Name _____ Teacher _____ Date _____

# 6.3: Plants Unit Posttest

**1.** The dry wood from a large oak tree can weigh 10,000 pounds. Where do you think the dry wood of an oak tree comes from?

**a) Select True or False for the following statements.**

| | | Some of the dry wood: |
|---|---|---|
| True | False | *is created by the tree.* |
| True | False | *comes from the air.* |
| True | False | *comes from sunlight.* |
| True | False | *comes from water.* |
| True | False | *comes from soil nutrients.* |

**b) Which ONE of the following do you think provides the MOST mass to the dry wood of the tree?**

a. Mass created by the tree

b. Air

c. Sunlight

d. Water

e. Soil nutrients

**c) Explain your choices. Where do you think the dry wood of an oak tree comes from?**

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**d) How do you think MOST of the matter got into the oak tree? Select ONE of the following:**

a. Most of the matter came in through the tree's roots.

b. Most of the matter came in through the tree's leaves.

c. The growing tree made most of the matter when its cells divided to make new cells.

**e) Explain your choice. Why did you choose the answer you did about how most of the matter got in the oak tree?**

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**2.** Grass needs energy to live and grow. Where does grass get its energy?

**a) Select True or False for the following statements.**

| | | Some of the energy in grass: |
|---|---|---|
| True | False | *comes from the air.* |
| True | False | *comes from sunlight.* |
| True | False | *comes from water.* |
| True | False | *comes from soil nutrients.* |
| True | False | *is created by the grass.* |

**b) Which ONE of the following do you think provides the MOST energy to the grass?**

a. Energy stored in the air

b. Energy from sunlight

c. Energy stored in water

d. Energy stored in soil nutrients

e. Energy that the grass created

**c) Explain your choices. How does the energy get into the grass?**

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**3.** A class is investigating how plants grow. The teacher asks the students, “Where does most of the mass of a plant come from?”

**a) Three students shared their ideas about what happened. Do you agree or disagree with each student’s claim?**

Agree Disagree Mike: "I think a growing plant gains most of its mass from nutrients in the soil."

Agree Disagree Lucia: "I think a plant gains most of its mass from gases in the air."

Agree Disagree Oscar: “I think a plant gains most of its mass from the sunlight.”

**b) Provide an explanation. Why did you agree or disagree with each student’s claim?**

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The class does an experiment to investigate how plants grow. They started by selecting six **identical** plants. Three of those plants were grown in regular soil. The other three plants had extra soil nutrients added to the soil in their pots. The class put all six plants under **identical** conditions (i.e., the same light conditions, the same watering conditions) and let them grow for one month. At the end of the month, the class weighed each of the six plants and recorded their weights in the table below. They also recorded the weight of the soil nutrients added to three of the pots.

| **Plant** | **Initial weight (g)** | **Added soil nutrients (g)** | **Final weight (g)** | **Plant growth (g)** |
|---|---|---|---|---|
| 1 | 30 | 0 | 50 | 20 |
| 2 | 31 | 0 | 52 | 21 |
| 3 | 29 | 0 | 48 | 19 |
| **Average** | **30** | **0** | **50** | **20** |
| 4 | 30 | 3 | 68 | 38 |
| 5 | 31 | 3 | 62 | 31 |
| 6 | 28 | 3 | 65 | 37 |
| **Average** | **30** | **3** | **65** | **35** |

**c) Which claim do you think is best supported by the data?**

a. Mike's claim

b. Lucia's claim

c. Oscar's claim

**d) Explain how the patterns in the data support the claim that you chose.**

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**e) What additional evidence would you collect to help show that the claim you chose is the best claim?**

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4**.** In the LIGHT, carbon dioxide gas moves into plant leaf cells and oxygen gas moves out.

**a) What do you think happens in the DARK?**

a. Carbon dioxide moves into plant leaf cells and oxygen moves out.

b. Oxygen moves into plant leaf cells and carbon dioxide moves out.

c. The leaf cells go dormant, so no gases move into or out of plant leaf cells.

d. Equal amounts of carbon dioxide and oxygen move both in and out of plant leaf cells.

**b) Explain your choice. What causes carbon dioxide or oxygen to move in or out of plant leaf cells in the dark?**

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Name _____ Teacher _____ Date _____

**5.** When a tree is alive it has energy stored in its living parts (roots, trunk, branches and green leaves). When the tree dies all the parts are still there (including fallen brown leaves).

**a) How much of the energy stored in the living tree is still there in the dead tree?**

a. ALL of the energy

b. MOST of the energy

c. SOME of the energy

d. A LITTLE of the energy

e. NONE of the energy

**b) Explain your answer. What kinds of energy are stored in the living tree? Where did they come from?**

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**c) What kinds of energy are stored in the dead tree (if any)? How are they connected to the energy in the living tree?**

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