

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

- big / grande
- bigger/más grande
- cold / frío(a)
- cooling / enfriamiento
- color / color
- compare/comparar
- cooling/enfriamiento
- feel / sentido del tacto
- float/ flotar
- freeze / congelar
- hard / duro(a)
- heating / calentamiento
- heavy / pesado
- hot / caliente
- light/ligero
- lighter/ mas ligero

- longer/ más largo
- magnetic/ magnético
- manmade/ hecho por el hombre
- mass/masa
- melt / derretir
- natural/ natural
- nose / nariz
- property/propiedad
- record/
- shape/forma
- shorter/ más corto
- sink/ hundirse
- size/ tamaño
- smaller/mas pequeño
- texture/textura

Supporting Vocabulary Link

- [Elementary School Supporting Vocabulary](#)

Student Prerequisite Knowledge

Students should know:

- We can observe properties with our senses and with tools.
- Matter is all around us.
- Not all matter is alike.
- Matter can be compared: (heavy/light, bigger/smaller, shape, color, and texture.)

Resources: AISD Module Kit, Model Lesson Portfolio, STEMscopes , eBooks: Envisions Science Leveled 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	
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
K.5 Matter and energy. The student knows that objects have properties and patterns. The student is expected to:		
K.5A: observe and record properties of objects, including relative size and mass, such as bigger or smaller and heavier or lighter, shape, color, and texture.	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Observe and record properties of matter (pictorial and using words). Use a primary balance and non-standard measurements to describe size and mass.
K.5B: observe, record, and discuss how materials can be changed by heating or cooling.	<ul style="list-style-type: none"> Matter can change by adding and removing heat energy. 	<ul style="list-style-type: none"> Observe, record, and discuss how materials can be changed by heating or cooling (pictorial and using words).
<p>The study of science is taught through the lens of Scientific Processes (TEKS K.1-K.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 Kindergarten, 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"> Properties of Matter Lab Sorting Labs Heavy or Light Lab Sorting Natural or Man-Made Lab Sinking and Floating Lab Magnet Exploration Lab Length Lab Heating Lab Cooling Lab Ice Lab Freezing Solids and Liquids Lab Ice Balloons Lab 	<p>Additional Suggestions for Assessment</p> <ul style="list-style-type: none"> Student writings, drawings, digital pictures, and oral observations of properties and patterns. Digital pictures, rubbings, drawings of objects by property. Kidspiration or mapping/graphic organizer of properties of matter with examples. Line-up of objects by size, mass, color intensity, and texture. Student writings, drawings, digital pictures/movies and oral observations of how materials change through heating and cooling. Sorting exercise/foldable of hot & cold pictures. 	

LESSON PLANNING TOOLS

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.

Model Lesson- [*Let's compare Properties of Matter*](#)

- Comparing Properties of Matter
- Suggested Pacing: (10 days)
TEKS: K.5A

Model Lesson- [*Heating and Cooling*](#)

- Heating and Cooling Matter
- Suggested Pacing: (10 days)
TEKS: K.5B