



Exploring Deep-Ocean Water Masses

Math Standards

ALGEBRA AND FUNCTIONS

- 1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.
- 1.2 Determine when and how to break a problem into simpler parts.
- 2.0 Students use strategies, skills, and concepts in finding solutions:**
- 2.1 Use estimation to verify the reasonableness of calculated results.
- 2.2 Apply strategies and results from simpler problems to more complex problems.
- 2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.
- 2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.

MEASUREMENT AND GEOMETRY

- 1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:**
- 1.1 Compare weights, capacities, geometric measures, times, and temperatures within and between measurement systems (e.g., miles per hour and feet per second, cubic inches to cubic centimeters).
- 1.2 Construct and read drawings and models made to scale.
- 1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the so.
- 2.0 Understand and use coordinate graphs to plot simple figures, determine lengths and areas related to them, and determine their image under translations and reflection solutions; and use dimensional analysis to check the reasonableness of the answer.

Science Standards

EARTH IN THE SOLAR SYSTEM (Earth Sciences)

1. Principles of chemistry underlie the functioning of biological systems. As a basis for understanding this concept:
 - a. Students know that carbon, because of its ability to combine in many ways with itself and other elements, has a central role in the chemistry of living organisms.
 - b. Students know that living organisms are made of molecules consisting largely of carbon, hydrogen, nitrogen, oxygen, phosphorus, and sulfur.
 - c. Students know that living organisms have many different kinds of molecules, including small ones, such as water and salt, and very large ones, such as carbohydrates, fats, proteins, and DNA.

INVESTIGATION AND EXPERIMENTATION

2. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. Students will:
 - a. Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.
 - b. Identify and communicate sources of unavoidable experimental error.
 - c. Identify possible reasons for inconsistent results, such as sources of error or uncontrolled conditions.
 - d. Formulate explanations by using logic and evidence.
 - e. Distinguish between hypothesis and theory as scientific terms.
 - f. Recognize the usefulness and limitations of models and theories as scientific representations of reality.



*Standards provided by Chuck Dichiera
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