Physics

Learning science is an active process, it is something that students do, not something that is done to them. An active process implies physical and mental activity. As a science teacher I have developed a physics curriculum in which my students will have hands-on activities as well as minds-on experiences. In these activities the students are involved in inquiry-oriented investigations in which they interact with their teacher and classmates. In physics I use the following content standards in my curriculum:

- Unifying concepts and processes in science

- Science as inquiry

- Physical Science standards

**The unifying concepts are:**

* Systems, order, and organization
* Evidence, models, and explanation
* Change, constancy, and measurement
* Evolution and equilibrium
* Form and Function

**The science as inquiry standards are:**

|  |  |  |
| --- | --- | --- |
| **K-4 Levels** | **5-8 Levels** | **9-12 Levels** |
| Abilities necessary to do scientific inquiry | Abilities necessary to do scientific inquiry | Abilities necessary to do scientific inquiry |
| Understanding about scientific inquiry | Understanding about scientific inquiry | Understanding about scientific inquiry |

**The Physical Science standards are:**

|  |  |  |
| --- | --- | --- |
| **K-4 Levels** | **5-8 Levels** | **9-12 Levels** |
| Properties of objects and materials | Properties and changes of properties in matter | Structure of atoms  Structure and properties of matter  Chemical reactions |
| Position and motion of objects | Motion and forces | Motion and forces |
| Light, heat, electricity, and magnetism | Transfer of energy | Conservation of energy and increase of disorder  Interaction of energy and matter |

**The science and technology standards are:**

|  |  |  |
| --- | --- | --- |
| **K-4 Levels** | **5-8 Levels** | **9-12 Levels** |
| Abilities to distinguish between natural objects and objects made by humans |  |  |
| Abilities of technological design | Abilities of technological design | Abilities of technological design |
| Understanding about science and technology | Understanding about science and technology | Understanding about science and technology |

**The science in personal and social perspective standards are:**

|  |  |  |
| --- | --- | --- |
| **K-4 Levels** | **5-8 Levels** | **9-12 Levels** |
| Personal health | Personal health | Personal and community health |
| Characteristics and changes in populations | Populations, resources, and environments | Population growth |
| Types of resources | Natural hazards | Natural resources |
| Changes in environment | Risks and benefits | Environmental quality  Natural and human-induced hazards |
| Science and technology in local challenges | Science and technology in society | Science and technology in local, national, and global challenges |

**The history and nature of science standards are:**

|  |  |  |
| --- | --- | --- |
| **K-4 Levels** | **5-8 Levels** | **9-12 Levels** |
| Science as a human endeavor | Science as a human endeavor | Science as a human endeavor |
|  | Nature of science | Nature of scientific knowledge |
|  | History of science | Historical perspectives |