

# Soil and Land CDE

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May, 2008

## Career Development Purpose and Objectives:

### **Purpose**

Soil is one of the most, if not most important natural resources of our environment. Soil supports and influences the crops we grow for food and fiber, the water we drink, and the air we breathe. The soils of the world fit for plant growth must sustain all the plants, animals and humans that make the Earth their home. The soil acts as a filter for the water entering the groundwater supply, as well as interacting with or being eroded by the water that flows over the surface. Soil has a direct effect on the air we breathe when it becomes airborne and is evident when dust settles or obscures vision. Soil takes long periods of time to develop but can be destroyed or eroded away in very short periods. It is only through proper stewardship of soil that life on Earth can be sustained and improved.

### **Objectives**

Enables each participant to learn how to recognize the physical features of the soil.

Determine land capability for crop production

Evaluate management practices needed for proper stewardship

Investigate the soils in the region, the environment that surrounds them and their effect on their daily lives.

Related Content Standards – Humanities:

**Standard 1: Acquisition and use of language**

**Goal 1.1: Listening**

7-12.WL1.1.1.1 Comprehend basic vocabulary in isolation and in context.

7-12.WL1.1.1.2 Capture essential information from everyday conversations and short passages (e.g., cognates, context clues).

**Goal 1.2: Speaking**

7-12.WL1.1.2.1 Use basic vocabulary to respond to familiar prompts.

7-12.WL1.1.2.2 Express preferences, desires, opinions, and feelings.

7-12.WL1.1.2.3 Use appropriate level of politeness in simulated social exchanges.

**Goal 1.3: Reading**

7-12.WL1.1.3.1 Decode written text, diacritical marks, and symbolic systems.

**Standard 2: Critical Thinking**

**Goal 2.1: Analysis of Language Elements and Products**

7-12.WL1.2.1.2 Derive meaning from word order.

Related Content Standards – Language Arts:

None

## **8-9 Grade Math**

### **Standard 1: Number and Operation**

#### **Goal 1.1: Understand and use numbers.**

9.M.1.1.2 Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, including application in real world situations. (347.01.a)

9.M.1.1.5 Solve problems using number theory concepts (factors, multiples, primes). (347.01.d)

#### **Goal 1.2: Perform computations accurately.**

9.M.1.2.1 Use the order of operations and perform operations with rational numbers. (347.02.a)

#### **Goal 2.4: Apply appropriate techniques and tools to determine measurements.**

9.M.2.4.1 Determine and use appropriate units. (349.01.a)

9.M.2.4.2 Approximate error in measurement situations.

## **9-10 Grade Math**

### **Standard 1: Number and Operation**

#### **Goal 1.3: Estimate and judge reasonableness of results.**

9-10.M.1.3.1 Apply number sense to everyday situations and judge reasonableness of results. (347.03.a)

9-10.M.1.3.2 Identify that error accumulates in a computation when there is rounding. (349.05.b)

**Goal 2.2: Apply the concepts of rates, ratios, and proportions.**

9-10.M.2.2.1 Use rates, ratios, proportions, map scales, and scale factors (one- and two-dimensional) in problem-solving situations. (349.03.a)

9-10.M.2.2.2 Apply concepts of rates and direct and indirect measurements.

9-10.M.2.2.3 Construct equivalent units, comparable units, and conversions. (349.02.a)

**Goal 2.3: Apply dimensional analysis.**

9-10.M.2.3.1 Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time, and temperature. (349.04.a)

**Goal 4.5: Use reasoning skills.**

10.M.4.5.1 Use logic to make and evaluate mathematical arguments. (348.02.b)

Related Content Standards – Science:

## **9-10 Grade Biology**

### **Standard 1: Nature of Science**

#### **Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills**

9-10.B.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)

9-10.B.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)

9-10.B.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)

9-10.B.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)

9-10.B.1.6.5 Analyze alternative explanations and models. (649.01e)

9-10.B.1.6.6 Communicate and defend a scientific argument. (649.01f)

#### **Goal 1.8: Understand Technical Communication**

9-10.B.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)

## **8-9 Grade Earth Science**

### **Standard 1: Nature of Science**

#### **Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills**

8-9.ES.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)

8-9.ES.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)

8-9.ES.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)

8-9.ES.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)

8-9.ES.1.6.5 Analyze alternative explanations and models. (649.01e)

8-9.ES.1.6.6 Communicate and defend a scientific argument. (649.01f)

8-9.ES.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)

**Goal 1.8: Understand Technical Communication**

8-9.ES.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)

**8-9 Grade Physical Science**

**Standard 1 Nature of Science**

**Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills**

8-9.PS.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)

8-9.PS.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)

8-9.PS.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)

8-9.PS.1.6.5 Analyze alternative explanations and models. (649.01e)

8-9.PS.1.6.6 Communicate and defend a scientific argument. (649.01f)

8-9.PS.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)

Related Content Standards – Social Studies Economics:

None