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?