modelling is also used to represent relationships where factors such as scale, volume of data, or time make other methods impractical.

Systems

Systems are sets of interacting or interdependent components. Everything in the known universe is a component of a system and generally also a part of multiple interacting and interdependent systems. Systems provide structure and order in both natural and human environments. Dynamic and complex in nature, systems rely on a state of equilibrium and are very vulnerable to change.

Systems in sciences describe sets of components that function due to their interdependence or complementary nature. Common systems in science are closed systems, where resources are not removed or replaced, and open systems, where necessary resources are renewed regularly. Modelling often uses closed systems to simplify or limit variables.

Other key concepts can also be important in sciences. For example, development is an important aspect in the continual growth through change that epitomizes scientific knowledge. Science offers important perspectives on the definition, measurement and meaning of time, place and space. Creativity is always important for scientists working together to extend the limits of human understanding.