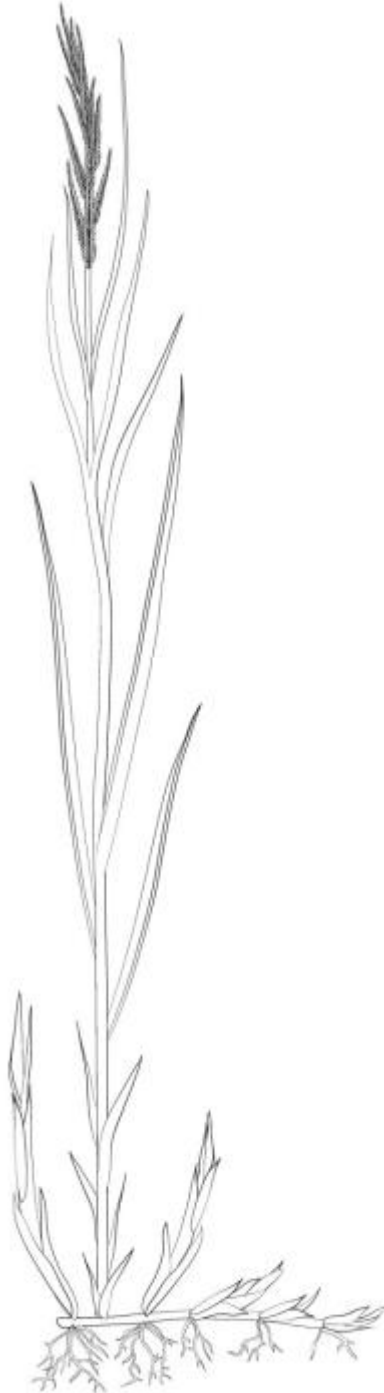


Activity 6.1: Spartina Worksheet

Draw and label arrows that represent the molecules that carbon atoms are in as they move into, through and out of the Spartina as it moves and grows.

Label each arrow to show the kind of molecules that the carbon atoms are in: large organic molecules (LOM), small organic molecules (SOM), or carbon dioxide (CO₂).



Four things that Spartina need to live and grow are water, soil nutrients, air, and sunlight. What happens to *water* inside the pine:

What happens to *soil nutrients* inside the Spartina:

What happens to *air* inside the Spartina:

What happens to *sunlight* inside the Spartina:

A. Investigating how a *Spartina* grows and functions

A class is investigating how a *Spartina* grows. The teacher asks the students, "Where does most of the mass of a *Spartina* come from?"

a. Three students shared their ideas about what happened. Do you agree or disagree with what each student claims?

Agree	Disagree	Mitch: "I think a growing <i>Spartina</i> gains most of its mass from nutrients in the soil."
Agree	Disagree	Andrea: "I think a <i>Spartina</i> gains most of its mass from gases in the air."
Agree	Disagree	Jamal: "I think a <i>Spartina</i> gains most of its mass from the sunlight."

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

c. The class does an experiment to investigate how a *Spartina* grows. They started by selecting six **identical** *Spartinas*. Three of those plants were 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 *Spartinas* and recorded their weights in the table below. They also recorded the weight of the soil nutrients added to three of the pots.

Spartinas with regular soil		
Plant	Mass of nutrients added (grams)	Mass gained by plant (grams)
1	0	30
2	0	31
3	0	29
Average	0	30

Spartinas with regular soil plus soil nutrients		
Plant	Mass of nutrients added (grams)	Mass gained by plant (grams)
4	3	48
5	3	41
6	3	47
Average	3	45

Whose idea do you think is best supported by the data? (Circle one choice.)

- a. Mitch's
- b. Andrea's
- c. Jamal's

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

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

B. 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 grass created

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

C. Something interesting about Spartina

What is something interesting that you learned about Spartina that makes this plant different from the radish plants you grew?
