

PRESCOTT UNIFIED SCHOOL DISTRICT

District Instructional Guide

Date Revised: 6/1/2015

Grade Level: 8th	Subject: Science	Time: All Year	Core Text: Prentice Hall
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Time	Topic	Content (Nouns)	Skills (Verbs)	Standards
1st,2nd, 3rd, 4th Quarters	Inquiry Process History and Nature of Science Science in Personal and Social perspectives	Observations, questions, and hypotheses Scientific testing, investigating and modeling Analysis and conclusions Communication History of science as a human endeavor Nature of scientific knowledge Changes in environments Science and technology in society	Formulate predictions, questions or hypothesis based on observations. Locate appropriate resources. Design and conduct controlled investigations. Analyze and interpret data to explain correlations and results. Formulate new questions. Communicate results of investigations. Identify individual, cultural, and technological contributions to scientific knowledge. Understand how science is a process for generating knowledge. Describe the interactions between human populations, natural hazards and the environment. Develop viable solutions to a need or problem.	SCIENCE: S1C1PO1-3 S1C2PO1-5 S1C3PO1-7 S1C4PO1-5 S2C1PO1-4 S2C2PO1-3 S3C1PO1-3 S3C2PO1-4 AZCCR: ELA: RST.6-8.1 RST.6-8.2 RST.6-8.3 RST.6-8.4 RST.6-8.6 RST.6-8.7 RST.6-8.10 WHST.6-8.10

PRESCOTT UNIFIED SCHOOL DISTRICT
District Instructional Guide
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Grade Level: 8th	Subject: Science	Time: Quarter 1	Core Text: Prentice Hall
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Time	Topic	Content (Nouns)	Skills (Verbs)	Standards
Weeks 1-9	Physics: Energy Newton's 3 Laws of Motion Motion and Forces	Metric Motion Reference point International System of Units Speed Velocity Slope Acceleration Friction Force Gravity Mass Weight Free fall Air resistance Terminal velocity Projectile Newton Inertia Momentum	Demonstrate velocity as the rate of change of position over time. Identify the conditions under which an object will continue in its state of motion (Newton's 1st Law of Motion). Describe how the acceleration of a body is dependent on its mass and the net applied force (Newton's 2nd Law of Motion). Describe forces as interactions between bodies (Newton's 3rd Law of Motion). Create a graph devised from measurements of moving objects and their interactions, including position time graphs and velocity-time graphs	SCIENCE: S5:C2:PO1-5 AZCCR: WHST.6-8.1 RH.6-8.5. 8.EE.3 8.EE.4 8.EE.5 8.F.4 8.F.5 8.SP.3

PRESCOTT UNIFIED SCHOOL DISTRICT

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		Law of conservation of momentum Satellite Centripetal force Pressure Pascal Fluid Barometer Buoyant force Archimedes' principle Pascal's principle Hydraulic system Bernoulli's principle Kinetic energy Potential energy Mechanical energy Chemical energy		
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PRESCOTT UNIFIED SCHOOL DISTRICT

District Instructional Guide

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Grade Level: 8th	Subject: Science	Time: Quarter 2	Core Text: Prentice Hall
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Time	Topic	Content (Nouns)	Skills (Verbs)	Standards
Weeks 1-9	Chemistry: Properties of Matter States of matter & phase changes Elements, Compounds & Mixtures Physical Changes of matter Chemical Changes of matter	Matter States of matter Boiling point Melting point Solubility Physical properties Chemical properties Endothermic, Exothermic Elements, Compounds Mixtures Homogeneous Heterogeneous Atom Metals, Nonmetals Metalloids Protons, Neutrons Electrons	Identify different kinds of matter based on the following physical properties: states, density, boiling point, melting point, and solubility. Classify matter in terms of elements, compounds, or mixtures. Classify mixtures as being homogeneous or heterogeneous.	SCIENCE: S5:C1:PO1-7 AZCCR: R.H.6-8.9 8.F.4

PRESCOTT UNIFIED SCHOOL DISTRICT

District Instructional Guide

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Grade Level: 8th	Subject: Science	Time: Quarter 3	Core Text: Prentice Hall
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Time	Topic	Content (Nouns)	Skills (Verbs)	Standards
Weeks 1-3	Chemistry: Organization of the Periodic Table Chemical Reactions Acids, Bases & pH Scale	Periodic Table Chemical symbols Chemical formulas Chemical reaction Energy levels Groups / families Periods Valence electron	Identify the following types of evidence that a chemical reaction has occurred: formation of a precipitate, generation of gas, color change, and absorption or release of heat (endothermic and exothermic). Explain the systematic organization of the periodic table (structure and forces of an atom, recognize and explain the chemical and physical properties of the eight groups of elements, describe the differences between metals, nonmetals, and metalloids, describe how chemical symbols and formulas are used in a chemical reaction)	SCIENCE: S5:C1:PO1-7 AZCCR: WHST.6-8.4 WHST.6-8.5 WHST.6-8.6 WHST.6-8.7 WHST.6-8.8 WHST.6-8.9 8.F.4
Weeks 4-9	Life Science: Cell Division, Meiosis, Reproduction and Heredity	Cell division DNA Meiosis Mitosis Reproduction Heredity Punnett square Blood type Dominant trait Recessive trait Generations	Explain the purposes of cell division through growth and repair (describe how genetic material is passed from parent to offspring and the role of DNA) and reproduction (e.g., meiosis, mitosis) Explain the basic principles of heredity using the human examples of eye color, widow's peak, and blood type. Distinguish between the nature of dominant and recessive trait in humans. Determine characteristics of organisms that could change over several generations.	SCIENCE: S4:C2:PO1-3 S4:C3:PO1-6 AZCCR: RH.6-8.8 WHST.6-8.2

PRESCOTT UNIFIED SCHOOL DISTRICT

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Grade Level: 8th	Subject: Science	Time: Quarter 4	Core Text: Prentice Hall
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Time	Topic	Content (Nouns)	Skills (Verbs)	Standards
Weeks 1-4	<p>Life Science: Cell Division, Meiosis, Reproduction and Heredity</p> <p>Adaptation, and Behavior: Identify structural and behavioral adaptations</p>	<p>Cell division DNA Meiosis Mitosis Reproduction Heredity Punnett square Blood type Dominant trait Recessive trait Generations Symbiotic Competitive Ecosystem Hibernation Migration Dormancy Protective coloration Beak design Seed dispersal Pollination</p>	<p>Explain the purposes of cell division through growth and repair (describe how genetic material is passed from parent to offspring and the role of DNA) and reproduction (e.g., meiosis, mitosis)</p> <p>Explain the basic principles of heredity using the human examples of eye color, widow’s peak, and blood type.</p> <p>Distinguish between the nature of dominant and recessive trait in humans.</p> <p>Determine characteristics of organisms that could change over several generations.</p> <p>Explain how an organism’s behavior allows it to survive in an environment.</p> <p>Describe how an organism can maintain a stable internal environment while living in a constantly changing external environment.</p> <p>Determine characteristics of organisms that could change over several generations.</p> <p>Compare the symbiotic and competitive relationships in organisms within an ecosystem (e.g., lichen, mistletoe/tree, clownfish/sea anemone, native/non-native species).</p> <p>Analyze the following behavioral cycles of organisms: hibernation, migration, and dormancy (plants).</p> <p>Describe the following factors that allow for the survival of living organisms: protective coloration, beak design, seed dispersal, and pollination.</p>	<p>SCIENCE: S4:C2:PO1-3 S4:C3:PO1-6</p> <p>AZCCR: RH.6-8.8 WHST.6-8.2</p>

PRESCOTT UNIFIED SCHOOL DISTRICT

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<p>Weeks 5-9</p>	<p>Marine Biology: ocean food webs plankton differences between marine organisms differences in ocean habitat Marine Organism research project</p>	<p>dissection food webs haloplankton meroplankton marine organisms ocean habitats</p>	<p>dissect compare/contrast marine organisms (anatomy, adaptations, habitat, food webs) research discover identify</p>	<p>SCIENCE: S3,C1,PO1 S4, S3C4,PO1,2,4, 6 AZCCR: 6-8.RST.10 6-8.WHST.7 6-8.WHST.8</p>
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