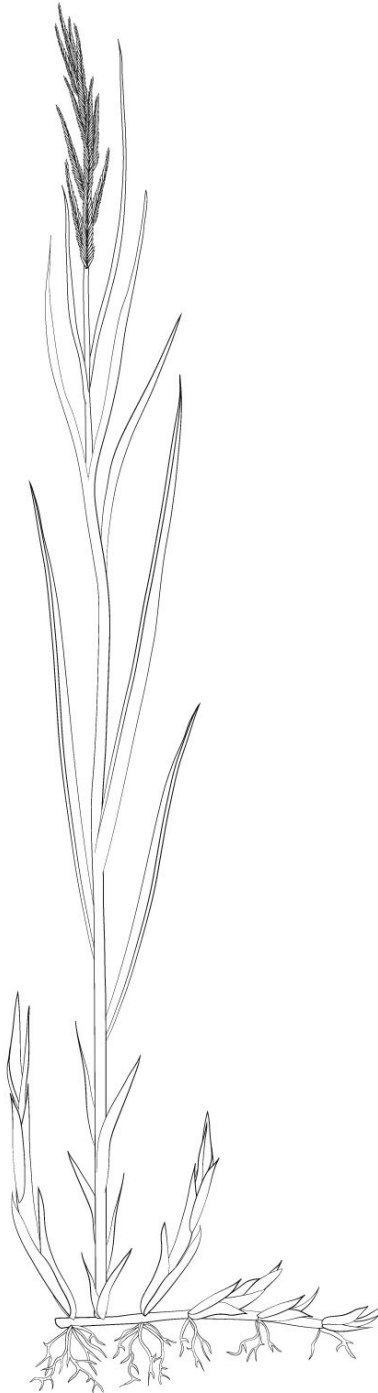


## 6.1: Smooth Cordgrass Worksheet

Draw and label arrows that represent the molecules that carbon atoms are in as they move into, through and out of the Smooth Cordgrass 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 ( $\text{CO}_2$ ).



**Your ideas about a Smooth Cordgrass' needs.** Four things that Smooth Cordgrasses need to live and grow are water, soil nutrients, air, and sunlight. What are your ideas about what happens to those four things *inside* a Smooth Cordgrass plant?

What happens to *water* inside Smooth Cordgrass?

---

---

---

---

What happens to *soil nutrients* inside Smooth Cordgrass?

---

---

---

---

What happens to *air* inside Smooth Cordgrass?

---

---

---

---

What happens to sunlight *light* inside Smooth Cordgrass?

---

---

---

---

**A. Investigating how a Smooth Cordgrass grows and functions**

A class is investigating how a Smooth Cordgrass plant grows. The teacher asks the students, "Where does most of the mass of a Smooth Cordgrass plant 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 Smooth Cordgrass gains most of its mass from nutrients in the soil."
Agree	Disagree	Andrea: "I think a Smooth Cordgrass plant gains most of its mass from gases in the air."

Agree	Disagree	Jamal: "I think a Smooth Cordgrass plant 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 Smooth Cordgrass grows. They started by selecting six **identical** Smooth Cordgrass plants. 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 Smooth Cordgrass plants and recorded their weights in the table below. They also recorded the weight of the soil nutrients added to three of the pots.

Smooth Cordgrass with regular soil		
Plant	Mass of nutrients added (grams)	Mass gained by plant (grams)
1	0	30
2	0	31
3	0	29
<b>Average</b>	<b>0</b>	<b>30</b>

Smooth Cordgrass 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
<b>Average</b>	<b>3</b>	<b>45</b>

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 Smooth Cordgrass grow and function**

Smooth Cordgrass needs energy to live and grow. Where does Smooth Cordgrass get its energy?

Select True or False for the following statements:

- T F Some of the energy in Smooth Cordgrass *comes from the air.*
- T F Some of the energy in Smooth Cordgrass *comes from sunlight.*
- T F Some of the energy in Smooth Cordgrass *comes from water.*
- T F Some of the energy in Smooth Cordgrass *comes from soil nutrients.*
- T F Some of the energy *is created by the Smooth Cordgrass .*

Which ONE of the following do you think provides the MOST energy to Smooth Cordgrass ?

- 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 Smooth Cordgrass come from?

---

---

---

---

**C. Something interesting about Smooth Cordgrass**

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

---

---

---