Plants Unit – Practice Test Name _____Period _____

1. Investigating how a Prickly Pear grows and functions

A class is investigating how Prickly Pears grow. The teacher asks the students, “Where does most of the mass of a Prickly Pear come from?”

Three students shared their ideas about what happened.

a. Do you agree or disagree with what each student claims?

Agree Disagree	Maria: "I think a Prickly Pear gains most of its mass from gases in the air."
Agree Disagree	Adan: “I think a Prickly Pear gains most of its mass from the sunlight
Agree Disagree	Todd: "I think a growing Prickly Pear gains most of its mass from nutrients in the soil."

b. Provide an explanation. Why did you agree or disagree with each student's claim that you did?

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_____
_____
_____

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

Prickly Pears with regular soil			Prickly Pears with regular soil plus soil nutrients		
Plant	Mass of nutrients added (grams)	Mass gained by plant (grams)	Plant	Mass of nutrients added (grams	Mass gained by plant (grams)
1	0	50	4	3	78
2	0	51	5	3	71
3	0	49	6	3	77
Average	**0**	**50**	**Average**	**3**	**75**

d. Whose idea do you think is best supported by the data? (Circle one choice.)
    a. Maria's
    b. Adan's
    c. Todd's

    Explain how the patterns in the data support the claim that you chose.
    _____
    _____
    _____
    _____

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

2. A question about how Lodgepole Pines grow and function

The dry wood from a large Lodgepole Pine can weigh 11,000 pounds. Where do you think the dry wood of a Lodgepole Pine comes from? Select True or False for the following statements:
T F Some of the dry wood is *created* by the tree.
T F Some of the dry wood comes from the air.
T F Some of the dry wood comes from sunlight.
T F Some of the dry wood comes from water.
T F Some of the dry wood comes from soil nutrients.

Which ONE of the following do you think provides the MOST mass to the dry wood of the Lodgepole Pine?
a. Wood created by the tree
b. Air
c. Sunlight
d. Water
e. Soil nutrients

Explain your choices. Where do you think the dry wood of a Lodgepole Pine comes from?
_____
_____
_____

3. **A question about how Spartinas grow and function**

Spartina needs **energy** to live and grow. Where does the Spartina get its **energy**? Select True or False for the following statements:
T F Some of the energy in Spartina comes from the air.
T F Some of the energy in Spartina comes from sunlight.
T F Some of the energy in Spartina comes from water.
T F Some of the energy in Spartina comes from soil nutrients.
T F Some of the energy is created by the Spartina.

Which ONE of the following do you think provides the MOST energy to the Spartina?
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 Spartina created

Explain your choices. Where does the energy in the Spartina come from?

_____
_____
_____

4. **A question about how Prickly Pears grow and function**

When a Prickly Pear is alive, it has energy stored in its living parts (roots, green body, spines). When the Prickly Pear dies all the parts are still there. How much of the energy stored in the living Prickly Pear is still there in the dead Prickly Pear?
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

Explain your answer.

_____
_____

What kinds of energy are stored in the living Prickly Pear? Where did they come from?

_____
_____

What kinds of energy are stored in the dead Prickly Pear (if any)? How are they connected to the energy in the living Prickly Pear?

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