

200302

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**POLICY 2520.3**  
**SCIENCE CONTENT STANDARDS AND OBJECTIVES FOR WEST**  
**VIRGINIA SCHOOLS**

**Science Content Standards K-12**

**Properties of Earth Materials**

**SC.K.4.12** observe and compare differences in earth materials.

**First Grade Science Content Standards and Objectives**

**Characteristics of Organisms**

**SC.1.4.2** identify that most living things need water, food, light and air.

**Organisms and Environments**

**SC.1.4.5** depict movement of living things in air, water and on land. (e.g., birds flying, fish swimming, worms burrowing in soil).

**Properties of Earth Materials**

**SC.1.4.19** investigate and compare the properties of soil (e.g., sand, clay, humus).

**Second Grade Science Content Standards and Objectives**

**Properties of Objects and Materials**

**SC.2.4.7** demonstrate that solids, liquids and gases take up space.

**Changes in Earth and Sky**

**SC.2.4.13** examine changes in the earth's surface (e.g., weathering, erosi.

**SC.2.4.15** observe and describe different types of precipitation.

## **Third Grade Science Content Standards and Objectives**

### **Science as Inquiry Objectives**

**Students will:**

**SC.3.2.4** use scientific instruments and everyday materials to investigate the natural world (e.g., graduated cylinder, hand lens, metric ruler, magnets, weather instruments, thermometer, calculators).

**SC.3.2.8** test variables (e.g., those that affect plant growth; speed; action of water on soil; shadow formation)

### **Changes in Earth and Sky**

**SC.3.4.16** explore the eroding of different materials by water and wind (e.g., sand, mud pile and rocks).

### **Properties of Earth Materials**

**SC.3.4.22** identify geographical features using a model or map (e.g., mountains, rivers, valleys, lakes, glaciers, volcanoes).

## **Fourth Grade Science Content Standards and Objectives**

### **Organisms and Environments**

**SC.4.4.8** construct and explain models of habitats, food chains, and food webs.

### **Changes in Earth and Sky**

**SC.4.4.27** compare and explain the relative time differences to erode materials (e.g., a sand pile, mud pile, rock pile).

## **Fifth Grade Science Content Standards and Objectives**

### **Structure of the Earth System**

**SC.5.4.19** identify and describe natural landforms, how they change and impact weather and climate.

**SC.5.4.20** use a variety of instruments and sources to collect and display weather data to describe weather patterns (e.g., temperatures, wind direction, wind speed, precipitation).

SC.5.4.21 compare and explain the different rates of weathering, erosion and deposition in certain materials.

SC.5.4.22 identify land features and elevations on a topographical map.

SC.5.4.23 identify resources as being renewable or non-renewable.

## **Sixth Grade Science Content Standards and Objectives**

### **Structure and Properties of Matter**

SC.6.4.13 use indicators to identify substances as acidic, basic or neutral.

## **Seventh Grade Science Content Standards and Objectives**

### **Structure and Function in Living Systems**

SC.7.4.6 use pictures to show cyclical processes in nature (e.g., water cycle, nitrogen cycle, and carbon cycle).

### **Structure of the Earth System**

SC.7.4.28 interpret and create topographical maps.

## **Eighth Grade Science Content Standards and Objectives**

### **Populations and Ecosystems**

SC.8.4.10 trace matter and energy flow in a food web as it goes from sunlight to producers to consumers, design an environment in which the chemical and energy needs for the growth, reproduction and development of plants are met (e.g., food pyramids, decomposition).

### **Structure of the Earth System**

SC.8.4.25 summarize problems related to water on earth as a life sustaining substance (e.g., quality and quantity of surface and ground water).

## **Ninth Grade Science Content Standards and Objectives**

### **Geochemical Cycles**

SC.9.4.31 use models to describe interactive cycles such as the water, the nitrogen and the carbon dioxide cycles.

**Origin and Changes in the Earth Systems and Universe**

SC.9.4.35 describe the effects of the movement of subsurface water.

SC.9.4.39 interpret topographic maps, weather maps and charts, and astronomical models such as solar systems, galaxies, constellations, stellar types and stellar evolution.

**Tenth Grade Science Content Standards and Objectives**

SC.10.2.6 use appropriate technology solutions (e.g., computer, CBL, probe interfaces, software) to measure and collect data; interpret data; analyze and/or report data; interact with simulations; conduct research; and present and communicate conclusions.

**Energy in the Earth System**

SC.10.4.32 observe and describe the effects of water on the earth's surface (e.g., changes in particle size, slope, velocity).

**Eleventh and Twelfth Grade Science Content Standards and Objectives**

**Advanced Biology (11/12) Content Standards and Objectives**

**Environment and Ecosystems**

AB.4.29 investigate and discuss ecology as the interaction of living organisms and their nonliving environment.

AB.4.30 trace the energy flow through an ecosystem.

**Biology - Technical Conceptual (11/12) Content Standards and Objectives**

**Conservation and Human Impact on the Environment**

BTC.4.9 explain common problems related to conservation, use, supply and quality of water.

BTC.4.11 describe landfills and sewage treatment facilities and how they work.

**BTC.4.13** use topographic maps and Geographic Information Systems (GIS) to investigate biological systems and patterns (e.g., land use).

**Populations and Ecosystems**

**BTC.4.19** investigate soil and soil organisms.

**BTC.4.20** explain the mechanics of composting.

**Advanced Environmental Earth Science (11/12) Content Standards and Objectives**

**Geology**

**AES.4.10** identify and describe agents and processes of degradation (e.g., weathering by gravity, wind, water, and ice).

**Environment**

**AES.4.30** explore the relationships between human consumption of natural resources and the stewardship responsibility for reclamations including disposal of hazardous and non-hazardous waste.

**AES.4.32** explain common problems related to the conservation, use, supply and the quality of water.

**AES.4.37** investigate which federal and state agencies have responsibility for environmental monitoring and actions.