Course Title: Measurement **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

What concepts do I want students to remember from this unit? (Essential Questions)

- What are the standard units of measurement in the metric system and how do you measure length, mass, temperature, and volume?
- Why are standard units of measurements used?

Unit Title/Number: Measurement	**Timeline: September - October**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
A.4.3 When investigating* a science-related problem, decide what data can be collected to determine the most useful explanations*	Ask and answer questions about investigations. Identify, collect, and evaluate appropriate data.	SR, CR, PA, O
A.4.2 When faced with a science-related problem, decide what evidence*, models*, or explanations* previously studied can be used to better understand* what is happening now	Explain that previously studied evidence can be used to understand what's happening now.	CR, PA, O
A.4.5 When studying a science-related problem, decide what changes* over time are occurring or have occurred	Describe patterns observed during investigations. Identify change or lack of change over time.	CR, PA, O
C.4.1 Use the vocabulary of the unifying themes* to ask questions about objects, organisms, and events being studied	Create explanations and provide examples using vocabulary associated with metric measurement. Apply appropriate science vocabulary when asking questions.	SR, CR, PA, O
C.4.2 Use the science content being learned to ask questions, plan investigations*, make observations*, make predictions*, and offer explanations*	Use science content to plan and conduct an investigation and build explanations by observing, communicating, comparing, and organizing.	SR, CR, PA, O
C.4.4 Use simple science equipment including rulers, balances, graduated cylinders, hand lenses, thermometers, and computers safely and effectively to collect data relevant to questions and investigations*	Select and use appropriate science tool for task.	SR, CR, PA, O
C.4.5 Use data they have collected to develop explanations* and answer questions generated by investigations*	Interpret data to explain and answer questions.	CR, PA, O

Course Title: Measurement **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

Unit Title/Number: Measurement	**Timeline: September - October**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
C.4.6 Communicate the results of their investigations* in ways their audiences will understand by using charts, graphs, drawings, written descriptions, and various other means	Choose appropriate method to communicate the results of the investigation.	CR, PA, O
D.4.4 Observe* and describe* changes* in form, temperature, color, speed, and direction of objects and construct* explanations* for the changes	Demonstrate ways to measure change. Describe change.	CR, PA, O
D.4.5 Construct* simple models* of what is happening to materials and substances undergoing change*, using simple instruments or tools to aid observations and collect data	Demonstrate proper use of measurement tools. Construct models to show changes in materials.	PA, O
G.4.1 Identify* the technology used by someone employed in a job or position in Wisconsin and explain* how the technology helps	Explain how metric measurement is used in various careers and why it is important to those careers.	SR, CR
G.4.2 Discover* what changes in technology have occurred in a career chosen by a parent, grandparent, or an adult friend over a long period of time	Explain how measurement methods have changed over time.	SR, CR
G.4.3 Determine what science discoveries have led to changes in technologies that are being used in the workplace by someone employed locally	Describe the science discoveries that have lead to changes in measurement technology.	SR, CR

Course Title: Earth Materials **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

What concepts do I want students to remember from this unit? (Essential Questions)

- What are the observable characteristics and properties of solid materials from the earth (rocks and minerals)?
- What are the scientific processes to conduct investigations as a geologist?

Unit Title/Number: Earth Materials	**Timeline: November – Mid January**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
A.4.1 When conducting science investigations*, ask and answer questions that will help decide the general areas of science being addressed	Conduct science investigations and identify the general areas of science being addressed (for example, knowing that studying rocks and minerals is earth science).	SR, CR, PA, O
A.4.3 When investigating* a science-related problem, decide what data can be collected to determine the most useful explanations*	Ask and answer questions about investigations. Identify, collect, and evaluate appropriate data.	SR, CR, PA, O
A.4.2 When faced with a science-related problem, decide what evidence*, models*, or explanations* previously studied can be used to better understand* what is happening now and in the future	Explain how previously studied evidence can be used to understand what's happening now.	CR, PA, O
A.4.5 When studying a science-related problem, decide what changes* over time are occurring or have occurred	Describe patterns observed during investigations. Identify change or lack of change over time.	CR, PA, O
B.4.1 Use encyclopedias, source books, texts, computers, teachers, parents, other adults, journals, popular press, and various other sources, to help answer science-related questions and plan investigations	Demonstrate that answers to questions can be found in a variety of resources. Select sources for answers to different questions.	SR, CR, PA, O
B.4.2 Acquire information about people who have contributed to the development of major ideas in the sciences and learn about the cultures in which these people lived and worked	Identify careers relating to science and the study of earth materials (for example, Geology). Identify scientists from around the world who have contributed to major ideas in science.	SR, CR
B.4.3 Show* how the major developments of scientific knowledge in the earth and space, life and environmental, and physical sciences have changed	Describe how the study of earth materials has changed over time.	SR, CR, O

Course Title: Earth Materials **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

Unit Title/Number: Earth Materials	**Timeline: November – Mid January**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
over time		
C.4.1 Use the vocabulary of the unifying themes* to ask questions about objects, organisms, and events being studied	Create explanations and provide examples using vocabulary associated with metric measurement. Apply appropriate science vocabulary when asking questions.	SR, CR, PA, O
C.4.2 Use the science content being learned to ask questions, plan investigations*, make observations*, make predictions*, and offer explanations*	Use science content to plan and conduct an investigation and build explanations by observing, communicating, comparing, and organizing.	SR, CR, PA, O
C.4.3 Select multiple sources of information to help answer questions selected for classroom investigations*	Select proper sources for information. Answer questions using multiple sources of information.	SR, CR, PA, O
C.4.4 Use simple science equipment including rulers, balances, graduated cylinders, hand lenses, thermometers, and computers safely and effectively to collect data relevant to questions and investigations*	Select and use appropriate science tool for task.	SR, CR, PA, O
C.4.5 Use data they have collected to develop explanations* and answer questions generated by investigations*	Interpret data to explain and answer questions.	CR, PA
C.4.6 Communicate the results of their investigations* in ways their audiences will understand by using charts, graphs, drawings, written descriptions, and various other means	Use various methods of communication (chart, etc).	CR, PA
C.4.7 Support their conclusions with logical arguments	Use evidence to defend conclusions.	CR, PA, O
C.4.8 Ask additional questions that might help focus or further an investigation*	Understand that questions lead to investigations. Propose questions that will allow for the collection of data to add to the investigation. Recognize that investigations may lead to further questions.	CR, PA, O

Course Title: Earth Materials **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

Unit Title/Number: Earth Materials	**Timeline: November – Mid January**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
D.4.1 Understand* that objects are made of more than one substance, by observing, describing, and measuring the properties of earth materials, including properties of size, weight, shape, color, temperature, and the ability to react with other substances	Observe, describe, and record properties of minerals. Describe how rocks are composed of various minerals.	SR, CR, PA, O
D.4.2 Group* and/or classify objects and substances based on the properties of earth materials	Organize rocks and minerals based on properties (for example, hardness, etc).	SR, CR, PA, O
D.4.4 Observe* and describe* changes* in form, temperature, color, speed, and direction of objects and construct* explanations* for the changes	Demonstrate an understanding of ways to measure change. Construct explanations to describe change.	SR, CR, PA, O
D.4.5 Construct* simple models* of what is happening to materials and substances undergoing change*, using simple instruments or tools to aid observations and collect data	Demonstrate proper use of measuring tools used to gather data about rocks. Construct models to show changes in materials.	SR, CR, PA, O
E.4.1 Investigate* that earth materials are composed of rocks and soils and correctly use the vocabulary for rocks, minerals, and soils during these investigations	Describe characteristics of solid materials from the earth (rocks and minerals). Use earth science vocabulary correctly.	SR, CR, PA, O
E.4.2 Show* that earth materials have different physical and chemical properties, including the properties of soils found in Wisconsin	List specific properties of rocks/mineral (i.e. hardness, color, texture, appearance). Compare and contrast properties of rocks and minerals.	SR, CR, PA, O
E.4.3 Develop descriptions* of the land and water masses of the earth and of Wisconsin's rocks and minerals, using the common vocabulary of earth and space science	Use vocabulary describing land and water masses. Describe the major land and water masses of Wisconsin.	SR, CR, PA, O

Course Title: Earth Materials **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

Unit Title/Number: Earth Materials	**Timeline: November – Mid January**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
E.4.7 Using the science themes*, describe* resources used in the home, community, and nation as a whole	Explain that earth materials are a natural resource and describe how they are used in the home, community, and nation.	SR, CR
E.4.8 Illustrate* resources humans use in mining, forestry, farming, and manufacturing in Wisconsin and elsewhere in the world	Understand the relationship between earth materials and mining, forestry, farming, and manufacturing. List differences between natural and manufactured resources.	SR, CR
G.4.1 Identify* the technology used by someone employed in a job or position in Wisconsin and explain* how the technology helps	Explain how earth materials are used in various careers and why it is important to those careers.	SR, CR
G.4.2 Discover* what changes in technology have occurred in a career chosen by a parent, grandparent, or an adult friend over a long period of time	Explain how the use of earth materials in the workplace has changed over time.	SR, CR
G.4.3 Determine what science discoveries have led to changes in technologies that are being used in the workplace by someone employed locally	Describe the science discoveries that have lead to changes in the use of earth materials.	SR, CR
H.4.2 Using the science themes*, identify* local and state issues that are helped by science and technology and explain* how science and technology can also cause a problem	Identify how earth science issues have been positively and negatively impacted by advances in science.	SR, CR
H.4.4 Develop* a list of issues that citizens must make decisions about and describe* a strategy for becoming informed about the science behind these issues	Identify issues related to earth materials for example, mining) and evaluate possible decisions people can make regarding those issues.	SR, CR

Course Title: Human Body **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

What concepts do I want students to remember from this unit? (Essential Questions)

- How do the skeletal and muscular systems help our body function?

Unit Title/Number: Human Body	**Timeline: Mid January – End of March**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
A.4.1 When conducting science investigations*, ask and answer questions that will help decide the general areas of science being addressed	Use scientific evidence to answer questions during investigations, and to generate new questions relating to the investigation.	CR, PA,O
A.4.3 When investigating* a science-related problem, decide what data can be collected to determine the most useful explanations*	Collect data necessary to prove that things change or stay the same.	CR, PA,O
A.4.2 When faced with a science-related problem, decide what evidence*, models*, or explanations* previously studied can be used to better understand* what is happening now	Use previous knowledge and current observations to explain that things can stay the same or change.	CR, PA, O
A.4.5 When studying a science-related problem, decide what changes* over time are occurring or have occurred	Identify change or lack of change over time.	CR, PA, O
B.4.1 Use encyclopedias, source books, texts, computers, teachers, parents, other adults, journals, popular press, and various other sources, to help answer science-related questions and plan investigations	Demonstrate that answers to questions can be found in a variety of resources. Select sources for answers to different questions.	SR, PA, O
B.4.2 Acquire information about people who have contributed to the development of major ideas in the sciences and learn about the cultures in which these people lived and worked	Identify careers relating to science. Identify scientists from around the world who have contributed to major ideas in science.	SR, CR
C.4.1 Use the vocabulary of the unifying themes* to ask questions about objects, organisms, and events being studied	Ask questions on the content using appropriate vocabulary.	SR, CR, PA, O

Course Title: Human Body **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

Unit Title/Number: Human Body	**Timeline: Mid January – End of March**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
C.4.2 Use the science content being learned to ask questions, plan investigations*, make observations*, make predictions*, and offer explanations*	Plan a simple investigation, complete the investigation, answer the initial question, and present the results.	CR, PA, O
C.4.3 Select multiple sources of information to help answer questions selected for classroom investigations*	Identify multiple sources of information that can be used to help answer questions. Compare information from multiple sources.	SR, CR, PA, O
C.4.4 Use simple science equipment including rulers, balances, graduated cylinders, hand lenses, thermometers, and computers safely and effectively to collect data relevant to questions and investigations*	Identify the various pieces of science equipment used in the investigation. Use science equipment appropriately and safely to collect data and carry out the investigations.	PA, O
C.4.5 Use data they have collected to develop explanations* and answer questions generated by investigations*	Answer science questions and write explanations using supportive evidence relating to their investigation.	SR, PA, O
C.4.6 Communicate the results of their investigations* in ways their audiences will understand by using charts, graphs, drawings, written descriptions, and various other means	Communicate information and data from the investigation in ways that the audience will understand using charts, graphs, drawings, written descriptions, etc.	CR, PA
C.4.7 Support their conclusions with logical arguments	Use key vocabulary, information from observations, and data collected to support conclusions.	SR, CR, PA, O
C.4.8 Ask additional questions that might help focus or further an investigation*	Understand that questions lead to investigations. Ask questions that will allow for the collection of data to add to the investigation. Understand that investigations may lead to further questions.	CR, PA, O
F.4.1 Discover* how each organism meets its basic needs for water, nutrients, protection, and energy* in order to survive	Identify the three major functions of the skeletal system and the main function of the muscular system. Explain how movement in the human body is aided and limited by bone and joint structure.	SR, CR, PA, O

Course Title: Human Body **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

Unit Title/Number: Human Body	**Timeline: Mid January – End of March**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
F.4.2 Investigate* how organisms, especially plants, respond to both internal cues (the need for water) and external cues (changes in the environment)	Describe how hands and feet move in response to visual and non-visual stimulus.	SR, CR, PA, O
F.4.4 Using the science themes*, develop explanations* for the connections among living and nonliving things in various environments	Describe the interdependence that exists between people and their environment.	SR, CR
G.4.3 Determine what science discoveries have led to changes in technologies that are being used in the workplace by someone employed locally	Give examples of ways that people have used technology to change their living conditions as related to the local environment or in current events in the state, nation, or world.	SR, CR
H.4.1 Describe* how science and technology have helped, and in some cases hindered, progress in providing better food, more rapid information, quicker and safer transportation, and more effective health care	Explain how science and technology has improved the health of people around the world.	SR, CR
H.4.3 Show* how science has contributed to meeting personal needs, including hygiene, nutrition, exercise, safety, and health care	Describe how advances in health care have helped people lead healthier lives.	SR, CR
H.4.4 Develop* a list of issues that citizens must make decisions about and describe* a strategy for becoming informed about the science behind these issues	Identify health related issues (for example, how nutrition effects bone health) and evaluate possible decisions people can make regarding those issues.	SR, CR

Course Title: Physics of Sound **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

What concepts do I want students to remember from this unit? (Essential Questions)

- How do people discriminate between sounds using the properties of sound?
- How does sound travel from a source to a receiver?

Unit Title/Number: Physics of Sound	**Timeline: Beginning of April – End of May**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
A.4.1 When conducting science investigations*, ask and answer questions that will help decide the general areas of science being addressed	Conduct science investigations and identify the general areas of science being addressed. (for example, knowing that studying the properties of sound is physical science).	SR, CR, PA, O
A.4.3 When investigating* a science-related problem, decide what data can be collected to determine the most useful explanations*	Ask and answer questions about investigations. Identify, collect, and evaluate appropriate data.	SR, CR, PA, O
A.4.2 When faced with a science-related problem, decide what evidence*, models*, or explanations* previously studied can be used to better understand* what is happening now and in the future	Conclude that previously studied evidence can be used to understand what's happening now.	CR, PA, O
A.4.5 When studying a science-related problem, decide what changes* over time are occurring or have occurred	Describe patterns observed during investigations. Identify change or lack of change over time.	CR, PA, O
B.4.1 Use encyclopedias, source books, texts, computers, teachers, parents, other adults, journals, popular press, and various other sources, to help answer science-related questions and plan investigations	Demonstrate that answers to questions can be found in a variety of resources. Determine best sources for answers to different questions.	SR, CR, PA, O
B.4.2 Acquire information about people who have contributed to the development of major ideas in the sciences and learn about the cultures in which these people lived and worked	Identify careers relating to science and the study of sound. Identify scientists from around the world who have contributed to major ideas in science.	SR, CR
B.4.3 Show* how the major developments of scientific knowledge in the earth and space, life and environmental, and physical sciences have changed	Describe how the study of sound has changed over time.	SR, CR, O

Unit Title/Number: Physics of Sound	**Timeline: Beginning of April – End of May**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
over time		
C.4.1 Use the vocabulary of the unifying themes* to ask questions about objects, organisms, and events being studied	Create explanations and provide examples using vocabulary associated with the physics of sound. Use science vocabulary when asking questions.	SR, CR, PA, O
C.4.2 Use the science content being learned to ask questions, plan investigations*, make observations*, make predictions*, and offer explanations*	Use science content to plan and conduct an investigation and build explanations by observing, communicating, comparing, and organizing.	SR, CR, PA, O
C.4.3 Select multiple sources of information to help answer questions selected for classroom investigations*	Select proper sources for information. Answer questions using multiple sources of information.	SR, CR, PA, O
C.4.4 Use simple science equipment including rulers, balances, graduated cylinders, hand lenses, thermometers, and computers safely and effectively to collect data relevant to questions and investigations*	Select and use appropriate science tool for task.	SR, CR, PA, O
C.4.5 Use data they have collected to develop explanations* and answer questions generated by investigations*	Interpret data to explain and answer questions.	CR, PA
C.4.6 Communicate the results of their investigations* in ways their audiences will understand by using charts, graphs, drawings, written descriptions, and various other means	Analyze various methods of communication (chart, etc). Choose appropriate method to communicate the results of the investigation.	CR, PA, O
C.4.7 Support their conclusions with logical arguments	Use evidence to defend conclusions.	CR, PA, O
C.4.8 Ask additional questions that might help focus or further an investigation*	Understand that questions lead to investigations. Propose questions that will allow for the collection of data to add to the investigation. Understand that investigations may lead to further questions.	CR, PA, O

Course Title: Physics of Sound **ECASD Curriculum Map** Date: 2008

Subject: Science Grade Level (s): 4

Assessment types: SR = Selected Response CR = Constructed Response PA = Performance Assessment O = Observation

Unit Title/Number: Physics of Sound	**Timeline: Beginning of April – End of May**	
What are the Wisconsin Model Academic Performance Standards this unit is based on?	**What do I expect students to know and be able to do at the end of this unit? In other words, students will be able to… (Student Learning Targets)**	**What assessment types are best to measure each student-learning target? (Assessment Types)**
D.4.8 Ask questions and make observations to discover* the differences between substances that can be touched (matter) and substances that cannot be touched (forms of energy, light, heat, electricity, sound, and magnetism)	Investigate the properties of sound waves as they interact with different objects. Explain how sound is produced by vibrating objects. Explain how to vary the pitch of a sound by varying the rate of vibration. Explore that sound needs a medium in which to travel (solid, water, or gas).	CR, PA, O
G.4.1 Identify* the technology used by someone employed in a job or position in Wisconsin and explain* how the technology helps	Explain how the physics of sound can be used in various careers and why it is important to those careers.	SR, CR
G.4.2 Discover* what changes in technology have occurred in a career chosen by a parent, grandparent, or an adult friend over a long period of time	Explain how technological discoveries in sound production have changed over time.	SR, CR
G.4.3 Determine what science discoveries have led to changes in technologies that are being used in the workplace by someone employed locally	Describe how science discoveries in the physics of sound have lead to changes in the workplace.	SR, CR
G.4.5 Ask questions to find answers about how devices and machines were invented and produced	Ask questions that help find answers about how devices using sound were invented or created.	SR, CR
H.4.3 Show* how science has contributed to meeting personal needs, including hygiene, nutrition, exercise, safety, and health care	Explain how the understanding of physics of sound have contributed to meeting health care needs (hearing aids).	SR, CR