

SOIL

Teacher Guide

Page 3 Properties of Soil

1. D. Humus

2. C. 60

3. Answers will vary. Sample Answer: Food is produced and humans live on a very thin layer of soil, and it is important to take care of that soil. Without healthy soil, we would be unable to produce food for the population.

Page 4 Soil Logic Puzzle

Student	Clay	Silt	Sand
Haley	X	X	Yes
Tiffany	Yes	X	X
Rick	X	Yes	X

Page 5 Word Scramble

1. Root
2. Nutrients
3. Water
4. Crops
5. Sunlight

Secret Word: Soil

Page 7 Nutrients for Plants

Answers may vary. Sample answer: As consumers, people depend on plants for essential nutrients. Producers, like plants, contain important nutrients for humans to be healthy, and without those nutrients, humans develop illnesses, such as brittle bones. Plants also need nutrients to grow otherwise they will have deficiencies.

Page 10: Accept any appropriate response.

Page 14: Potassium – Funny word, fun game

White Beans, Spinach, Baked Potatoes, Bananas, Fish

Page 16: Photosynthesis

1. Oxygen is released, 2. Glucose is formed

Page 17: Crossword

Across:

5. Consumer: An organism that generally gets food by feeding on other organisms or organic matter.

7. Deficiency: A lack or defect

8. Nitrogen: Helps plants stay green and healthy

9. Potassium: Helps plants from diseases, plus cold and dry weather.

Down

1. Imbalance: Lack of equality or balance.

2. Porosity: The amount of space in the soil that can hold either air or water.

3. Photosynthesis: How plants convert sunlight to energy.

4. Producer: In science, an organism capable of producing their own food, such as through photosynthesis.

6. Soil test: A method of testing soil to see what nutrients are missing

9. Phosphorus: a nutrient that helps plants catch the sun's energy

10. Sand: the largest soil particles category.

Page 18: Test your brain

Points	Nutrients for Plants	Soil Test	Properties of Soil
50-60 points	Clue: The result from a calcium deficiency in humans. Answer: What is <u>brittle bones</u> ?	Clue: Provides information and analysis about a soil sample. Answer: What is <u>soil test</u> ?	Clue: The upper, thin layer of soil. Answer: What is <u>top soil</u> ?
40-50 points	Clue: A nutrient bank for plants; it contains most of the essential plant nutrients. Answer: What is <u>soil</u> ?	Clue: The depth of a hole when gathering a soil sample. Answer: What is <u>six inches</u> ?	Clue: Constant exposure to wind and rain that causes rock to break down. Answer: How is <u>soil</u> made?
30-40 points	Clue: Occurs when not enough of a nutrient is available to keep a plant healthy. Answer: What is <u>deficiency</u> ?	Clue: Your county's extension agent, farmers' co-ops, and possible a local feed store. Answer: What are <u>places that analyze soil</u> ?	Clue: Composed of organic material, materials from rock and inorganic material. Answer: What is <u>top soil</u> ?
20-30 points	Clue: The missing element when a plant is deficient and has large yellow sections on its leaves. Answer: What is <u>nitrogen</u> ?	Clue: Contains general directions for amending the soil and specific instructions for the soil sample. Answer: What is <u>soil analysis</u> ?	Clue: Small soil particles that measure less than 0.002 millimeters. Answer: What is <u>clay</u> ?
10-20 points	Clue: The three main nutrients for plants. Answer: What are <u>nitrogen, phosphate, and potassium</u> ?	Clue: To "fix" the soil Answer: What is <u>amend</u> ?	Clue: The amount of space in the soil that can hold either water or air. Answer: What is <u>porosity</u> ?



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