Science Enduring Understandings and Essential Questions

Enduring Understanding: Scientists examine **cause and effect** to see relationships between organisms, places, things, ideas, and events.

- Why are scientists concerned about cause and effect?
- How can examining cause and effect help us understand relationships between organisms, places, ideas, and events?
- To what extent can understanding cause and effect help us solve problems and make decisions?

Enduring Understanding 2: Scientists analyze and recognize how organisms, places, things, and ideas **change over time**.

- Why should we understand how organisms, places, and ideas have changed over time?
- How can organisms, places, and ideas change over time?
- How have the actions of organisms changed over time?
- Is the world today a better place than the world of the past? Will our future world be better than today's world?
- How can technology help us recognize and analyze change over time?
- How can the study of science help us connect continuity and change?

Enduring Understanding 3: Scientists **study and compare** organisms, places, ideas, and events to make sense of our world.

- Why should we compare and contrast organisms, places, ideas, and events?
- Why should we recognize universal patterns that exist within our world?
- What tools can scientists use to compare and contrast organisms, places, ideas, and events?
- Are the organisms, places, and events in the world becoming more alike or more different over time?
- How can technology help us study and compare organisms, places, and events?

Enduring Understanding 4: Scientists **recognize and analyze** multiple points of view to explain the ideas and actions of individuals and groups.

- Why should we recognize and analyze multiple points of view?
- How can recognizing different biomes help in understanding of diversity?
- How can differing points of view affect relations between and within societies?
- How can the perspectives of a group affect their use of and impact on the environment?
- To what extent can examining multiple perspectives help us understand conflict and promote cooperation and/or conflict resolution?

Enduring Understanding 5: Scientists analyze and interpret evidence to **solve problems and make decisions**.

- What evidence do social scientists collect?
- How can you determine if evidence is valid and reasonable?
- How can you use evidence to solve problems and make decisions?

- What types of problems are of concern for historians, geographers, civic leaders, economists?
- To what extent can studying evidence from the past help us prevent future problems and make decisions that will affect the future?

Enduring Understanding 6: Scientists make **inferences and generalizations** about various types of information and **draw conclusions** from a variety of sources.

- Why are making inferences and generalizations and drawing conclusions important in understanding our world?
- How can making inferences about various types of information and drawing conclusions help us understand our world?
- How can we use various types of information to make inferences and generalizations about various types of information?
- How can we use a variety of sources to draw conclusions?
- Why should we use a variety of information and sources to make inferences and generalizations and to draw conclusions?

Enduring Understanding 7: Scientists **gather, classify, sequence, and interpret information and visual data** in order to recognize how organisms, places, and events shape our world.

- Why do scientists gather, classify, sequence, and interpret information and visual data?
- How do scientists gather, classify, sequence, and interpret information and visual data?
- Why is visual data important for understanding organisms, places, and events that shape our world?
- To what extent does visual data help us to understand how organisms, places, and events shape our world?
- What types of information and visual data do scientists gather, classify, sequence, and interpret?
- To what extent is visual data more powerful in helping us understand the world than other types of information?
- How can we use technology to gather, classify, sequence, and interpret information and visual data?

Enduring Understanding 8: Scientists **recognize and analyze spatial relationships** in order to see the relationship between and among organisms and places.

- What are spatial relationships?
- Why should we be able to recognize and analyze spatial relationships?
- How can recognizing spatial relationships help us to see the relationship between and among organisms and places?
- To what extent do spatial relationships influence the relationship between and among organisms and places?
- How do spatial relationships change over time?