2nd Grade Science Pebbles Sand and Silt

Content Area: **Science**
Course(s):
Time Period: **Trimester 2**
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	Weeks
Pebbles, Sand, and Silt	6-8 weeks

Unit Overview

Students engage with the anchor phenomenon of earth materials that cover the planet's surface.

Enduring Understandings

- Rocks can be described by their properties.
- Smaller rocks (sand) result from the breaking (weathering) of larger rocks.
- Rocks are the solid material of Earth.
- Rocks are composed of minerals.

• Volcanoes are mountains built up by melted rocks that flow out of weak areas in Earth's crust.

Rocks are earth materials.
• Rocks can be described by the property of size.
• Rock sizes include clay, silt, sand, gravel, pebbles, cobbles, and boulders.
• Weathering, caused by wind or water, causes larger rocks to break into small rocks.
• Some Earth events happen rapidly; others occur slowly over a very long period of time.

• Earth materials are natural resources.
• The properties of different earth materials make each suitable for specific uses.
● Different sizes of sand are used on sandpaper to change the surface of wood from rough to smooth.
• Earth materials are commonly used in the construction of buildings and streets.

Earth materials are natural resources.
• Soils can be described by their properties (color, texture, ability to support plant growth).
• Soil is made partly from weathered rock and partly from organic material. Soils vary by location.
• Natural sources of water include streams, rivers, ponds, lakes, marshes, and the ocean. Sources of water can be fresh or saltwater.

• Water can be a solid, liquid, or gas.

• Wind and water can change the shape of land.
• The shapes and kinds of land and water can be represented by various models.

Essential Questions

What are properties of rocks and how do they change?

How are small pieces of rock made and moved to change Landforms?

How are different sizes of rock used as resources to make useful objects?

How can we apply what we know about the ways that land and water interact?

New Jersey Student Learning Standards (No CCS)

SCI.2-ESS2-3	Obtain information to identify where water is found on Earth and that it can be solid or liquid.
SCI.2-ESS2-1	Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
SCI.2-ESS1-1	Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
SCI.2-PS1-2	Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.
SCI.2-PS1-4	Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.
SCI.2-PS1-1	Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
SCI.2-PS1-3	Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.

Amistad Integration

Holocaust/Genocide Education

Interdisciplinary Connections

LA.RI.2.1	Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
LA.RI.2.2	Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.
LA.RI.2.4	Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
LA.RI.2.5	Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.
LA.RI.2.6	Identify the main purpose of a text, including what the author wants to answer, explain, or

	describe.
LA.RI.2.7	Explain how specific illustrations and images (e.g., a diagram showing how a machine works) contribute to and clarify a text.
LA.RI.2.8	Describe and identify the logical connections of how reasons support specific points the author makes in a text.
LA.RI.2.9	Compare and contrast the most important points presented by two texts on the same topic.
MA.2.MD.D	Represent and interpret data.
LA.W.2.2	Write informative/explanatory texts in which they introduce a topic, use evidence-based facts and definitions to develop points, and provide a conclusion.
LA.W.2.5	With guidance and support from adults and peers, focus on a topic and strengthen writing as needed through self-reflection, revising and editing.
LA.W.2.8	Recall information from experiences or gather information from provided sources to answer a question.
LA.SL.2.1	Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
LA.SL.2.2	Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
LA.L.2.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies.
LA.L.2.5	Demonstrate understanding of figurative language, word relationships and nuances in word meanings.
LA.L.2.6	Use words and phrases acquired through conversations, reading and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy that makes me happy).

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

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.

Financial Literacy Integration

Instructional Strategies & Learning Activities

- Start with review
- Present new material in small steps
- Think Aloud/ modeling
- Guided Practice
- State the objective
- Use graphic organizers/ anchor charts
- Concept sorting
- Check for understanding
- Provide feedback
- Gradual release of responsibility
- Student-led discussion strategies
- Cooperative learning
- Differentiation
- Sharing, questioning, and planning
- Put things together, take things apart
- Observe systems and interactions
- Conduct experiments
- Data recording, organizing, and processing
- Analyze the most important part of an active investigation

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
- Goal-Setting & Learning Contracts
- Game-Based Learning
- Grouping
- Rubrics
- Jigsaws
- Learning Through Workstations
- Assessment Design & Backwards Planning

Formative Assessments

Response sheets

Science Notebook entries

Summative Assessment

Investigations i-check

Benchmark Assessments

Investigations i-check

Alternate Assessments

Verbal responses, teacher observations

Resources & Technology

Promethean or Smartboard

FOSS website

BOE Approved Texts

FOSS Next Generation 2nd grade investigations guides

Closure

Such as:

- Snowstorm - Students write down what they learned on a piece of scratch paper and wad it up. Given a signal, they throw their paper snowballs in the air. Then each learner picks up a nearby response and reads it aloud.
- Parent Hotline - Give students an interesting question about the lesson without further discussion. Email their guardians the answer so that the topic can be discussed over dinner.
- DJ Summary - Learners write what they learned in the form of a favorite song. Offer to let one or two sing thier summary.
- 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.
- Sequence It - create timelines of major events discussed
- Low-Stakes Quizzes - Give a short quiz using technologies like Kahoot or a Google form.
- 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?
- Have students dramatize a real-life application of a skill.
- 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 terms so simple that a child in first grade would get it.
- 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.
- Ask students to summarize the main idea in under 60 seconds to another student acting as a well-known personality who works in your discipline. After summarizing, students should identify why the famous person might find the idea significant.
- 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 . . .)"

*Add to or remove any of these as you see fit.

ELL

Such as:

- Alternate Responses
- Advance Notes
- Extended Time
- Teacher Modeling
- Simplified Written and Verbal Instructions
- Frequent Breaks
- E-Dictionaires
- Google Translate

*Add to or remove any of these as you see fit.

Special Education

List is not inclusive but may include examples such as:

- Shorten assignments to focus on mastery of key concepts.
- Shorten spelling tests to focus on mastering the most functional words.
- 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.
- Use a study carrel. (Provide extras so that the student is not singled out.)
- 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.
- Give progress reports instead of grades.
- Grade spelling separately from content.
- 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.

Intervention

504

Examples of accommodations in 504 plans include but are not limited to:

- 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

*Add to or remove any of these as you see fit.

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
- Lab and math sheets with highlighted instructions
- Graph paper to assist in organizing or lining up math problems
- Use of manipulatives
- 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
- Pass/no pass option
- Cue/model expected behavior
- Use de-escalating strategies
- Use peer supports and mentoring
- Have parent sign homework/behavior chart
- Chart progress and maintain data

*Add to or remove any of these as you see fit.

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