

CRM 2 Science Matters

Pacing

- 20 days
- Sept.17-Oct. 12
- Week 4-7

DESIRED RESULTS

Making Meaning

The study of matter and energy can be used to explain and predict a large variety of phenomena. These concepts build a foundation for various strands of secondary science including: Atoms and Molecules, Conservation of Matter, States of Matter, and Chemical Reactions. In addition, understanding physical properties of matter helps students understand concepts in Earth, space, and life science.

The following make meaning valuable for learners and are investigated in this unit:

- Matter may be described by its physical properties (color, size, shape, mass, texture, flexibility, etc.) and the materials it is made of.
- Most objects are made of parts that work together and operate differently than the parts themselves.
- Some materials have similar properties, but also have distinct properties.
- Materials are made of particles that are too small to be seen without magnification.
- Heating and cooling cause changes to the properties of materials.
- Most substances can exist as a solid, liquid, or gas depending on the amount of heat energy.

Transfer: Students will use inquiry to investigate physical properties of matter and use these properties to describe and communicate their thinking. They will predict and test how heating and cooling can cause changes to matter. Students will use critical thinking skills and problem solving while working cooperatively to investigate changes to water through heating and cooling.

Enduring Understandings:

- All matter can be measured, classified, and changed.
- Energy causes changes in the properties of matter.

Essential Questions:

- How do we describe, and compare matter?
- What causes the properties of matter to change?

Essential Vocabulary

- change/cambio
- classify / clasificar
- evaporate / evaporar
- color/color
- evaporate/evaporar
- freeze / congelar
- heat/calor
- heavier/más pesado
- larger / más grande
- ice / hielo
- larger/más grande
- lighter/liviano
- liquid / líquido

- matter / materia
- melt / derretir
- precipitation / precipitación
- properties/propiedad
- shape/forma
- solid/sólido
- state of matter / estado de la materia
- temperature /temperatura
- texture/textura
- water vapor / vapor de agua

Supporting Vocabulary Link

- [Elementary School Supporting Vocabulary](#)

Student Prerequisite Knowledge

Students should know:

- properties of matter may be observed, measured and used to compare objects.
- matter has properties we can observe including relative size and mass, shape, color and texture.
- matter can change by adding and removing heat energy.

Resources: AISD Module Kit, Model Lesson Portfolio, STEMscopes , eBooks: Envisions Science Levelled Readers, Scott Foresman Text, Science Notebook Resources , BrainPop Jr. , Discovery Education		
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.		
TEKS Knowledge & Skills	Acquisition <i>Important knowledge and skills</i>	
STAAR: RC = Reporting Category; DC = Dual Coded Skills; Readiness Standard ; Supporting Standard Concepts are addressed in another unit.	Students Will Know	Students Will Be Able To
1.5 Matter and energy. The student knows that objects have properties and patterns. The student is expected to:		
1.5A: classify objects by observable properties of the materials from which they are made such as larger and smaller, heavier and lighter, shape, color, and texture;	<ul style="list-style-type: none"> • Matter can be classified in many different ways. • Matter can be classified by its properties including relative size and mass, shape, color, and texture. 	<ul style="list-style-type: none"> • observe properties of materials. • classify objects by the physical properties of relative size, relative mass, shape, color, and texture.
1.5B: predict and identify changes in materials caused by heating and cooling such as ice melting, water freezing, and water evaporating.	<ul style="list-style-type: none"> • Melting occurs when a solid is heated and changes to a liquid. • Freezing occurs when a liquid is cooled and changes to a solid. • Evaporation occurs when a liquid is heated and changes from to a gas. • Matter changes states by adding and removing heat energy. • Most of our heat energy on Earth comes from the Sun. 	<ul style="list-style-type: none"> • Identify properties of solids and liquids. • Classify matter by state. • Predict and identify changes to solids caused by heating and cooling. • Predict and identify changes to liquids by heating and cooling. • Observe and describe the pattern of change to matter when it is heated and cooled.
<p>The study of science is taught through the lens of Scientific Processes (TEKS 1.1-1.4); therefore, these TEKS should be taught in conjunction with content throughout the year. Suggestions for TEKS to embed in each unit are provided in the Yearly Itinerary; however, the TEKS that can be addressed within a unit depends greatly on the learning activities in which students are engaged. Therefore, teachers must be deliberate in their choice of learning activities to ensure that all Scientific Processes TEKS are appropriately embedded within the course. In 1st grade, districts are encouraged to facilitate laboratory and field investigations for at least 80% of instructional time.</p>		

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"> • Observations, Classifications, and Comparisons of Matter • Balance Lab • Liquid Labs: Observing, Communicating, and Classifying • Senses Stations • Comparing Solids Lab • Comparing Solids and Liquids Lab • Oobleck Lab • Writing With Ice Lab • Evaporation Lab • Thermometer Lab • Melting Ice Game • Solar Energy Labs • Ice Cream Lab • Frozen Liquids Lab 	<ul style="list-style-type: none"> • Science Notebook Records • Venn Diagrams • Recording Data of Matter • Visual Mapping Activity for Matter • Solids and Liquids Foldable • Kidspiration 3 activity “Solids and Liquids” • Oobleck Recording Sheet • Senses Stations Student Sheet • Comparing Solids Venn Diagram • SF Science Lab Manual, p. 44 • SF Science Lab Manual, p. 53 • Solids and Liquids Foldable • Comparing Solids and Liquids Venn Diagram • How Can You Keep an Ice Cube Frozen? Student Sheet • What We Know About Water Student 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- Properties of Matter</p> <ul style="list-style-type: none"> • Classifying Matter <p>Suggested Pacing: (5 days) TEKS: 1.5A</p>
<p>Model Lesson- Heating and Cooling</p> <ul style="list-style-type: none"> • States of Matter • Cooling • Heating <p>Suggested Pacing: (15 days) TEKS: 1.5B</p>