

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:

- Light and sound are forms of energy that behave in predictable ways.
- Light travels and maintains its direction until it interacts with an object or moves from one medium to another and then it can be reflected, refracted or absorbed.
- Sound is produced by vibrating objects and requires a medium through which to travel. The rate of vibration is related to the pitch of the sound.

PRINT RESOURCES

ScienceFusion

- Grade 5 Ohio Test Prep Book pages 20-28
- Unit 7, All Lessons
- Unit 7, TE pages 285A-352
- Unit 7, Inquiry Flip Chart pages 35-41
- Unit 8, All Lessons
- Unit 8, TE pages 355A-392
- Unit 8, Inquiry Flip Chart pages 42-46
- Science and Engineering Leveled Readers:
 - On -Level/Below Level: *How Do We Use sound and Light?*
 - Above Level: *Light Technologies*

DIGITAL RESOURCES

ScienceFusion

- Unit 7, Lesson 1 Digital Lesson
- Unit 7, Lesson 2 Digital Lesson
- Unit 7, Lesson 3 Digital Lesson with Virtual Lab
- Unit 7, Lesson 4 Digital Lesson
- Unit 7, Lesson 5 Digital Lesson
- Unit 7, Lesson 6 Digital Lesson with Virtual Lab
- Unit 8, Lesson 1 Digital Lesson
- Unit 8, Lesson 2 Digital Lesson with Virtual Lab
- Unit 8, Lesson 3 Digital Lesson
- Unit 8, Lesson 4 Digital Lesson with Virtual Lab

SCIENCE AND ACADEMIC VOCABULARY

Chemical Energy, Circuit, Conductor, Electric Current, Electrical Energy, Energy, Frequency, Heat, Insulator, Kinetic Energy, Light, Mechanical Energy, Opaque, Parallel Circuit, Pitch, Potential Energy, Reflections, Refraction, Series Circuit, Static Electricity, Temperature, Thermal Energy, Translucent, Transparent, Volume, Wave, Prism

DIFFERENTIATION	FIELD EXPERIENCE CONNECTIONS
<p>Basic (Extra Support)</p> <ul style="list-style-type: none"> Unit 7 Response to Intervention - TE page 283K Unit 7 TE pages 287, 288, 294, 296, 304, 307, 309, 311, 319, 320, 322, 325, 332, 335, 337, 338 Unit 8 Response to Intervention - TE page 353K Unit 8 TE pages 357, 358, 360, 363, 365, 375, 378, 380 <p>Advanced (Enrichment)</p> <ul style="list-style-type: none"> Unit 7 TE pages 287, 288, 294, 296, 304, 307, 309, 311, 319, 320, 322, 325, 332, 335, 337, 338 Unit 7 STEM - Flipchart page 41, TE pages 283I, 347-348B Unit 8 TE pages 357, 358, 360, 363, 365, 375, 378, 380 Unit 8 STEM - Flipchart page 45, TE pages 353G, 385-386B <p>English Language Learners</p> <ul style="list-style-type: none"> Unit 7 TE pages 283L-283M, 286, 290, 293, 295, 306, 310, 318, 324, 333, 336 Unit 8 TE pages 353L-353M, 356, 364, 374, 376, 379 	<p>Cleveland Metroparks Zoo: Connections to Africa Program. Continues this quarter.</p> <p>AWIM Begins Straw Rockets, an interactive, project-based program, introduces fifth grade students to Science, Technology, Engineering and Math (STEM), and pairs classroom teachers with industry volunteers from Arconic. During this program, students explore, communicate and test their ideas, then draw their own conclusions based on gathered evidence.</p> <p>Register here: http://awim.sae.org/si/alcoa/register/</p> <p><u>Training</u></p> <ul style="list-style-type: none"> Date: Tuesday, April 18th Location: East Professional Center - 2nd Floor Cafeteria Time (you will choose one when you register): <ul style="list-style-type: none"> Session 1: 3:00 – 4:15 pm Session 2: 4:30 – 5:45 pm <p><u>Program Implementation</u></p> <ul style="list-style-type: none"> Program will take place in the classroom during two weeks of your choice between April 19th and May 18th <p><u>District-Wide Competition</u></p> <ul style="list-style-type: none"> Date: Friday, May 19th Location: East Professional Center Gymnasium Time: 11:00 am – 1:00 pm <p>*Individual classroom competitions will determine which student teams may attend the district-wide competition</p>
INQUIRY SKILLS	
<ul style="list-style-type: none"> Communicate Compare Draw Conclusions Experiment 	<ul style="list-style-type: none"> Formulate or Use Models Hypothesize Identify and Control Variables Infer Measure Observe Plan and Conduct a Simple Investigation Predict
HANDS-ON INQUIRY AND APPLICATION	

GRADE 5

QUARTER 4

- “Seeing Sound Energy” (Flipchart page 35, TE pages 283D, 285A)
- “Light Travels” (Flipchart page 35, TE pages 283D, 285A)
- “Where’s the Energy?” (Flipchart page 36, TE pages 283E, 303A)
- “Heating From Afar” (Flipchart page 36, TE pages 283E, 303A)
- “What Changes Can Energy Cause?” (Flipchart page 37, TE pages 283F, 315A-316A)
- “Static Cereal” (Flipchart page 38, TE pages 283G, 317A)
- “Invent a Use” (Flipchart page 38, TE pages 283G, 317A)
- “Test the Load” (Flipchart page 39, TE pages 283H, 331A)
- “High, Low, and Just Right” (Flipchart page 39, TE pages 283H, 331A)
- “How Does an Electric Circuit Work?” (Flipchart page 40, TE pages 283I, 345A-346A)
- “Good Vibrations” (Flipchart page 42, TE pages 353D, 355A)
- “Thick or Thin” (Flipchart page 42, TE pages 353D, 355A)
- “How Does Sound Travel Through Solids, Liquids, and Gases?” (Flipchart page 43, TE pages 353E, 371A-372A)
- “Coins in a Fountain” (Flipchart page 44, TE pages 353F, 373A)
- “Bending Light” (Flipchart page 44, TE pages 353F, 373A)
- “What Happens When Light is Reflected and Refracted?” (Flipchart page 45, TE pages 353H, 387A-388A)

Differentiated Inquiry

- Unit 7, TE page 316A
 - Compare Cookers (Easy)
 - Can You Cook With a Lightbulb? (Easy)
 - Design an Experiment (Average)
 - Design a Solar Cooker (Challenging)
- Unit 7, TE page 346A
 - Examine a Circuit (Easy)
 - Determine Sequence of Parts (Average)
 - Find Out More About Circuits (Average)
 - Compare Brightness (Challenging)
- Unit 8, TE page 372A
 - Scratch Instead of Tap (Easy)
 - Change a Tested Condition (Easy)
 - Construct a Second Drum (Average)
 - Loosen & Tighten the Surface of the Drum (Challenging)
- Unit 8, TE page 388A
 - Test More Angles (Easy)
 - Explore Curved Mirrors (Average)
 - Investigate Refraction (Average)
 - Explore Colors Produced in Dispersion (Challenging)

ASSESSMENTS/PROGRESS MONITORING	ASSESSMENT GUIDE		
<ul style="list-style-type: none"> • Sum it Up <ul style="list-style-type: none"> ○ Unit 7, Lesson 1 - SE page 298, TE page 298 ○ Unit 7, Lesson 2 - SE page 312, TE page 312 ○ Unit 7, Lesson 4 - SE page 326, TE page 326 ○ Unit 7, Lesson 5 - SE page 340, TE page 340 ○ Unit 8, Lesson 1 - SE page 366, TE page 366 ○ Unit 8, Lesson 3 - SE page 382, TE page 382 • Brain Check and Apply Concepts <ul style="list-style-type: none"> ○ Unit 7, Lesson 1 - SE pages 299-300, TE pages 299-300 ○ Unit 7, Lesson 2 - SE pages 313-314, TE pages 313-314 ○ Unit 7, Lesson 4 - SE pages 327-330, TE pages 327-330 ○ Unit 7, Lesson 5 - SE pages 341-344, TE pages 341-344 ○ Unit 8, Lesson 1 - SE pages 367-368, TE pages 367-368 ○ Unit 8, Lesson 3 - SE pages 383-384, TE pages 383-384 • Unit 7 Review - TE pages 349A-352 • Unit 7 Short Option Performance Assessment - TE page 351 • Unit 8 Review - TE pages 389A-392 • Unit 6 Short Option Performance Assessment - TE page 391 	<ul style="list-style-type: none"> • Lesson Quiz <ul style="list-style-type: none"> ○ Unit 7, Lesson 1 - page AG 67 ○ Unit 7, Lesson 2 - page AG 68 ○ Unit 7, Lesson 3 - page AG 69 ○ Unit 7, Lesson 4 - page AG 70 ○ Unit 7, Lesson 5 - page AG 71 ○ Unit 7, Lesson 6 - page AG 72 ○ Unit 8, Lesson 1 - page AG 80 ○ Unit 8, Lesson 2 - page AG 81 ○ Unit 8, Lesson 3 - page AG 82 ○ Unit 8, Lesson 4 - page AG 83 • Unit 7 Test and Performance Task with Long Option Rubric - pages AG 73-AG 79 • Unit 8 Test and Performance Task with Long Option Rubric - pages AG 84-AG 90 		
ACADEMIC CONNECTIONS TO OTHER DISCIPLINES			
<p>ELA: Journeys</p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 50%;"> <ul style="list-style-type: none"> • Writing Connection - TE page 292 • Writing Connection - TE page 297 • Writing Connection - TE page 302 • Writing Connection - TE page 305 • Writing Connection - TE page 323 • Make Connections - TE page 330A <ul style="list-style-type: none"> ○ Language Arts Connection - Find Word Origins (Easy) • Writing Connection - TE page 334 • Make Connections - TE page 344A <ul style="list-style-type: none"> ○ Writing Connection - Write a Story (Average) • Writing Connection - TE page 361 </td> <td style="vertical-align: top; width: 50%;"> <ul style="list-style-type: none"> • Writing Connection - TE page 362 • Writing Connection - TE page 369 • Writing Connection - TE page 377 • Make Connections - TE page 384A <ul style="list-style-type: none"> ○ Language Arts Connection - List Opaque, Transparent, and Translucent Materials and Objects (Easy) <p><i>Journeys Connections</i></p> <ul style="list-style-type: none"> • Lesson 1 <ul style="list-style-type: none"> ○ Whole Group: Anchor Text: Package for Mrs. Jewls (T29) ○ Whole Group: Reader's Theater: Questioning Gravity (T39) ○ Small Group: Vocabulary Reader: Sports & Motion (T63) </td> </tr> </table>		<ul style="list-style-type: none"> • Writing Connection - TE page 292 • Writing Connection - TE page 297 • Writing Connection - TE page 302 • Writing Connection - TE page 305 • Writing Connection - TE page 323 • Make Connections - TE page 330A <ul style="list-style-type: none"> ○ Language Arts Connection - Find Word Origins (Easy) • Writing Connection - TE page 334 • Make Connections - TE page 344A <ul style="list-style-type: none"> ○ Writing Connection - Write a Story (Average) • Writing Connection - TE page 361 	<ul style="list-style-type: none"> • Writing Connection - TE page 362 • Writing Connection - TE page 369 • Writing Connection - TE page 377 • Make Connections - TE page 384A <ul style="list-style-type: none"> ○ Language Arts Connection - List Opaque, Transparent, and Translucent Materials and Objects (Easy) <p><i>Journeys Connections</i></p> <ul style="list-style-type: none"> • Lesson 1 <ul style="list-style-type: none"> ○ Whole Group: Anchor Text: Package for Mrs. Jewls (T29) ○ Whole Group: Reader's Theater: Questioning Gravity (T39) ○ Small Group: Vocabulary Reader: Sports & Motion (T63)
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ACADEMIC CONNECTIONS TO OTHER DISCIPLINES cont.			

MATH: Math Expressions

- Math Connection - TE page 289
- *Math Expressions Connections:*
 - Unit 1 Lesson 4: Strategies for Comparing Fractions MX TE pages 26-32
- Math Connection - TE page 291
- *Math Expressions Connections:*
 - Unit 7 Lesson 3: Evaluate Expressions MX TE page 571
- Make Connections - TE page 300A
- Math Connection - Draw Conclusions (Easy)
- *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
 - Unit 8 Lesson 6: Customary Units of Weight MX TE page 644
- Math Connection - TE page 308
- *Math Expressions Connections:*
 - Unit 6 Lesson 1: Situation and Solution Equations for Addition and Subtraction MX TE pages 474-478
 - Unit 6 Lesson 2: Situation and Solution Equations for Multiplication and Division MX TE pages 482-486
 - Unit 6 Lesson 8: Equations and Parentheses MX TE pages 528-529
- Math Connection - TE page 321
- Make Connections - TE page 330A
- Math Connection - Calculate Lightning Strikes (Challenging)
- *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
 - Unit 8 Lesson 6: Customary Units of Weight MX TE page 644

ACADEMIC CONNECTIONS TO OTHER DISCIPLINES cont.

MATH: Math Expressions

- Math Connection - TE page 339
- *Math Expressions Connections:*
 - Unit 3 Lesson 14: Focus on Mathematical Practices MX TE pages 284-285
- Math Connection - TE page 359
- *Math Expressions Connections:*
 - Unit 8 Lesson 7: Read and Make Line Plots MX TE pages 648-650
- Math Connection - TE page 381
- *Math Expressions Connections:*
 - Unit 4 Lesson 1: Shift Patterns in Multiplication MX TE pages 294-302
 - Unit 4 Lesson 2: Patterns with Fives and Zeros MX TE pages 306-308
 - Unit 4 Lesson 3: Sharing Methods for Multiplication MX TE pages 312-314
 - Unit 4 Lesson 4: Multiply Two-Digit Numbers MX TE pages 318-322
 - Unit 4 Lesson 5: Practice Multiplication MX TE page 326
 - Unit 6 Lesson 2: Situation and Solution Equations for Multiplication and Division MX TE pages 482-486
- Make Connections - TE page 384A
- Math Connection - Explain a Camera's Settings Strikes (Challenging)