|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SUGGESTED PACING** | | | | | |
| **STRAND: PHYSICAL SCIENCE (PS)**  **Topic:** **Light, Sound and Motion**  This topic focuses on the forces that affect motion. This includes the relationship between the change in speed of an object, the amount of force applied and the mass\* of the object. Light and sound are explored as forms of energy that move in predictable ways, depending on the matter through which they move.  **Content Statements:**   * The amount of change in movement of an object is based on the mass\* of the object and the amount of force exerted. * Movement can be measured by speed. The speed of an object is calculated by determining the distance (d) traveled in a period of time (t). * Earth pulls down on all objects with a gravitational force. Weight is a measure of the gravitational force between an object and the Earth. * Any change in speed or direction of an object requires a force and is affected by the mass\* of the object and the amount of force applied. | | | | | |
| **PRINT RESOURCES** | | | | **DIGITAL RESOURCES** | |
| *ScienceFusion*   * Grade 5 Ohio Test Prep Book pages 20-28 * Unit 6, All Lessons * Unit 6, TE pages 239A-282 * Unit 6, Inquiry Flip Chart pages 30-34 * Science and Engineering Leveled Readers:   + On-Level/Below Level: *How Do Forces Affect Motion?*   + Above Level: *International Space Station* | | | | *ScienceFusion*   * Unit 6, Lesson 1 Digital Lesson * Unit 6, Lesson 2 Digital Lesson * Unit 6, Lesson 3 Digital Lesson with Virtual Lab * Unit 6, Lesson 4 Digital Lesson with Virtual Lab | |
| **SCIENCE AND ACADEMIC VOCABULARY** | | | | | |
| Acceleration, Balanced Forces, Force, Friction, Gravity, Motion, Position, Speed, Unbalanced Forces, Velocity | | | | | |
| **DIFFERENTIATION** | | | | **FIELD EXPERIENCE CONNECTIONS** | |
| Basic (Extra Support)   * Unit 6 Response to Intervention - TE page 237K * Unit 6 TE pages 243, 246, 255, 256, 259, 260, 264   Advanced (Enrichment)   * Unit 6 TE pages 243, 246, 255, 256, 259, 260, 264 * Unit 6 STEM - Flipchart page 32, TE pages 237F, 271-272B   English Language Learners   * Unit 6 TE pages 237L-237M, 240, 242, 254, 258, 262 | | | | Cleveland Metroparks Zoo: Connections to Africa Program.  ***Program Details***: Students will explore African Elephant Crossing, focusing on how living things, including people, must share resources around them. The Zoo provides scientific tools that students can use during this inquiry-driven program. To prepare in advance please locate the Metroparks Zoo Trunk and Biomimicry Kits that are present in each CMSD K-8 building. Then attend the professional development session and complete teacher and student pre- and post-visit surveys.  For information contact: Sandy Hadgis 216-635-3379 or email: [sjh2@clevelandmetroparks.com](mailto:sjh2@clevelandmetroparks.com) | |
| **INQUIRY SKILLS** | | | | | |
| * Compare * Draw Conclusions * Experiment * Gather, Record, Display, or Interpret Data | * Identify and Control Variables * Measure * Observe | | | | * Plan and Conduct a Simple Investigation * Predict * Use Numbers |
| **HANDS-ON INQUIRY AND APPLICATION** | | | | | |
| * “Fast Walk, Slow Walk” (Flipchart page 30, TE pages 237D, 239A) * “Push or Pull” (Flipchart page 30, TE pages 237D, 239A) * “On a Roll” (Flipchart page 31, TE pages 237E, 253A) * “Make It Easier” (Flipchart page 31, TE pages 237E, 253A) * “How Do Forces Affect Motion?” (Flipchart page 33, TE pages 237G, 273A-274A) * “How Do Gravity and Friction Affect Motion?” (Flipchart page 34, TE pages 237H, 275A-278) | | | *Differentiated Inquiry*   * Unit 6, TE page 274A   + Identify Variables (Easy)   + Analyze Forces (Easy)   + Compare Data Displayed on Graphs (Average)   + Predict the Effect of Gravity (Challenging) * Unit 6, TE page 276A   + Explore Forces (Easy)   + Predict Forces (Easy)   + Analyze Forces (Average)   + Experiment with Static & Sliding Friction (Challenging) | | |
| **ASSESSMENTS/PROGRESS MONITORING** | | | **ASSESSMENT GUIDE** | | |
| * Sum it Up   + Unit 6, Lesson 1 - SE page 248, TE page 248   + Unit 6, Lesson 2 - SE page 266, TE page 266 * Brain Check and Apply Concepts   + Unit 6, Lesson 1 - SE pages 249-252, TE pages249-252   + Unit 6, Lesson 2 - SE pages 267-270, TE pages 267-270 * Unit 6 Review - TE pages 279-282 * Unit 6 Short Option Performance Assessment - TE page 281 | | | * Lesson Quiz   + Unit 6, Lesson 1 - page AG 56   + Unit 6, Lesson 2 - page AG 57   + Unit 6, Lesson 3 - page AG 58   + Unit 6, Lesson 4 - page AG 59 * Unit 6 Test and Performance Task with Long Option Rubric - pages AG 60-AG 66 | | |
| **ACADEMIC CONNECTIONS TO OTHER DISCIPLINES** | | | | | |
| ELA: Journeys   * Writing Connection - TE page 247 * Make Connections - TE page 252A   + Writing Connection - Write a Story (Average) * Writing Connection - TE page 257 * Writing Connection - TE page 263 * Make Connections - TE page 270A   + Writing Connection - Write an Explanation (Challenging) * Writing Connection - TE page 277 | | *Journeys Connections*   * Lesson 1   + Whole Group: Anchor Text: Package for Mrs. Jewls (T29)   + Whole Group: Reader’s Theater: Questioning Gravity (T39)   + Small Group: Vocabulary Reader: Sports & Motion (T63) | | | |
| MATH: Math Expressions   * Math Connection - TE page 244 * *Math Expressions Connections:*   + Unit 7 Lesson 6: Graph Ordered Pairs MX TE pages 594-596 * Make Connections - TE page 252A * Math Connection - Find Average Speed (Easy) * *Math Expressions Connections:*   + Unit 7 Lesson 6: Graph Ordered Pairs MX TE pages 594-596 * Math Connection - TE page 261 * *Math Expressions Connections:*   + Unit 1 Lesson 12: Real World Problems MX TE pages 88-90   + Unit 3 Lesson 8: Solve Real World Problems MX TE page 246   + Unit 3 Lesson 11: Solve Division Problems MX TE pages 265-266   + Unit 3 Lesson 12: Distinguish Multiplication from Division MX TE pages 270, 273   + Unit 4 Lesson 8: Multiply with Decimals Greater Than 1 MX TE page 349   + Unit 4 Lesson 11: Multiplication Practice MX TE pages 371-372   + Unit 5 Lesson 4: Interpret Remainders MX TE pages 410-412   + Unit 5 Lesson 5: Division Practice MX TE pages 419-420   + Unit 6 Lesson 1: Situation and Solution Equations for Addition and Subtraction MX TE pages 474-477   + Unit 6 Lesson 2: Situation and Solution Equations for Multiplication and Division MX TE pages 482-486   + Unit 6 Lesson 5: Language of Comparison Problems MX TE pages 504-508   + Unit 6 Lesson 6: Multiplicative Comparison Problems MX TE pages 512-516   + Unit 6 Lesson 7: Types of Comparison Problems MX TE pages 520-524 | | | | | |
| **ACADEMIC CONNECTIONS TO OTHER DISCIPLINES *cont.*** | | | | | |
| MATH: Math Expressions *cont.*   * *Math Expressions Connections cont.:*   + Unit 8 Lesson 1: Convert Metric Units of Length MX TE pages 612-614   + Unit 8 Lesson 2: Metric Units of Liquid Volume MX TE pages 619-620   + Unit 8 Lesson 3: Metric Units of Mass MX TE pages 625-626   + Unit 8 Lesson 4: Customary Units of Length MX TE page 632   + Unit 8 Lesson 5: Customary Measures of Liquid Volume MX TE page 638   + Unit 8 Lesson 6: Customary Units of Weight MX TE page 644 * Math Connection - TE page 265 * *Math Expressions Connections:*   + Unit 6 Lesson 11: Focus on Mathematical Practices MX TE page 552   + Unit 8 Lesson 7: Read and Make Line Plots MX TE pages 648-650 * Make Connections - TE page 270A * Math Connection - Solve Problems (Average) * *Math Expressions Connections:*   + Unit 1 Lesson 12: Real World Problems MX TE pages 88-90   + Unit 3 Lesson 8: Solve Real World Problems MX TE page 246   + Unit 3 Lesson 11: Solve Division Problems MX TE pages 265-266   + Unit 3 Lesson 12: Distinguish Multiplication from Division MX TE pages 270, 273   + Unit 4 Lesson 8: Multiply with Decimals Greater Than 1 MX TE page 349   + Unit 4 Lesson 11: Multiplication Practice MX TE pages 371-372   + Unit 5 Lesson 4: Interpret Remainders MX TE pages 410-412   + Unit 5 Lesson 5: Division Practice MX TE pages 419-420   + Unit 6 Lesson 1: Situation and Solution Equations for Addition and Subtraction MX TE pages 474-477   + Unit 6 Lesson 2: Situation and Solution Equations for Multiplication and Division MX TE pages 482-486   + Unit 6 Lesson 5: Language of Comparison Problems MX TE pages 504-508   + Unit 6 Lesson 6: Multiplicative Comparison Problems MX TE pages 512-516   + Unit 6 Lesson 7: Types of Comparison Problems MX TE pages 520-524   + Unit 8 Lesson 1: Convert Metric Units of Length MX TE pages 612-614   + Unit 8 Lesson 2: Metric Units of Liquid Volume MX TE pages 619-620   + Unit 8 Lesson 3: Metric Units of Mass MX TE pages 625-626   + Unit 8 Lesson 4: Customary Units of Length MX TE page 632   + Unit 8 Lesson 5: Customary Measures of Liquid Volume MX TE page 638 | | | | | |