

CRM 1 Inquiry

Pacing

- 14 days
- Aug. 27-Sept.14
- Week 1-3

DESIRED RESULTS

Making Meaning

The study of elementary science is multifaceted and requires a variety of student experiences to build understanding of the nature of science including the following:

- Understanding the nature and development of scientific knowledge.
- Participating safely and productively in scientific inquiry and discourse in lab and field experiences at varying degrees of independence.
- Knowing, using and interpreting scientific explanations of the natural world.
- Using scientific observations and tools to collect data to generate and evaluate evidence and explanations.

Transfer: Scientific literacy is established in learning to conduct an investigation and collect evidence from a variety of sources, develop an explanation from the data, and communicate findings.

Enduring Understandings:

- Scientists raise questions about the world around them and seek answers by careful observation and investigation.
- Scientists give reasons (evidence) for their claims and conclusions and consider reasons suggested by others.
- Scientists keep a notebook as a thinking tool and use questions, diagrams, charts, graphs, conclusions, and wonderings to record and share their thinking.
- Scientists use tools and safety measures to investigate the natural world.

Essential Questions:

- How do we raise questions and seek answers about the world around us?
- How do we record and share our observations, thinking, and conclusions in science?
- What tools and safety measures do scientists use to investigate the natural world?

Essential Vocabulary

- balance / balanza
- communicate / comunicar
- compare / comparar
- data / datos
- directions/instrucciones
- emergency/emergencia
- explain / explicar
- goggles/lentes de seguridad
- graph/gráfica
- hand lens / lupa
- hypothesis/hipótesis
- identify/ identificar
- investigate / investigar
- magnet /imán

- measure / medida
- notebook / cuaderno
- observe / observar
- pattern/patrón
- predict / predecir
- problem/ problema
- property/ propiedad
- question/ pregunta
- record/anotar
- results/resultado
- safety / seguridad
- scientist / científico
- solution/solución
- stopwatch / cronómetro
- thermometer/ termómetro

Supporting Vocabulary Link

- [Elementary School Supporting Vocabulary](#)

<p>Student Prerequisite Knowledge <i>Students should know:</i></p> <ul style="list-style-type: none"> • safe practices, apparel, and procedures in the classroom and out of doors. • questioning the world around us is natural. • there is more than one way to answer a question. • descriptive investigations involve data collection and analysis. • scientific equipment is used to collect data from observations. • pictures, numbers, graphs, and words can be used to record and make meaning of data. • predictions are based on observable patterns. • tools are used to make observations and collect data. • properties of matter may be observed and identified. • patterns exist in the natural world. 		
<p>Resources: AISD Module Kit, Model Lesson Portfolio, STEMscopes, eBooks: Envisions Science Leveled Readers, Scott Foresman Text, Science Notebook Resources</p>		
<p>ELPS: Mandated by Texas Administrative Code (19 TAC §74.4), click on the link for English Language Proficiency Standards (ELPS) to support English Language Learners.</p>		
<p>TEKS Knowledge & Skills Acquisition <i>Important knowledge and skills</i></p>		
<p>STAAR: RC = Reporting Category; DC = Dual Coded Skills; Readiness Standard; Supporting Standard Concepts are addressed in another unit.</p>	<p>Students Will Know</p>	<p>Students Will Be Able To</p>
<p>1.1 Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures and uses environmentally appropriate and responsible practices. The student is expected to:</p>		
<p>1.1A: recognize and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately;</p>	<ul style="list-style-type: none"> • Know safe practices in the classroom and out of doors. • Know appropriate safety apparel and procedures. 	<ul style="list-style-type: none"> • Follow classroom, lab, and outdoor safety procedures.
<p>1.1B: recognize the importance of safe practices to keep self and others safe and healthy;</p>	<ul style="list-style-type: none"> • Know the importance of safe practices. 	<ul style="list-style-type: none"> • Describe the importance of safety practices.
<p>1.1 C: identify and learn how to use natural resources and materials, including conservation and reuse or recycling of paper, plastic, and metals.</p>	<ul style="list-style-type: none"> • Know appropriate procedures for disposal, recycling, and conservation of materials. 	<ul style="list-style-type: none"> • Identify natural resources that are recyclable. • Dispose of or recycle materials in their daily life.
<p>1.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:</p>		
<p>1.2A: ask questions about organisms, objects, and events observed in the natural world;</p>	<ul style="list-style-type: none"> • There is more than one way to answer a question. 	<ul style="list-style-type: none"> • Describe, plan, and implement investigations.
<p>1.2B: plan and conduct simple descriptive investigations such as ways objects move;</p>	<ul style="list-style-type: none"> • Descriptive investigations involve data collection and analysis. 	<ul style="list-style-type: none"> • Ask well-defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology.

1.2C: collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools;	<ul style="list-style-type: none"> • Scientific equipment is used to collect data from observations. • A balance is used to measure mass. 	<ul style="list-style-type: none"> • Collect data and make observations. • Measure using a primary balance and non-standard measurement tools. • Use a hand lens to make observations.
1.2D: record and organize data using pictures, numbers, and words	<ul style="list-style-type: none"> • Pictures, numbers, graphs, and words can be used to record data. 	<ul style="list-style-type: none"> • Record and organize data using pictures, numbers, graphs, and words.
1.2E: communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations.	<ul style="list-style-type: none"> • Explanations are justified by evidence. 	<ul style="list-style-type: none"> • Communicate observations about investigations and provide evidence from data.
1.3 Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:		
1.3A: identify and explain a problem such as finding a home for a classroom pet and propose a solution in his/her own words;	<ul style="list-style-type: none"> • Empirical evidence, logical reasoning, and testing are used to critique scientific explanations. 	<ul style="list-style-type: none"> • Identify and explain a problem, then propose a solution.
1.3B: make predictions based on observable patterns;	<ul style="list-style-type: none"> • Predictions are based on observable patterns. 	<ul style="list-style-type: none"> • Describe patterns and relationships, and predict what will happen next.
1.3C: describe what scientists do.	<ul style="list-style-type: none"> • Scientists investigate the world around them. • Scientists have many different areas of focus. 	<ul style="list-style-type: none"> • Describe what scientists do.
1.4 Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:		
1.4A: collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as classroom demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as aquariums and terrariums; and	<ul style="list-style-type: none"> • Many types of tools can be used to collect, record, and compare information. • Science Notebooks are used to communicate in science. 	<ul style="list-style-type: none"> • Use tools and materials to investigate, record and compare the natural world.
1.4B: measure and compare organisms and objects using non-standard units.	<ul style="list-style-type: none"> • Organisms and objects can be measured and compared. 	<ul style="list-style-type: none"> • Measure organisms and compare organisms and objects.

ASSESSMENT EVIDENCE	
Student Work Products/Assessment Evidence	
Performance Tasks	Other Evidence (i.e. unit tests, open ended exams, quiz, essay, student work samples, observations, etc.)
<ul style="list-style-type: none"> • Water Explorations Labs: Questioning, Observing, Communicating • Water Exploration Lab: Collecting Data Full Inquiry With Water • Water as Magnifiers Lab • Moving Water Lab • Data Analysis from Moving Water Lab • Full Inquiry Descriptive Investigation Using Planner 	<ul style="list-style-type: none"> • Investigating with Science Tools • Understand and use safety rules and tools • Orally identify science tools and their uses • Drawings of tools/use in the Science Notebook • Set Up Science Notebook • Drawings, graphic representations, and words in Science Notebooks. • Class Chart Observations • Teacher Observations • Safety Pictures • Water Investigations, Lab Drawings and Science Notebook entries • T-chart Classifying Floating & Sinking Objects • Sink and Float Investigation Student Sheet • Changing Water Recording Sheet
LESSON PLANNING TOOLS	
<p>In the course of lesson planning, it is the expectation that teachers will include whole child considerations when planning such as differentiation, special education, English language learning, dual language, gifted and talented, social emotional learning, physical activity, and wellness.</p>	
<p>Model Lesson- Inquiry</p> <ul style="list-style-type: none"> • How Do We Do the Work Of Scientists? • Investigating Water • Water Affects Matter <p>Suggested Pacing: (14 days) TEKS: 1.1, 1.2, 1.3, 1.4</p>	