

**SUGGESTED PACING**

**SCIENCE INQUIRY AND APPLICATION**

**Content Statements:** During the years of grades 5-8, all students must use the following scientific processes, with appropriate laboratory safety techniques, to construct their knowledge and understanding in all science content areas:

- Identify questions that can be answered through scientific investigations
- Design and conduct a scientific investigation
- Use appropriate mathematics, tools and techniques to gather data and information
- Analyze and interpret data
- Develop descriptions, models, explanations and predictions
- Think critically and logically to connect evidence and explanations
- Recognize and analyze alternative explanations and predictions
- Communicate scientific procedures and explanations

**STRAND: EARTH AND SPACE SCIENCE (ESS)**

**Topic: Cycles and Patterns in the Solar System**

This topic focuses on the characteristics, cycles and patterns in the solar system and within the universe.

**Content Statements:**

- The solar system includes the sun and all celestial bodies that orbit the sun. Each planet in the solar system has unique characteristics.
- The distance from the sun, size, composition and movement of each planet are unique. Planets revolve around the sun in elliptical orbits. Some of the planets have moons and/or debris that orbit them. Comets, asteroids and meteoroids orbit the sun.

**PRINT RESOURCES**

*ScienceFusion*

- Unit 1, TE pages 1A-1M; 1-62
- Grade 5 Ohio Test Prep Book pages 1-11
- Unit 3, Lessons 2-3
- Unit 3, TE pages 121A-142A
- Unit 3, Inquiry Flip Chart pages 18-19
- Unit 3, Science and Engineering Levelled Readers:
  - On -Level/Below Level: *How Do the Sun, Earth, and Moon Move In Space?*
  - Above Level: *To the Moon*

**DIGITAL RESOURCES**

*ScienceFusion*

- Unit 1, Digital Lessons
- Unit 3, Lesson 2 Digital Lesson
- Unit 3, Lesson 3 Digital Lesson with Virtual Lab

**SCIENCE AND ACADEMIC VOCABULARY**

**Unit 1:** Accurate, Balance, Control, Evidence, Experiment, Investigation, Microscopic, Opinion, Scientific Methods, Spring Scale, Variable

**Unit 3:** Asteroid, Comet, Dwarf Planet, Planet, Solar System

**DIFFERENTIATION**

Basic (Extra Support)

- Unit 3 Response to Intervention - TE page 105K
- Unit 3 TE pages 123, 124, 129, 131, 133

Advanced (Enrichment)

- Unit 3 TE pages 123, 124, 129, 131, 133
- Unit 3 STEM - Flipchart page 21, TE pages 105H, 153-154B

English Language Learners

- Unit 3 TE pages 105L-105M, 122, 127, 130

**FIELD EXPERIENCE CONNECTIONS**

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**

- |                    |  |               |
|--------------------|--|---------------|
| • Classify/Order   | • Formulate or Use Models                    | • Model       |
| • Compare          | • Gather, Record, Display, or Interpret Data | • Observe     |
| • Draw Conclusions | • Measure                                    | • Use Numbers |

HANDS-ON INQUIRY AND APPLICATION	
<ul style="list-style-type: none"> <li>• “Make a Scale Model” (Flipchart page 18, TE pages 105E, 121A)</li> <li>• “First Sightings” (Flipchart page 18, TE pages 105E, 121A)</li> <li>• “How Can We Model the Sun and Planets?” (Flipchart page 19, TE pages 105F, 141A-142A)</li> </ul>	<p style="text-align: center;"><i>Differentiated Inquiry</i></p> <ul style="list-style-type: none"> <li>• Unit 3, TE page 142A                             <ul style="list-style-type: none"> <li>○ Make a Solar System Mobile (Easy)</li> <li>○ Model One of the Planets (Easy)</li> <li>○ Model Distances in the Solar System (Average)</li> <li>○ Record a Guided Tour of a Solar System Model (Challenging)</li> </ul> </li> </ul>
ASSESSMENTS/PROGRESS MONITORING	ASSESSMENT GUIDE
<ul style="list-style-type: none"> <li>• Sum it Up                             <ul style="list-style-type: none"> <li>○ Unit 3, Lesson 2 - SE page 134, TE page 134</li> </ul> </li> <li>• Brain Check and Apply Concepts                             <ul style="list-style-type: none"> <li>○ Unit 3, Lesson 2 - SE pages 135-138, TE pages 135-138</li> </ul> </li> </ul>	<p>Lesson Quiz</p> <ul style="list-style-type: none"> <li>• Unit 3, Lesson 2 - page AG 26</li> <li>• Unit 3, Lesson 3 - page AG 27</li> </ul>
ACADEMIC CONNECTIONS TO OTHER DISCIPLINES	
<p>ELA: Journeys</p> <ul style="list-style-type: none"> <li>• Writing Connection - TE page 126</li> <li>• Writing Connection - TE page 132</li> <li>• Make Connections - TE page 138A                             <ul style="list-style-type: none"> <li>○ Language Arts Connection - Write Space Poems (Easy)</li> <li>○ Writing Connection - Newspaper Article (Challenging)</li> </ul> </li> <li>• Writing Connection - TE page 140</li> </ul>	<p>MATH: Math Expressions</p> <ul style="list-style-type: none"> <li>• Math Connection - TE page 125</li> <li>• Math Expressions Connections:                             <ul style="list-style-type: none"> <li>○ Unit 8 Lesson 1: Convert Metric Units of Length MX TE pages 610-614</li> <li>○ Unit 8 Lesson 2: Metric Units of Liquid Volume MX TE pages 618-620</li> <li>○ Unit 8 Lesson 3: Metric Units of Mass MX TE pages 624-626</li> <li>○ Unit 8 Lesson 4: Customary Units of Length MX TE pages 630-632</li> </ul> </li> <li>• Math Connection - TE page 128</li> <li>• Math Expressions Connections:                             <ul style="list-style-type: none"> <li>○ Unit 2 Lesson 9: Graph with Decimal Numbers MX TE page 173</li> <li>○ Unit 7 Lesson 6: Graph Ordered Pairs MX TE pages 595-596</li> <li>○ Unit 8 Lesson 7: Read and Make Line Plots MX TE pages 648-650</li> </ul> </li> <li>• Make Connections - TE page</li> <li>• Math Connection - Make a Scale Drawing (Challenging)</li> <li>• Math Expressions Connections:                             <ul style="list-style-type: none"> <li>○ Unit 1 Lesson 14: Focus on Mathematical Practices MX TE page 106</li> </ul> </li> </ul>