GRADE 6 - Unit 02 Physical Properties of Matter (17 Days)

2010 TEKS		1998 TEKS		Curriculum and Instruction Considerations
6.6	**The student knows matter has physical properties that can be used for classification.**	6.7	**The student knows that substances have physical and chemical properties.**	

6.6A	**Compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity or malleability.**
	
	Compare
	
	METALS, NONMETALS, AND METALLOIDS USING PHYSICAL PROPERTIES
	
	Including, but not limited to:
	• properties used to classify elements as metals, nonmetals, and metalloids
	  • luster
	  • conductivity
	  • malleability
	  • magnetism
	  • ductility
	  • state of matter
	
	CCRS Note:
	• VII. Chemistry – A1 – Know that physical and chemical properties can be used to describe and classify matter.
	• VII. Chemistry – C1 – Know the organization of the periodic table. (CCRS mentions the absence of the periodic table from 6th grade)
	• VII. Chemistry – D1 – Characterize ionic bonds, metallic bonds, and covalent bonds, Describe the properties of metals and ionic and covalent compounds. (Introduce bonding in 6th grade.)
		6.7B	**Classify substances by their physical and chemical properties.**
			
			Classify
			
			PHYSICAL AND CHEMICAL PROPERTIES
			
			Including, but not limited to:
			• physical properties
			• color
			• shape
			• texture
			• density
			• density=mass/volume
			• chemical properties
			• reactivity
			• flammability (burns)
			• oxidation
			• rust
			• tarnish
				Key Understandings
				• Metals and nonmetals have specific properties which determine what they are and how they act.
				• Metalloids are substances that may exhibit some properties of metals as well as some of nonmetals.
				
				Performance Indicator(s)
				• Compare a sample of a metal, a nonmetal, and a metalloid using physical properties including luster, conductivity, malleability, magnetism, ductility, state of matter, and calculate the density of each sample. Display the results in a three flap flip book. (6.1A, 6.2A,C,D,E; 6.4A; 6.6A,B)
				
				Lesson Cycle – **For this TEKS, reference 7th grade, Unit 11, Lesson 01 Physical Properties and the Periodic Table
				
				Engage
				• Use pg 3 What's the Pattern
				Explore
				• Use pgs 3-4 Stations
				Explain
				• Use pg 4 Physical Properties. Include the physical properties of metalloids on pg 11
				
				New content for this grade.
				
				Explore
				• Conduct a density lab where students

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				determine the mass and volume of 3 solid objects. **Explain** • Explain how to calculate density using the results from the explore activity. **Elaborate** • Test an unknown metal and nonmetal and calculate their density. Use that property to identify them. **Evaluate** • Performance Indicator
6.6B	**Calculate density to identify an unknown substance.** Calculate DENSITY Including, but not limited to: • using water displacement to determine the volume of an irregularly shaped object • using l x w x h, measure and calculate the volume of a cube • using D = m/v, calculate density of objects CCRS Note: VIII. Physics – A4 – Understand the concept of density.			
6.6C	**Test the physical properties of minerals including hardness, color, luster, and streak.** Test PHYSICAL PROPERTIES OF MINERALS Including, but not limited to: • hardness			**New content for this grade.** **Key Understanding(s):** • A substance has characteristic properties, such as density, which are independent of the amount of the sample • Minerals can be classified by their physical properties. **Performance Indicator:**

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	• color • luster • streak CCRS Note: VII. Chemistry – A1 – Know that physical and chemical properties can be used to describe and classify matter.			• Test the physical properties including hardness, color, luster, and streak and calculate the density of an unknown mineral. Record the results in a double T-chart. (6.1A; 6.2A,C,D,E; 6.6B,C) **Engage:** • Show samples or pictures of a variety of minerals. Ask how these samples could be identified. **Explore/Explain** • Demonstrate how to do a streak test, and qualify properties such a luster, color, streak, and hardness. Students will test several minerals and record their observations. **Elaborate/Evaluate** • Performance Indicator

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