

# Unit 4: Earth's Surface (Earth's Systems)

Content Area: **Science**  
Course(s): **Science Gr 2**  
Time Period: **MarApr**  
Length: **23 Days**  
Status: **Published**

## **Title Section**

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## **Department of Curriculum and Instruction**



**Belleville Public Schools**

**Curriculum Guide**

## **Science: Grade 2**

# **Unit 4: Earth's Surface**

**Belleville Board of Education**

**102 Passaic Avenue**

**Belleville, NJ 07109**

**Prepared by: Ms. Chris Cahill**

Dr. Richard Tomko, Ph.D., M.J., Superintendent of Schools

Ms. LucyAnn Demikoff, Director of Curriculum and Instruction K-12

Ms. Nicole Shanklin, Director of Elementary Education

Mr. George Droste, Director of Secondary Education

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## **Unit Overview**

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**In this unit, students will:**

- gather information to identify where water is located on Earth.
- develop maps to represent locations of land and water on Earth.

**Lesson 1 Overview:**

- Gather information to identify that water is found in ponds, lakes, rivers, and oceans on Earth

**Lesson 2 Overview:**

- Develop a map to identify where land and water are located.

## **Enduring Understanding**

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**Lesson 1**

- **Enduring Understanding:** By gathering information, identify that water is found in ponds, rivers, lakes, and oceans on Earth.
- **Essential Question:** Where is water found on Earth?

**Lesson 2**

- **Enduring Understanding:** Creating and reading a map can identify where land and water are located on Earth.
- **Essential Question:** How can we map land and water?

## Essential Questions

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### Unit 4 Essential Questions:

- Where is water found on Earth?
- What are the various types of bodies of water?
- How can we map land and water?
- Why are maps useful?

## Exit Skills

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By the end of Grade 2, Science Unit 4, the student should be able to:

- Read a map to identify land, water, and patterns.
- Use a map key to identify land and water features.
- Create a map, utilizing a key and compass rose.
- Make comparisons of ponds, lakes, rivers, and oceans.
- Gather information to compare water found on Earth.

## New Jersey Student Learning Standards (NJSL-S) & NGSS

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SEP - Obtaining, Evaluating, and Communicating Information

SEP - Developing and Using Models

DCI - Plate Tectonics and Large-Scale System Interactions

DCI - The Roles of Water in Earth's Surface Processes

CCC - Patterns

[NextGen Science Standards](#)

liquid.

2-ESS2-2.2

Developing and Using Models

## Interdisciplinary Connections

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Do the Math! pp. 192, 212

|              |  |
|--------------|--|
| MA.2.NBT.A.3 | Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.   |
| MA.2.NBT.A.4 | Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.  |
| MA.2.MD.B.5  | Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. |
| MA.2.MD.D.10 | Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.                            |
| LA.W.2.8     | Recall information from experiences or gather information from provided sources to answer a question.  |

## Learning Objectives

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### Unit 4 Learning Objectives:

- SWBAT: Gather information to identify that water is found in ponds, lakes, rivers, and oceans on Earth.
- SWBAT: Develop a map to identify where land and water are located.

**Action Verbs:** Below are examples of action verbs associated with each level of the Revised Bloom's Taxonomy.

| Remember | Understand    | Apply      | Analyze       | Evaluate  | Create      |
|----------|---------------|------------|---------------|-----------|-------------|
| Choose   | Classify      | Choose     | Categorize    | Appraise  | Combine     |
| Describe | Defend        | Dramatize  | Classify      | Judge     | Compose     |
| Define   | Demonstrate   | Explain    | Compare       | Criticize | Construct   |
| Label    | Distinguish   | Generalize | Differentiate | Defend    | Design      |
| List     | Explain       | Judge      | Distinguish   | Compare   | Develop     |
| Locate   | Express       | Organize   | Identify      | Assess    | Formulate   |
| Match    | Extend        | Paint      | Infer         | Conclude  | Hypothesize |
| Memorize | Give Examples | Prepare    | Point out     | Contrast  | Invent      |
| Name     | Illustrate    | Produce    | Select        | Critique  | Make        |
| Omit     | Indicate      | Select     | Subdivide     | Determine | Originate   |
| Recite   | Interrelate   | Show       | Survey        | Grade     | Organize    |
| Select   | Interpret     | Sketch     | Arrange       | Justify   | Plan        |
| State    | Infer         | Solve      | Breakdown     | Measure   | Produce     |
| Count    | Match         | Use        | Combine       | Rank      | Role Play   |

Draw  
Outline  
Point  
Quote  
Recall  
Recognize  
Repeat  
Reproduce

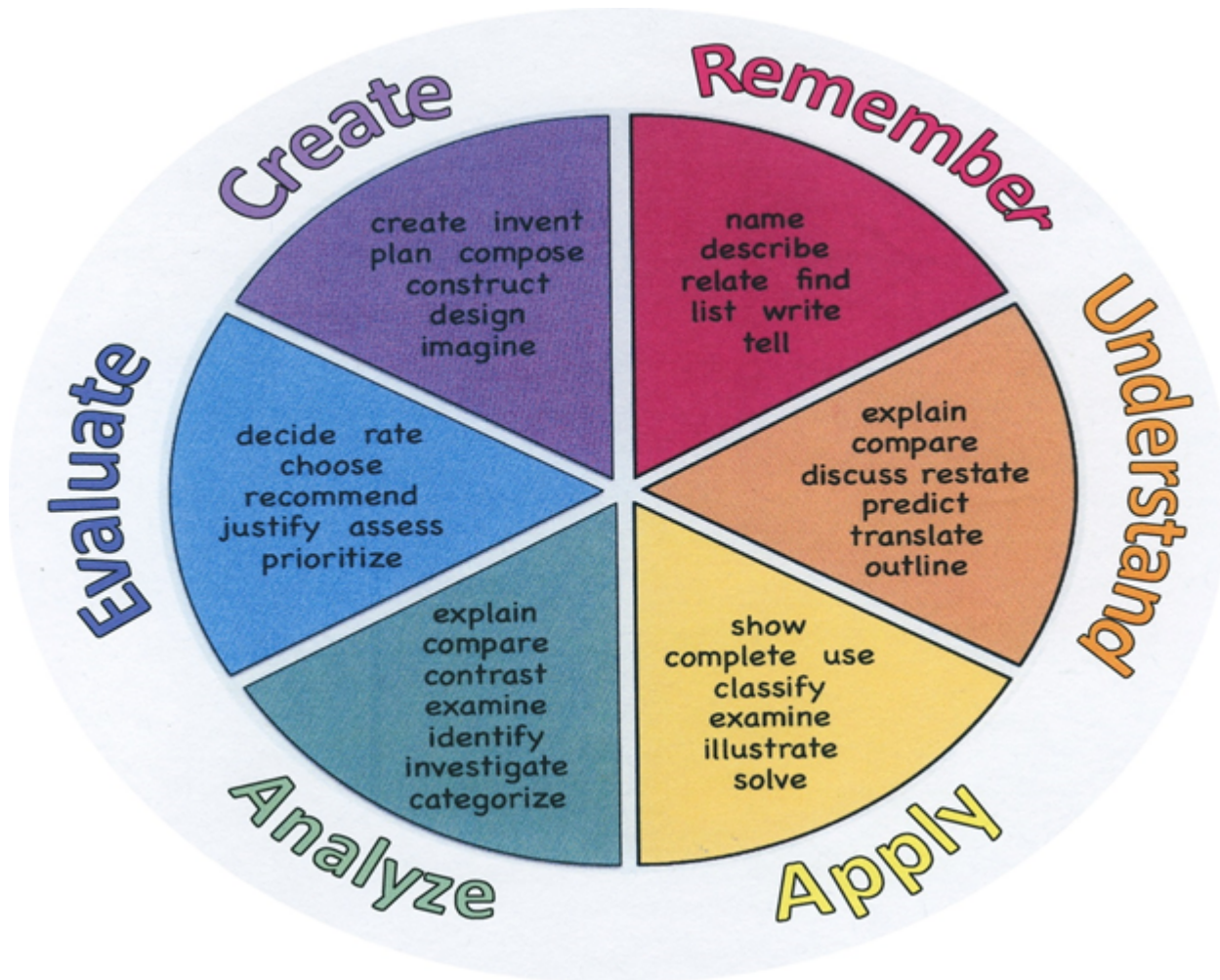
Paraphrase  
Represent  
Restate  
Rewrite  
Select  
Show  
Summarize  
Tell  
Translate  
Associate  
Compute  
Convert  
Discuss  
Estimate  
Extrapolate  
Generalize  
Predict

Add  
Calculate  
Change  
Classify  
Complete  
Compute  
Discover  
Divide  
Examine  
Graph  
Interpolate  
Manipulate  
Modify  
Operate  
Subtract

Detect  
Diagram  
Discriminate  
Illustrate  
Outline  
Point out  
Separate

Rate  
Support  
Test

Drive  
Devise  
Generate  
Integrate  
Prescribe  
Propose  
Reconstruct  
Revise  
Rewrite  
Transform



- Vocabulary Game- Guess the Word
- Unit Project- Explore Ocean Water
- Performance Task - Map and Island
- Student collaboration to build on prior knowledge
- Engineer it activity

## **Assessment Evidence - Checking for Understanding (CFU)**

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- Compare & Contrast
- Describe
- HMH End-of-Year Test (Benchmark)
- HMH Mid-Year Test (Benchmark)
- HMH Performance-based Assessment (Alternative)
- Illustration
- Quizzes (Formative)
- Think, Pair, Share
- Unit tests (Summative)

## **Primary Resources & Materials**

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HMH Science Dimensions: Teacher Edition, Student workbooks, online resources

HMH Equipment & Safety Kits

HMH Science Dimensions S&E Leveled Readers

- On Level: Why Are Resources Important?
- Extra Support: Why Are Resources Important?
- Enrichment: All About Rocks

## **Ancillary Resources**

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Additional Resources:

- online resources to provide further information to students
  1. [mysteryscience.com](http://mysteryscience.com)
  2. [superteacher.com](http://superteacher.com)
  3. using a map and compass rose - nationalgeographic.com - <https://www.nationalgeographic.org/activity/cardinal-directions-and-maps/>

4. The Changing Earth Journal -

<https://www.sausd.us/cms/lib/CA01000471/Centricity/Domain/105/Changing%20Earth%20Learning%20Journal.pdf>

- vocabulary cards
- word wall
- posters and anchor charts

## Technology Infusion

Technology available:

- SMART Technology
- Online Websites (youtube, Teachtube, discovered)
- Computer Access (i.e., use Google classroom to have students answer a question as an exit ticket or to share a slide show presentation about the subject)
- Online activities and assessments (listed above)

### Win 8.1 Apps/Tools Pedagogy Wheel

Originally taken from <http://www.coetail.com/xzimmer/files/2013/02/iPadagogy-Wheel.001.jpg>  
And adapted for Windows 8.1 devices by Charlotte Beckhurst @CharBeckhurst



## **Alignment to 21st Century Skills & Technology**

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Mastery and infusion of **21st Century Skills & Technology** and their Alignment to the core content areas is essential to student learning. The core content areas include:

- English Language Arts;
- Mathematics;
- Science and Scientific Inquiry (Next Generation);
- Social Studies, including American History, World History, Geography, Government and Civics, and Economics;
- World languages;
- Technology;
- Visual and Performing Arts.

|                |  |
|----------------|--|
| CRP.K-12.CRP5  | Consider the environmental, social and economic impacts of decisions.  |
| CRP.K-12.CRP6  | Demonstrate creativity and innovation.   |
| 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.                        |
| TECH.8.1.2.B   | Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology. |
| TECH.8.2.2.C   | Design: The design process is a systematic approach to solving problems.   |

## **21st Century Skills/Interdisciplinary Themes**

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- Communication and Collaboration
- Creativity and Innovation
- Critical thinking and Problem Solving
- ICT (Information, Communications and Technology) Literacy
- Information Literacy
- Life and Career Skills
- Media Literacy

## **21st Century Skills**

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- Civic Literacy
- Environmental Literacy
- Financial, Economic, Business and Entrepreneurial Literacy
- Global Awareness
- Health Literacy



## **Differentiation**

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- Have students label a compass rose and map key/legend OR have them draw and label their own compass rose and create their own map key/legend.

- Use different organizers for comparing and contrasting ponds, lakes, rivers, and oceans. Maybe for some students they will only be comparing two or three different bodies of water, instead of four.

### **Differentiations:**

- Small group instruction
- Small group assignments
- Extra time to complete assignments
- Pairing oral instruction with visuals
- Repeat directions
- Use manipulatives
- Center-based instruction
- Token economy
- Study guides
- Teacher reads assessments allowed
- Scheduled breaks
- Rephrase written directions
- Multisensory approaches
- Additional time
- Preview vocabulary
- Preview content & concepts
- Story guides
- Behavior management plan
- Highlight text
- Student(s) work with assigned partner
- Visual presentation
- Assistive technology
- Auditory presentations
- Large print edition
- Dictation to scribe
- Small group setting

### **Hi-Prep Differentiations:**

- Alternative formative and summative assessments
- Choice boards
- Games and tournaments
- Group investigations
- Guided Reading
- Independent research and projects
- Interest groups
- Learning contracts
- Leveled rubrics
- Literature circles

- Multiple intelligence options
- Multiple texts
- Personal agendas
- Project-based learning
- Problem-based learning
- Stations/centers
- Think-Tac-Toes
- Tiered activities/assignments
- Tiered products
- Varying organizers for instructions

### **Lo-Prep Differentiations**

- Choice of books or activities
- Cubing activities
- Exploration by interest
- Flexible grouping
- Goal setting with students
- Jigsaw
- Mini workshops to re-teach or extend skills
- Open-ended activities
- Think-Pair-Share
- Reading buddies
- Varied journal prompts
- Varied supplemental materials

### **Special Education Learning (IEP's & 504's)**

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- When students are making a map, determine who might benefit from being provided with a map of the classroom with windows and door already marked to get them started or giving them a key to work with instead of requiring that they make their own from scratch.

- Students work with an assigned partner to work on a map together of someplace they are both familiar with - the classroom, the cafeteria, school playground, local park)

- additional time for skill mastery
- assistive technology
- behavior management plan
- center-based instruction
- check work frequently for understanding
- computer or electronic device utilized
- extended time on tests/quizzes

- have student repeat directions to check for understanding
- highlighted text visual presentation
- modified assignment format
- modified test content
- modified test format
- modified test length
- multiple test sessions
- multi-sensory presentation
- preferential seating
- preview of content, concepts, and vocabulary
- provide modifications as dictated in the student's IEP/504 plan
- reduced/shortened reading assignments
- secure attention before giving instruction/directions
- shortened assignments
- student working with an assigned partner
- teacher initiated weekly assignment sheet
- use open book, study guides, test prototypes

## **English Language Learning (ELL)**

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- Have students label their map in their native language and then translate to English.
- Label the points on a compass rose using a word bank.

- using videos, illustrations, pictures, and drawings to explain or clarify
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning;
- allowing students to correct errors (looking for understanding)
- allowing the use of note cards or open-book during testing
- decreasing the amount of work presented or required
- having peers take notes or providing a copy of the teacher's notes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- teaching key aspects of a topic - eliminate nonessential information
- tutoring by peers
- using computer word processing spell check and grammar check features
- using true/false, matching or fill in the blank tests in lieu of essay tests

## **At Risk**

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- Give students a local map and have them show me and explain how they would walk home from school.

- allowing students to correct errors (looking for understanding)
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning
- allowing students to select from given choices
- allowing the use of note cards or open-book during testing
- collaborating (general education teacher and specialist) to modify vocabulary, omit or modify items to reflect objectives for the student, eliminate sections of the test, and determine how the grade will be determined prior to giving the test.
- decreasing the amount of work presented or required
- having peers take notes or providing a copy of the teacher's notes
- marking student's correct and acceptable work, not the mistakes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- teaching key aspects of a topic - eliminate nonessential information
- tutoring by peers
- using authentic assessments with real-life problem solving
- using true/false, matching, or fill in the blank tests in lieu of essay tests
- using videos, illustrations, pictures, and drawings to explain or clarify

## **Talented and Gifted Learning (T&G)**

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- Make a treasure map and "plant" a prize (buried treasure in the form of erasers, pencils, a homework pass, or other) which other students will win if they can read the map and follow the path laid out on the map.

- above grade level placement option for qualified students
- advanced problem solving
- allow students to work at a faster pace
- cluster grouping
- complete activities aligned with above grade level text using benchmark results
- create a blog or social media page about their unit
- create a plan to solve an issue presented in the class or in a text
- debate issues with research to support arguments
- flexible skill grouping within a class or across grade level for rigor
- Higher order, critical & creative thinking skills, and discovery
- Multi-disciplinary unit and/or project
- teacher-selected instructional strategies that are focused to provide challenge, engagement, and

growth opportunities

- utilize exploratory connections to higher-grade concepts
- Utilize project-based learning for greater depth of knowledge