

Air and Weather

Content Area: **Science**
Course(s):
Time Period: **Trimester 1**
Length: **6-8 weeks**
Status: **Published**

Course Pacing Guide

This pacing guide should include the vision and mission of the course. It will be the same for all units in your course.

The simpler, the better. Pacing guide flaws come when they are too constricting, so big ideas is best (Cobb, McClain, de Silva Lamberg, & Dean, 2003; Wiggins, Wiggins, & McTighe, 2005)

Unit	MP/Trimester	Weeks
Air and Weather	1st Trimester	6-8 weeks
Sound and Light	2nd Trimester	6-8 Weeks
Plants and Animals	3rd Trimester	6-8 Weeks

Unit Overview

In this module, young students turn their focus upward. The anchor

phenomena are the air that surrounds us and the natural objects that we see in the sky.

Enduring Understandings

Air is a gas and is all around us.
Air is matter and takes up space.
Air makes objects move.
Air moves from place to place. Moving air is wind.
Air resistance affects how things move

Air can be compressed.
The pressure from compressed air can move things, including water.

Weather describes conditions in the air outside.
Temperature describes how hot or cold the air is.
Temperature is measured with a thermometer.
Clouds are made of liquid water drops that fall to Earth as rain.

Wind moves clouds in the sky.
The Sun and Moon can be observed moving across the sky; we see them at different locations in the sky, depending on the time of day or night.

Wind is moving air.

Meteorologists use wind scales (models) to describe the strength of the wind.

Meteorologists use anemometers to measure the speed of the wind.

A wind vane points in the direction the wind is coming from.

Wind lifts kites up into the sky.

Daily changes in temperature and weather type can be observed, compared, and predicted over a month

The Sun and Moon can be observed moving across the sky; we see them at different locations in the sky, depending on the time of day or night.

Each season has a typical weather pattern that can be observed, compared, and predicted. The number of hours of daylight changes predictably through the seasons.

Essential Questions

Where is air and what can it do?

When you look up at the sky, what do you see, and how does it change?

How do we observe and describe the wind?

How do daylight and weather change through the seasons?

New Jersey Student Learning Standards (No CCS)

SCI.1-ESS1-2	Make observations at different times of year to relate the amount of daylight to the time of year.
SCI.1-ESS1-1	Use observations of the sun, moon, and stars to describe patterns that can be predicted.
1-ESS1-1	Use observations of the sun, moon, and stars to describe patterns that can be predicted.
1-ESS1-1.1.1	Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
1-ESS1-2.1.1	Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
1-ESS1-2.3	Planning and Carrying Out Investigations
1-ESS1-1.4	Analyzing and Interpreting Data
1-ESS1-1.4.1	Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.
1-ESS1-1.ESS1.A.1	Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted.
1-ESS1-2.ESS1.B.1	Seasonal patterns of sunrise and sunset can be observed, described, and predicted.

Amistad Integration

Refer to 1st grade reading curriculum maps.

Holocaust/Genocide Education

Refer to 1st grade reading curriculum maps.

Interdisciplinary Connections

MA.1.OA.A.1	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
LA.RI.1.1	Ask and answer questions about key details in a text.

LA.RI.1.2	Identify the main topic and retell key details of a text.
LA.RI.1.3	Describe the connection between two individuals, events, ideas, or pieces of information in a text.
LA.RI.1.4	Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
LA.RI.1.5	Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
LA.RI.1.6	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
LA.RI.1.7	Use the illustrations and details in a text to describe its key ideas.
LA.RI.1.8	Identify the reasons an author gives to support points in a text and explain the application of this information with prompting as needed.
LA.RI.1.9	Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
MA.1.MD.C.4	Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
LA.W.1.5	With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers and self-reflection, and add details to strengthen writing and ideas as needed.
LA.SL.1.1	Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
LA.SL.1.3	Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
LA.L.1.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 1 reading and content, choosing flexibly from an array of strategies.

Technology Standards

TECH.8.2.2	Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.
TECH.8.2.2.A.CS3	The relationships among technologies and the connections between technology and other fields of study.

21st Century Themes/Careers

Digital media will be used incorporated in project presentations. This module will develop students' abilities to do and understand scientific inquiry. Students will identify questions, design and conduct scientific investigations to answer those questions, employ tools to gather, analyze, and interpret data. They will use data to construct reasonable explanations, develop and communicate investigations and evidence and understand that scientists use different kinds of investigations and tools to develop explanations using evidence and knowledge. This module will develop and extend students' understandings about science and technology. Students will work collaboratively in teams and use tools and scientific techniques to make better observations

CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.
CRP.K-12.CRP4.1	Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.
CAEP.9.2.4.A.1	Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
CAEP.9.2.4.A.2	Identify various life roles and civic and work - related activities in the school, home, and community.
CAEP.9.2.4.A.3	Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes.
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.

Instructional Strategies & Learning Activities

- Activate Prior Knowledge
- Visualization
- Cooperative Learning
- Discovery/Inquiry Based Instruction
- Teacher Modeling
- Guided Practice
- Independent Practice/Application
- Anchor Charts
- Exploration
- Graphic Organizers
- Vocabulary Wall
- Small Group Cooperative Learning
- Provide Specific Feedback
- Observe Systems and Interactions
- Data Recording, Organizing, and Processing
- Check for Understanding
- Effective Questioning
- Whole Group Discussion
- Share Findings with Group

Differentiated Instruction

- Curriculum Map
- Inquiry/Problem-Based Learning
- Learning preferences integration (visual, auditory, kinesthetic)
- Sentence & Discussion Stems
- Tiered Learning Targets
- Learning through play
- Meaningful Student Voice & Choice
- Relationship-Building & Team-Building
- Self-Directed Learning
- Mastery Learning (feedback toward goal)
- Goal-Setting & Learning Contracts
- Game-Based Learning
- Grouping
- Rubrics
- Jigsaws
- Learning Through Workstations
- Assessment Design & Backwards Planning
- Modified Assessment/Work Product

Formative Assessments

- Response Sheets
- Student Notebook Entries
- Embedded Assessments
- Student Discussions
- Teacher Observation of Student Exploration
- Student Whiteboards
- Investigation Check (I-Checks)
- Reflective Assessment Practices

Summative Assessment

- Investigation Checks (I-Checks)

Benchmark Assessments

- Investigation Checks (I-Checks)

Alternate Assessments

- Teacher Observation
- Student responses
- Scribe

Resources & Technology

- Foss Website
- Promethean or Smartboard
- [Foss Web Resources](#)

BOE Approved Texts

- FOSS Science Resources Air and Weather

Closure

- Interdisciplinary Extensions (Art, Science, Math, Social Studies, Language Arts)
- Snowstorm - Students write down what they learned on a piece of scratch paper and wad it up. Given a signal, they throw their paper s
- Poster Presentation- Students will work in groups to present the information they learned on a poster
- Gallery Walk - On chart paper, small groups of students write and draw what they learned. After the completed works are attached to the classroom walls, others students affix post-its to the posters to extend on the ideas, add questions.
- Give a short quiz using technologies like Kahoot
- Have students write down three quiz questions (to ask at the beginning of the next class).
- Question Stems - Have students write questions about the lesson on cards, using [question stems framed around Bloom's Taxonomy](#). Have students exchange cards and answer the question they have acquired.
- Kids answer the following prompts: "What takeaways from the lesson will be important to know three years from now? Why?"
- Ask a question. Give students ten seconds to confer with peers before you call on a random student to answer. Repeat.

- Have kids orally describe a concept, procedure, or skill in simple terms.
- Direct kids to raise their hands if they can answer your questions. Classmates agree (thumbs up) or disagree (thumbs down) with the response.
- Have kids create a cheat sheet of information that would be useful for a quiz on the day's topic.
- Kids write notes to peers describing what they learned from them during class discussions.
- Have students complete the following sentence: "The [concept, skill, word] is like _____ because _____."
- Ask students to write what they learned, and any lingering questions on an "exit ticket". Before they leave class, have them put their exit tickets in a folder or bin labeled either "Got It," "More Practice, Please," or "I Need Some Help!"
- After writing down the learning outcome, ask students to take a card, circle one of the following options, and return the card to you before they leave: "Stop (I'm totally confused. Go (I'm ready to move on.)" or "Proceed with caution (I could use some clarification on . . .)"
- Students can record themselves on the iPad explaining the concept learned.
- At home extension/connection activities (Observe the moon each evening)

ELL

- Alternate Responses (i.e nonverbal cues)
- Sentence Starters
- Visuals
- Extended Time
- Teacher Modeling
- Simplified Written and Verbal Instructions
- Frequent Breaks
- Peer Mentors
- Strategic Partnering
- FOSS Web Spanish Version for materials

Special Education

List is not inclusive but may include the following accommodations. Please refer to individual IEP accommodations and goals. A few examples include:

- Shorten assignments to focus on mastery of key concepts.
- Substitute alternatives for written assignments (clay models, posters, panoramas, collections, etc.)
- Specify and list exactly what the student will need to learn to pass.
- Evaluate the classroom structure against the student's needs (flexible structure, firm limits, etc.).

- Keep workspaces clear of unrelated materials.
- Keep the classroom quiet during intense learning times.
- Reduce visual distractions in the classroom (mobiles, etc.).
- Provide a computer for written work.
- Seat the student close to the teacher or a positive role model.
- Provide an unobstructed view of the chalkboard, teacher, movie screen, etc.
- Keep extra supplies of classroom materials (pencils, books) on hand.
- Maintain adequate space between desks.
- Give directions in small steps and in as few words as possible.
- Number and sequence the steps in a task.
- Have student repeat the directions for a task.
- Provide visual aids.
- Go over directions orally.
- Provide a vocabulary list with definitions.
- Permit as much time as needed to finish tests.
- Allow tests to be taken in a room with few distractions (e.g., the library).
- Have test materials read to the student, and allow oral responses.
- Divide tests into small sections of similar questions or problems.
- Allow the student to complete an independent project as an alternative test.
- Allow take-home or open-book tests.
- Show a model of the end product of directions (e.g., a completed math problem or finished quiz).
- Stand near the student when giving directions or presenting a lesson.
- Mark the correct answers rather than the incorrect ones.
- Permit a student to rework missed problems for a better grade.
- Average grades out when assignments are reworked, or grade on corrected work.
- Use a pass-fail or an alternative grading system when the student is assessed on his or her own growth.

504

Examples of accommodations in 504 plans include but are not limited to the following. Please refer to individual 504 plan for specific accommodations:

- preferential seating
- extended time on tests and assignments
- reduced homework or classwork
- verbal, visual, or technology aids
- modified textbooks or audio-video materials
- behavior management support
- adjusted class schedules or grading
- verbal testing
- excused lateness, absence, or missed classwork
- pre-approved nurse's office visits and accompaniment to visits
- occupational or physical therapy

At Risk

Examples may include:

- Use of mnemonics
- Have student restate information
- Provision of notes or outlines
- Concrete examples
- Use of a study carrel
- Assistance in maintaining uncluttered space
- Weekly home-school communication tools (notebook, daily log, phone calls or email messages)
- Peer or scribe note-taking
- Sheets with highlighted instructions
- No penalty for spelling errors or sloppy handwriting
- Follow a routine/schedule
- Teach time management skills
- Verbal and visual cues regarding directions and staying on task
- Adjusted assignment timelines
- Visual daily schedule
- Immediate feedback
- Work-in-progress check
- Pace long-term projects
- Preview test procedures
- Film or video supplements in place of reading text
- Cue/model expected behavior
- Use de-escalating strategies
- Use peer supports and mentoring
- Have parent sign homework/behavior chart
- Chart progress and maintain data

Gifted and Talented

- Focus on effort and practice
- Offer the Most Difficult First
- Offer choice
- Speak to Student Interests
- Allow G/T students to work together
- Encourage risk taking
- Provide challenge activities

