# Unit 3 - Weather and Climate

Content Area: **Science**
Course(s):
Time Period: **Full Year**
Length: **Full Year**
Status: **Published**

## Unit Overview

In this unit, students are introduced to pushes and pulls and how those affect the motion of objects. Students observe and investigate the effects of what happens when the strength or direction of those pushes and pulls are changed. Lessons in this unit satisfy Climate Change mandate.

## Enduring Understandings

Weather and climate affect what we wear, places we go and everyday situations and events.
Local weather forecasts and weather scientists track weather for a specific region to help determine an effect weather may have on our lives such as severe weather impacting a region.
When we are aware of the weather and climate it helps us to plan our daily activities.
Things that people do to live comfortably can affect the world around them, but they can make choices that reduce their impact on the land, water, air, and other living things.

## Essential Questions

How do weather and climate effect our daily lives?
What resources are available to track weather for certain regions?
How can we identify the different weather patterns and use them to guide us in our everyday lives?

## Learning Objectives

Observe patterns in events generated by cause-and-effect relationships.
Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world.
Ask questions based on observations to find more information about the designed world.
Ask questions to obtain information about the purpose of weather forecasting to prepare for and respond to severe weather. (Emphasis is on local forms of severe weather.)
Define a simple problem that can be solved through the development of a new or improved object or tool.
Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through developing a new or improved object or tool.
Explain how climate change impacts all living things. (Climate Change)

## Standards: Content

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| K-PS3-1 | Make observations to determine the effect of sunlight on Earth's surface. |
| K-PS3-2 | Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on an area. |
| K-ESS2-1 | Use and share observations of local weather conditions to describe patterns over time. |
| K-ESS2-2 | Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. |
| K-ESS3-2 | Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather. |
| K-ESS3-3 | Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment. |

## Standards: Interdisciplinary

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| L.WF.K.3.L | Use conjunctions appropriately in sentences (e.g., and, but, so, and because). |
| L.KL.K.1.A | Use frequently occurring nouns and verbs. |
| L.KL.K.1.B | Form regular plural nouns orally by adding -s or -es (e.g., dog, dogs; wish, wishes). |
| L.KL.K.1.C | Understand and use question words (interrogatives) (e.g., who, what, where, when, why, how). |
| L.KL.K.1.D | Use the most frequently occurring prepositions (e.g., to, from, in, out, on, off, for, of, by, with). |
| L.KL.K.1.E | Produce and expand complete sentences in shared language activities. |
| RI.CR.K.1 | With prompting and support, ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how). |
| RI.CI.K.2 | With prompting and support, identify the main topic and key details of an informational text (e.g., who, what, where, when, why, how). |
| RI.IT.K.3 | With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text. |
| RI.TS.K.4 | Recognize common types of informational texts (e.g., biographies, recipes, how-to manuals) and identify features of print (e.g., front cover, back cover, and title page of a book). |
| RI.PP.K.5 | With prompting and support, name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text. |
| RI.MF.K.6 | With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts). |
| RI.AA.K.7 | With prompting and support, identify the reasons an author gives to support points in a text. |
| RI.CT.K.8 | With prompting and support, identify basic similarities in and differences between two informational texts on the same topic (e.g., characters, experiences, illustrations, descriptions, or procedures). |
| W.IW.K.2.A | Introduce a topic. |
| W.IW.K.2.B | Develop the topic with at least two facts or other information and examples related to the topic, including pictures. |
| SL.AS.K.6 | Speak audibly and express thoughts, feelings, and ideas clearly. |

## Assessment Evidence

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| Formative | Teacher observations, Class discussions, Lab Activities, Key concepts and vocabulary quizzes, Science Starter's/Do Nows, Open Ended Responses, Modeling, Simulations, Innovators Monthly Research, Vocabulary Responses, Exit Questions, Interactive Digital Assessments embedded in Exploring Science Digital Book |
| Summative | In correlation with the NGSS, students must demonstrate the following as summative assessments:<br><br>K-PS3-1., Make observations to determine the effect of sunlight on Earth's surface.<br>K-PS3-2., Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.<br>K-ESS2-1., Use and share observations of local weather conditions to describe patterns over time.<br>K-ESS3-2., Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.<br>Other summative assessments will include but are not limited to: projects, summative tests, lab skills demonstrations, and vocabulary quizzes. |
| Alternative & Benchmark | Alternative - Read to the student and chart oral responses. Word banks, sentence frames, oral responses, graphic organizers, observations, portfolios of student work, orally administered assessments, and anecdotal notes.<br>Benchmark - Teacher generated unit assessments, projects/labs, checkpoint assessments |
| Assessment Evidence Resource | |

## Instructional Resources

Smartboard, Computers, Websites and digital interactives/models, Multi-media presentations, Video Streaming, Brain Pop, Middle School Science, Generation Genius Digital Curriculum, Amplify Digital Curriculum, Microsoft 365, Primary and Secondary Source Documents, Assorted lab materials., water cups, plastic bottles, markers, crayons, glue sticks, scissor

Instructional Resource List

## Curricular Mandates

*Below are the curricular requirements as defined in NJ Administrative Code and Statute*

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| | Amistad | | Diversity, Equity, and Inclusion |
| | Holocaust | | LGBT and Disabilities (Grades 6-12) |

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| X | Climate Change | | Asian American & Pacific Islander |

## Social Emotional Learning (SEL) Competencies

*NJ Social and Emotional Learning Competencies & Sub-Competencies*

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| X | Self-Awareness | X | Relationship Skills |
| | Responsible Decision-Making | X | Social Awareness |
| | Self-Management | | |

## 21st Century Skills & Themes

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| X | Global and Cultural Awareness | | Technology Literacy | | Planning and Budgeting |
| X | Creativity and Innovation | | Financial Institutions | | Risk Management and Insurance |
| | Information and Media Literacy | | Digital Citizenship | | Economic and Government Influences |
| X | Critical Thinking and Problem Solving | | Credit Profile | | Career Awareness and Planning |
| | Civic Financial Responsibility | | Financial Psychology | | |