Grade 3

# Unit 7: Weather and Patterns

New Jersey Student Learning Standards

Established: 2016-2017
Revised: 2018-2019
Revised: 2019-2020
Revised: 2020-2021
**Revised: 2022-2023**

<table>
<tr><th>Trimester</th><th colspan="2">Unit Title</th><th>Recommended<br>Instructional Days</th></tr>
<tr><td>1</td><td colspan="2">Unit 7: Weather & Patterns</td><td>30 Days</td></tr>
<tr><td>NJSLS - Science:<br>TItle</td><td>NJSLS - Science:<br>Performance Expectations</td><td rowspan="2">Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLS-S within Unit</td><td></td></tr>
<tr><td>Earth and Space Science</td><td>3-ESS2-1<br>3-ESS2-2<br>3-ESS3-1</td><td></td></tr>
<tr><td>FOUNDATION<br>Disciplinary:<br>Core Idea</td><td>FOUNDATION<br>Disciplinary:<br>Statement</td><td rowspan="4"><u>Essential Question/s:</u><br><br>● How is the weather measured?<br>● How can we predict the weather?<br>● What are some severe weather impacts?<br>● What are some types of climates?<br>● What is climate change?<br><br><u>Activity Description</u>:<br><br>● Required before beginning Unit 7 - “Safety in Science:” Safety in the Lab; Safety in the Field; Safety Symbols; Safety Quiz - (SE xvii, xviii, xix, xx)<br>● “Safety Plan”- Unit Project (Beginning of Unit)<br>● “A New Job?” - Unit Performance Task<br>● “Wind Pictures”-Apply What You Know (Lesson 1) ART<br>● “Color Your Location”-Apply What You Know (Lesson 1) ART<br>● “Analyzing Weather Data”-Hands-On Activity (Lesson 1) MA</td><td></td></tr>
<tr><td>● Weather and Climate<br>● Natural Hazards</td><td>Understand that scientists record patterns of weather over time to determine the climate of an area and predict what kind of weather might happen next. This can help humans prepare for natural hazards and reduce their impacts.</td><td></td></tr>
<tr><td>FOUNDATION<br>Science and Engineering Practices:<br>Core Idea</td><td>FOUNDATION<br>Science and Engineering Practices:<br>Statement</td><td></td></tr>
<tr><td>● Analyzing and Interpreting Data<br>● Obtaining, Evaluating, and Communicating Information<br>● Engaging in Argument from Evidence</td><td>Represent data in tables and graphs to reveal patterns and provide evidence to make a claim and support an argument. Obtain and combine information from books and other reliable media to explain phenomena.</td><td></td></tr>
<tr><td>FOUNDATION<br>Crosscutting Concepts:</td><td>FOUNDATION<br>Crosscutting Concepts:<br>Statement</td><td></td></tr>
</table>

| ***Core Idea*** | |
|---|---|
| • Patterns<br>• Influence of Engineering, Technology, and Science on Society and the Natural World<br>• Science is a Human Endeavor<br>• Cause and Effect | Use patterns of change to make predictions and gain a better understanding of cause and effect relationships. Gain knowledge of relevant scientific concepts as science affects everyday life and use this knowledge to create and improve technology. |
| **Social and Emotional Learning:** ***Competencies*** | **Social and Emotional Learning:** ***Sub-Competencies*** |
| • Self-Awareness<br>• Self-Management<br>• Social Awareness<br>• Responsible Decision-Making<br>• Relationship Skills | • Recognize the importance of self-confidence in handling daily tasks and challenges<br>• Recognize the skills needed to establish and achieve personal and educational goals<br>• Demonstrate an understanding of the need for mutual respect when viewpoints differ<br>• Develop, implement, and model effective problem-solving and critical thinking skills<br>• Utilize positive communication and social skills to interact effectively with others |

- **"Determining Wind Direction"**-Extra Hands-On Activity **(Lesson 1) TECH**
- **"Averages In Your Town"**-Apply What You Know **(Lesson 2) TECH**
- **Required Performance Task - "Weather Here and There"**-Hands-On Activity **(Lesson 2) TECH/SS**
  See Below
- **"Tomorrow's Weather"**-Extra Hands-On Activity **(Lesson 2) TECH**
- **"The Answer Is Blowing in the Wind"-**Apply What You Know **(Lesson 3)**
- **"Smashing Floods"**-Hands-On Activity **(Lesson 3) ART**
- **"Debating Damage"**-Extra Hands-On Activity **(Lesson 3) TECH**
- **"Explain the Zones"**-Apply What You Know **(Lesson 4)**
- **"Looking for a New Home"**-Hands-On Activity **(Lesson 4) SS/TECH**
- **"Zoned for Weather"**-Extra Hands-On Activity **(Lesson 4) TECH**
- **"Run a Weather Station"**-You Solve It **TECH**
- **StudyJams Scholastic:** Weather & Climate Video **TECH**
- **StudyJams Scholastic:** Weather Instruments **TECH**
- **StudyJams Scholastic**: Video: Air Masses & Fronts **TECH**
- **Climate Kids NASA** - What is Climate Change? **TECH**

**Amistad Law/Diversity & Inclusion**

**Take if Further:** Conduct a research study on Archie Williams - One of the first African American meteorologists who changed the world.

**Interdisciplinary Connections - English Language Arts:** :
**RI.3.1** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
**RI.3.7** Use information gained from illustrations and the words in a text to demonstrate an understanding of the text.
**RI.3.8** Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence) to support specific points the author makes in a text.

**W.3.1** Write opinion pieces on topics or texts, supporting a point of view with reasons.
**W.3.7** Conduct short research projects that build knowledge about a topic.
**W.3.8** Recall information from experiences or gather information from print digital sources; take brief notes on sources and sort evidence into provided categories.
**SL.3.4** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

**Interdisciplinary Connections - Mathematics:**
**MP.2** Reason abstractly and quantitatively.
**3.MD.A.2** Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units.
**3.MD.B.3** Draw a scaled picture graph and scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in bar graphs.
**MP.4** Model with mathematics.

**Science Dimensions/Go Math Correlations**

| HMH Science Dimensions Math Content | HMH Science Dimensions Pages | Go Math Aligned Lessons |
|---|---|---|
| Lesson 1: Organize Data in Tables; Create Bar Graphs; Solve Problems Using Data; Measure Liquid Volume | Pages 408; 409; 411; 412; 414; 416 | Lessons 2.1; 2.5; 2.6; 10.7 |
| Lesson 2: Problem Solving Addition & Subtraction; Create Bar Graphs; Solve Problems Using Data; Organize | Pages 425; 426; 427; 431; 437; 438 | Lessons 1.12; 2.5; 2.6; 2.1 |

| | | |
|---|---|---|
| Data in Tables | | |
| Lesson 3: Predicting Weather | Pages 452 | Not correlated to a GoMath Lesson |
| Lesson 4: Create Bar Graphs; Solve Problems Using Data | Pages 481 | Lessons 2.5; 2.6 |

| **Assessments (Formative)**<br>***To show evidence of meeting the standard/s, students will successfully engage within:*** | **Assessments (Summative)**<br>***To show evidence of meeting the standard/s, students will successfully complete:*** |
|---|---|
| **Formative Assessments:**<br>● Apply what you know; Lesson check; Self check; Evidence notebooks | **Summative Assessments:**<br>● End of lesson quizzes; End of unit assessment<br><br>**Alternative:**<br>Performance Assessment (back of assessment guide) Lab Practical<br><br>**Suggested Writing Prompt**:<br>● Read the paired texts, "Safety During Storms," on ReadWorks.org and write an informational essay explaining the importance of predicting the weather. Be sure to explain how predicting the weather helps keep civilians safe from severe weather impacts. Be sure to use textual evidence from both passages. |

**Differentiated Student Access to Content:**
**Teaching and Learning *Resources/Materials***

| **Core Resources** | **Alternate Core Resources** ***IEP/504/At-Risk/ESL*** | **ELL Core Resources** | **Gifted & Talented Core Resources** |
|---|---|---|---|
| ● Evidence Notebook<br>● Equipment Kit | In addition to Core Resources:<br>● Extra Support Readers | In addition to Core Resources:<br>● Science Thesaurus | In addition to Core Resources:<br>● Enrichment Readers |

| | | | |
|---|---|---|---|
| • On Level Readers<br>• Online Simulations<br>• Dimensions TE<br>• Dimensions SE | • Science and Engineering Practices Online Handbook | • Extra Support Readers<br>• Science and Engineering Practices Online Handbook | |

**Supplemental Resources**

**Technology:**
- Chromebook
- SMARTBoard

**Ed Science Platform:**
- Digital Assessments
- Digital Performance Tasks
- You Solve It Simulations
- Google Expeditions
- Student eBook
- Video-Based Projects
- Science Tools
- Online Glossary
- National Geographic

**Differentiated Student Access to Content:**
**Recommended *Strategies & Techniques***

| **Core Resources** | **Alternate Core Resources** ***IEP/504/At-Risk/ESL*** | **ELL Core Resources** | **Gifted & Talented Core** |
|---|---|---|---|
| • Deliver instruction utilizing varied learning styles including audio, visual, and tactile/kinesthetic<br>• Provide individual instruction as needed | • Utilize a multi-sensory (VAKT) approach during instruction<br>• Provide alternate presentations of skills by varying the method (repetition, simple explanations, additional examples, modeling, etc.) | • Extend time requirements<br>• Preferred seating<br>• Positive reinforcement<br>• Check often for understanding/review<br>• Oral/visual directions/prompts when necessary<br>• Supplemental materials including use of online | • Create an enhanced set of introductory activities<br>• Integrate active teaching/learning opportunities<br>• Incorporate authentic components<br>• Propose interest-based extension activities |

| | | | |
|---|---|---|---|
| | • Modify test content and/or format<br>• Allow students to retake test for additional credit, Provide additional times and preferential seating as needed,<br>• Review, restate and repeat directions<br>• Provide study guides, and/or break assignments into segments of shorter tasks | bilingual dictionaries, and modified assessment and/or rubric. | • Connect student to related talent development opportunities |

| | | |
|---|---|---|
| **NJSLS CAREER READINESS, LIFE LITERACIES & KEY SKILLS** | **Disciplinary Concept:**<br>1. Career Awareness & Planning<br>2. Creativity and Innovation<br>3. Critical Thinking & Problem-Solving<br>4. Global & Cultural Awareness<br>5. Information and Media Literacy<br>6. Technology Literacy | |
| | ***Core Ideas:*** | • An individual's passions, aptitude and skills can affect his/her employment and earning potential.<br>• Collaboration with individuals with diverse perspectives can result in new ways of thinking and/or innovative solutions<br>• Curiosity and a willingness to try new ideas (intellectual risk-taking) contributes to the development of creativity and innovation skills.<br>• The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.<br>• Individuals from different cultures may have different points |

| | | |
|---|---|---|
| | | of view and experiences.<br>● Culture and geography can shape an individual's experiences and perspectives.<br>● Specific situations require the use of relevant sources of information.<br>● Different digital tools have different purposes.<br>● Collaborating digitally as a team can often develop a better artifact than an individual working alone. |
| | ***Performance Expectation/s:*** | ● 9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.<br>● 9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.<br>● 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements<br>● 9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate changE<br>● 9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).<br>● 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).<br>● 9.4.5.GCA.1: Analyze how culture shapes individual and community perspectives and points of view (e.g., 1.1.5.C2a, RL.5.9, 6.1.5.HistoryCC.8).<br>● 9.4.5.IML.6: Use appropriate sources of information from diverse sources, contexts, disciplines, and cultures to answer questions (e.g., RI.5.7, 6.1.5.HistoryCC.7, 7.1.NM. IPRET.5). |

| | | |
|---|---|---|
| | | • 9.4.5.TL.3: Format a document using a word processing application to enhance text, change page formatting, and include appropriate images, graphics, or symbols.<br>• 9.4.5.TL.5: Collaborate digitally to produce an artifact (e.g., 1.2.5CR1d). |
| | **Career Readiness, Life Literacies, & Key Skills Practices** | |
| | • Act as a responsible and contributing community member and employee.<br>• Consider the environmental, social and economic impacts of decisions.<br>• Demonstrate creativity and innovation.<br>• Utilize critical thinking to make sense of problems and persevere in solving them.<br>• Model integrity, ethical leadership and effective management.<br>• Plan education and career paths aligned to personal goals.<br>• Use technology to enhance productivity, increase collaboration and communicate effectively.<br>• Work productively in teams while using cultural/global competence. | |

| New Jersey Legislative Statutes and Administrative Code<br>(place an "X" before each law/statute if/when present within the curriculum map) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| X | Amistad Law: *N.J.S.A. 18A 52:16A-88* | | Holocaust Law: *N.J.S.A. 18A:35-28* | | LGBT and Disabilities Law: *N.J.S.A. 18A:35-4.35* | X | Diversity & Inclusion: *N.J.S.A. 18A:35-4.36a* | X | Standards in Action: *Climate Change* |