# Program and Grade Level Understandings- Science

| Program Understandings | K | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| EARTH SCIENCE<br>I. Student will understand that earth and space are composed of different systems and cycles that influence their daily lives. | Students will understand that weather conditions vary daily and seasonally and that it affects their daily life. | Students will understand that earth materials have observable properties that we use to describe and sort them and make them useful. | Students will understand that weather conditions are measurable and can vary daily, seasonally and affect their daily life. | Students will understand that most objects in the solar system move in a regular and predictable motion and help explain what we see in the sky. | Students will understand that rocks are composed of different combinations of minerals, which make them useful. | Students will understand that there are natural processes that shape and reshape the earth's surface, which may explain changes in the landscape over time. |
| LIFE SCIENCE<br>II. Student will understand that there is a diversity of life forms which are interdependent and inter-connected. | Students will understand that plants and animals have many different observable characteristics which allow them to be classified.<br><br>Students will understand that most living things interact with their habitat in order to survive. | Students will understand that plants and animals have many different observable characteristics which allow them to be classified.<br><br>Students will understand that most living things interact with their habitat in order to survive.<br><br>Students will understand that all living things grow and change, sometimes in predictable patterns to sustain life. | Students will understand that plants and animals have many different observable characteristics which allow them to be classified.<br><br>Students will understand that most living things interact with their habitat in order to survive.<br>Students will understand that all living things grow and change, sometimes in predictable patterns to sustain life. | Students will understand that plants and animals have different structures that serve various functions and allow scientists to classify them.<br><br>Students will understand that many characteristics of an organism are inherited from its parents and these characteristics can be advantageous or disadvantageo us in a particular environment. | | Students will understand that plant and animal structures and their functions provide an advantage for survival in a given natural system.<br><br>Students will understand that natural systems have many parts that interact to maintain the living system. |

# Program and Grade Level Understandings- Science

| Program Understandings | K | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| PHYSICAL SCIENCE<br>III. Student will understand that scientists use the properties and interactions of energy and matter to explain how the physical world works. | Students will understand that all physical objects have properties that we use to describe and sort them. | | Students will understand that all physical objects have properties that we use to describe and sort them.<br><br>Students will understand that objects move in a variety of ways.<br><br>Students will understand that materials have physical properties, which can be changed. | Students will understand that energy appears in different forms, including sound and light, which have unique properties. | Students will understand that heating and cooling causes changes in the form of objects but the properties remain the same.<br><br>Students will understand that energy appears in different forms and can be transferred within and between systems. | Students will understand that force causes changes in the speed or direction of motion. |
| CONCEPTS AND PROCESSES<br>IV. Student will understand that the study of science involves processes that unify science disciplines and provide students with ideas and structures to help them understand the natural world. | | Students will understand that there are patterns that help make connections in the world. | Students will understand that there are patterns that help make connections in the world. | | Students will understand that scientists develop models to understand how systems work to predict future occurrences. | Students will understand that scientists develop models to understand how systems work to predict future occurrences. |

# Program and Grade Level Understandings- Science

| Program Understandings | K | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| INQUIRY<br>V. Students will understand that the process of inquiry is the collection of information verified through observation and experimentation which allow scientists to critically analyze, draw conclusions and make inferences about the natural world. | Students will understand that scientists ask questions and make observations to gather data and learn about their world. | Students will understand that scientists ask questions and make observations to gather data and learn about their world. | Students will understand that scientists ask questions and make observations to gather data to support their thinking about the world. | Students will understand that scientific investigations require us to ask questions, make observations, plan and create tests to verify predictions with evidence and data and generate further questions. | Students will understand that scientific investigations require us to ask questions, make observations, plan and create tests to verify predictions with evidence and data, and generate futher questions.<br><br>Students will understand that scientists use and interpret data from multiple observations and repeated experiments to draw logical conclusions. | Students will understand that scientific investigations require us to ask questions, make observations, plan and create tests to verify predictions with evidence and data, and generate futher questions.<br><br>Students will understand that scientists use and interpret data from multiple observations and repeated experiments to draw logical conclusions. |
| COMMUNICATION<br>VI. Student will understand that scientists use various communications to share knowledge and promote understanding about our natural world. | Students will understand that scientists work individually and collaboratively to understand the natural world and learn from one another. | Students will understand that scientists work individually and collaboratively to understand the natural world and learn from one another. | Students will understand that scientists work individually and collaboratively to understand the natural world and learn from one another. | Students will understand that scientists use a variety of written and oral communication skills to convey their findings.<br><br>Students will understand that scientists work individually and collaboratively to understand the natural world and learn from one another. | Students will understand that scientists use a variety of written and oral communication skills to convey their findings.<br><br>Students will understand that scientists work individually and collaboratively to understand the natural world and learn from one another. | Students will understand that scientists use a variety of written and oral communication skills to convey their findings.<br><br>Students will understand that scientists work individually and collaboratively to understand the natural world and learn from one another. |
| SCIENCE AND ETHICS<br>VII.. Student will understand that science influences and informs the personal and social decisions citizens face. | | | | | Students will understand that natural resources are limited and need to be protected to sustain the environment. | Students will understand that in order to improve their existence, humans interact with and influence Earth systems. |

# Program and Grade Level Understandings- Science

| Program Understandings | K | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| TECHNOLOGY VIII. Student will understand that scientists use and design technology to answer questions, share information and solve problems. | Students will understand that some objects occur in nature; others have been designed by people and are used to learn about the world and solve problems. | Students will understand that natural and designed systems interact and are used to learn about the world. | Students will understand that engineers use a design process to identify problems and devise a product or solution. | Students will understand that engineers and scientists design and apply technology either as a product or a process to accomplish a task. | Students will understand that technology helps us answer questions, solve problems and share information more efficiently.<br><br>Students will understand that engineers and scientists design and apply technology | Students will understand that technology helps us answer questions, solve problems and share information more efficiently.<br><br>Students will understand that engineers and scientists design and apply technology |
| HISTORY AND NATURE OF SCIENCE IX. Student will understand that science reflects its history and is an ongoing, changing enterprise that often leads to looking at old observations in ncw ways. | | Students will understand that men and women throughout the history of all cultures, including Minnesota American Indian tribes and communities, have been involved in engineering design and scientific inquiry. | | Students will understand that men and women throughout the history of all cultures, including Minnesota American Indian tribes and communities, have been involved in engineering design and scientific inquiry. | | Students will understand that men and women throughout the history of all cultures, including Minnesota American Indian tribes and communities, have been involved in engineering design and scientific inquiry. |