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| **SUGGESTED PACING** | | | | | | | | |
| **STRAND: PHYSICAL SCIENCE (PS)**  **Topic:** **Matter and Motion**  This topic focuses on the study of foundational concepts of the particulate nature of matter, linear motion, and kinetic and potential energy.  **Content Statements:**   * All matter is made up of small particles called atoms. * Each atom takes up space, has mass and is in constant motion. Mass is the amount of matter in an object. * Elements are a class of substances composed of a single kind of atom. * Molecules are the combination of two or more atoms that are joined together chemically. * Compounds are composed of two or more different elements. Each element and compound has properties, which are independent of the amount of the sample.   **Content Statements:**   * Changes of state are explained by a model of matter composed of atoms and/or molecules that are in motion. * When substances undergo changes of state, neither atoms nor molecules themselves are changed in structure. * Thermal energy is a measure of the motion of the atoms and molecules in a substance. * Mass is conserved when substances undergo changes of state.   **Content Statements:**   * There are two categories of energy: kinetic and potential. * Objects and substances in motion have kinetic energy. * Objects and substances can have energy as a result of their position (potential energy).   **Content Statements:**   * An object’s motion can be described by its speed and the direction in which it is moving. * An object’s position and speed can be measured and graphed as a function of time. | | | | | | | | |
| **PRINT RESOURCES** | | | **DIGITAL RESOURCES** | | | | | |
| *ScienceFusion*   * Unit 5, TE pages 439-500 * Unit 5, Lab Manual pages 362-408 * Unit 5, Assessment Guide pages 143-171 * Unit 6, TE pages 501-617 * Unit 6, Lab Manual pages 409-504 * Unit 6, Assessment Guide pages 172-209 | | | *ScienceFusion*   * Unit 5, Lesson 1 Digital Lesson * Unit 5, Lesson 2 Digital Lesson * Unit 5, Lesson 2 Virtual Lab * Unit 5, Lesson 3 Digital Lesson * Unit 5, Lesson 3 Virtual Lab * Unit 6, Lesson 1 Digital Lesson * Unit 6, Lesson 2 Digital Lesson | | | | | * Unit 6, Lesson 2 Virtual Lab * Unit 6, Lesson 3 Digital Lesson * Unit 6, Lesson 3 Virtual Lab * Unit 6, Lesson 4 Digital Lesson * Unit 6, Lesson 5 Digital Lesson * Unit 6, Lesson 6 Digital Lesson * Unit 6, Lesson 6 Virtual Lab |
| **SCIENCE AND ACADEMIC VOCABULARY** | | | | | | | | |
| Atom, Atomic Number, Boiling, Chemical Property, Chemical Symbol, Compound, Condensation, Degree, Density, Deposition, Electron, Element, Energy, Energy Transformation, Evaporation, Freezing, Gas, Heterogeneous, Homogeneous, Kinetic Energy, Kinetic Theory Of Matter, Law Of Conservation Of Energy, Liquid, Mass, Matter, Mechanical Energy, Melting, Mixture, Molecule, Motion, Neutron, Physical Property, Position, Potential Energy, Proton, Pure Substance, Reference Point, Solid, Speed, Sublimation, Temperature, Thermometer, Vector, Velocity, Volume, Weight | | | | | | | | |
| **DIFFERENTIATION** | | | | | **FIELD EXPERIENCE CONNECTIONS** | | | |
| Leveled Inquiry   * Unit 5 TE pages 442, 452, 468, 482 * Unit 6 TE pages 506, 518, 534, 552, 566, 582, 600   Response to Intervention   * Unit 5 TE page 443 * Unit 6 TE page 507   Differentiated Instruction (Basic, ELL, and Advanced)   * Unit 5 TE pages 455, 464, 471, 485 * Unit 6 TE pages 521, 537, 548, 555, 569, 585, 597, 603 | | | | |  | | | |
| **INQUIRY SKILLS** | | | | | | | | |
| * Analyzing Results * Applying Concepts * Building/Constructing Models * Classifying Objects/Substances * Comparing Results * Controlling Variables * Creating Models | * Creating Sketches * Creating/Constructing Graphs * Describing Events * Developing Procedures * Drawing Conclusions * Explaining Results * Following Written Directions | | | | | * Identifying Patterns * Making Inferences * Making Observations * Performing Calculations * Practicing Lab Techniques * Recording Data * Working Independently | | |
| **HANDS-ON INQUIRY AND APPLICATION** | | | | | | | | |
| * Unit 5, Lesson 1 Quick Lab 1: Setting Objects in Motion: LM pages 362-365 * Unit 5, Lesson 1 Quick Lab 2: Conservation of Energy: LM pages 366-368 * Unit 5, Lesson 1 Quick Lab 3: Bungee Jumping: LM pages 369-372 * Unit 5, Lesson 1 S.T.E.M. Lab 1: Designing a Simple Device: LM pages 373-382 * Unit 5, Lesson 2 Quick Lab 1: Exploring Temperature: LM pages 383-386 * Unit 5, Lesson 2 Quick Lab 2: Understanding Temperature Scales: LM pages 387-390 * Unit 5, Lesson 3 Quick Lab 1: Investigate Changing Positions: LM pages 391-394 * Unit 5, Lesson 3 Quick Lab 2: Create a Distance-Time Graph: LM pages 395-398 * Unit 5, Lesson 3 S.T.E.M. Lab 1: Investigate Average Speed: LM pages 399-408 * Unit 6, Lesson 1 Quick Lab 1: Mass and Weight: LM pages 409-410 * Unit 6, Lesson 1 Quick Lab 2: Finding Volume by Displacement: LM pages 411-412 * Unit 6, Lesson 1 Quick Lab 3: How Much Mass?: LM pages 413-417 * Unit 6, Lesson 1 Exploration Lab 1: Comparing Buoyancy: LM pages 418-430 * Unit 6, Lesson 2 Quick Lab 1: Comparing Two Elements: LM pages 431-432 * Unit 6, Lesson 2 Quick Lab 2: Observe Physical Properties: LM pages 433-436 * Unit 6, Lesson 2 Exploration Lab 1: Identifying an Unknown Substance: LM pages 437-446 * Unit 6, Lesson 3 Quick Lab 1: Model of an Atom: LM pages 447-450 * Unit 6, Lesson 3 Quick Lab 2: Comparing Earth’s Elements: LM pages 451-454 * Unit 6, Lesson 4 Quick Lab 1: Observing Mixtures: LM pages 455-458 * Unit 6, Lesson 4 Quick Lab 2: Identifying Elements and Compounds: LM pages 459-462 * Unit 6, Lesson 4 Exploration Lab 1: Investigating Separating Mixtures: LM pages 463-474 * Unit 6, Lesson 5 Quick Lab 1: Changing Volumes: LM pages 475-477 * Unit 6, Lesson 5 Quick Lab 2: Can Crusher: LM pages 478-481 * Unit 6, Lesson 6 Quick Lab 1: Investigating Conservation of Mass: LM pages 482-485 * Unit 6, Lesson 6 Quick Lab 2: Modeling Particle Motion: LM pages 486-489 * Unit 6, Lesson 6 Quick Lab 3: Boiling Water Without Heating It: LM pages 490-493 * Unit 6, Lesson 6 Exploration Lab 1: Changes of State: LM pages 494-504 * STEM: TE pages 594-597 | | | | | | | | |
| **ASSESSMENTS/PROGRESS MONITORING** | | | | | | | | |
| * Formative and Summative Assessment   + Unit 5, Lesson 1 – TE page 457   + Unit 5, Lesson 2 – TE page 473   + Unit 5, Lesson 3 – TE page 487   + Unit 6, Lesson 1 – TE page 523   + Unit 6, Lesson 2 – TE page 539   + Unit 6, Lesson 3 – TE page 557   + Unit 6, Lesson 4 – TE page 571   + Unit 6, Lesson 5 – TE page 487   + Unit 6, Lesson 6 – TE page 605 | | * Visual Summary and Lesson Review   + Unit 5, Lesson 1 – TE page 463   + Unit 5, Lesson 2 – TE page 478   + Unit 5, Lesson 3 – TE page 494   + Unit 6, Lesson 1 – TE page 530   + Unit 6, Lesson 2 – TE page 546   + Unit 6, Lesson 3 – TE page 563   + Unit 6, Lesson 4 – TE page 579   + Unit 6, Lesson 5 – TE page 592   + Unit 6, Lesson 6 – TE page 612 | | | | | * Unit 5 Review – TE page 498-500 * Unit 6 Review – TE page 614-617 | |
| **ASSESSMENT GUIDE** | | | | | | | | |
| Unit 5   * Unit 5 Pretest: AG pages 143-144 * Lesson 1 Quiz: Introduction to Energy: AG page 145 * Lesson 1 Alternative Assessment: Introduction to Energy: AG page 146 * Lesson 2 Quiz: Thermal Energy and Temperature: AG page 147 * Lesson 2 Alternative Assessment: Thermal Energy and Temperature: AG page 148 * Lesson 3 Quiz: Motion and Speed: AG page 149 * Lesson 3 Alternative Assessment: Motion and Speed: AG page 150 * Performance-Based Assessment: Teacher Edition: AG page 151 * Performance-Based Assessment: Student Edition: AG pages 152-153 * Unit 5 Review: AG pages 154-157 * Unit 5 Test A: AG pages 158-164 * Unit 5 Test B: AG pages 165-171 | | | | Unit 6   * Unit 6 Pretest: AG pages 172-173 * Lesson 1 Quiz: Introduction to Matter: AG page 174 * Lesson 1 Alternative Assessment: Introduction to Matter: AG page 175 * Lesson 2 Quiz: Properties of Matter: AG page 176 * Lesson 2 Alternative Assessment: Properties of Matter: AG page 177 * Lesson 3 Quiz: Atoms and Elements: AG page 178 * Lesson 3 Alternative Assessment: Atoms and Elements: AG page 179 * Lesson 4 Quiz: Pure Substances and Mixtures: AG page 180 * Lesson 4 Alternative Assessment: Pure Substances and Mixtures: AG page 181 * Lesson 5 Quiz: States of Matter: AG page 182 * Lesson 5 Alternative Assessment: States of Matter: AG page 183 * Lesson 6 Quiz: Changes of State: AG page 184 * Lesson 6 Alternative Assessment: Changes of State: AG page 185 * Performance-Based Assessment: Teacher Edition: AG pages 186 * Performance-Based Assessment: Student Edition: AG pages 187-188 * Unit 6 Review: AG pages 189-194 * Unit 6 Test A: AG pages 195-201 * Unit 6 Test B: AG pages 202-209 | | | | |
| **ACADEMIC CONNECTIONS TO OTHER DISCIPLINES:** | | | | | | | | |
| * Fine Arts Connection: TE page 456 * Space Science Connection: TE page 456 * Earth Science Connection: TE page 472 * History Connection: TE page 472 * Math Connection: TE page 486 * Physical Education Connection: TE page 486 * Do the Math: TE page 491 * Do the Math: TE pages 496: 497 * Astronomy Connection: TE page 522 * History/Language Arts Connection: TE page 522 * Do the Math: TE page 527 | | | | * Environmental Science Connection: TE page 538 * Earth Science Connection: TE page 538 * Do the Math: TE page 545 * History Connection: TE page 556 * Language Arts: TE page 556 * Earth Science Connection: TE page 570 * Math Connection: TE page 570 * Engineering Connection: TE page 586 * Chemistry Connection: TE page 586 * Technology Connection: TE 604 * Astronomy Connection: TE 604 | | | | |