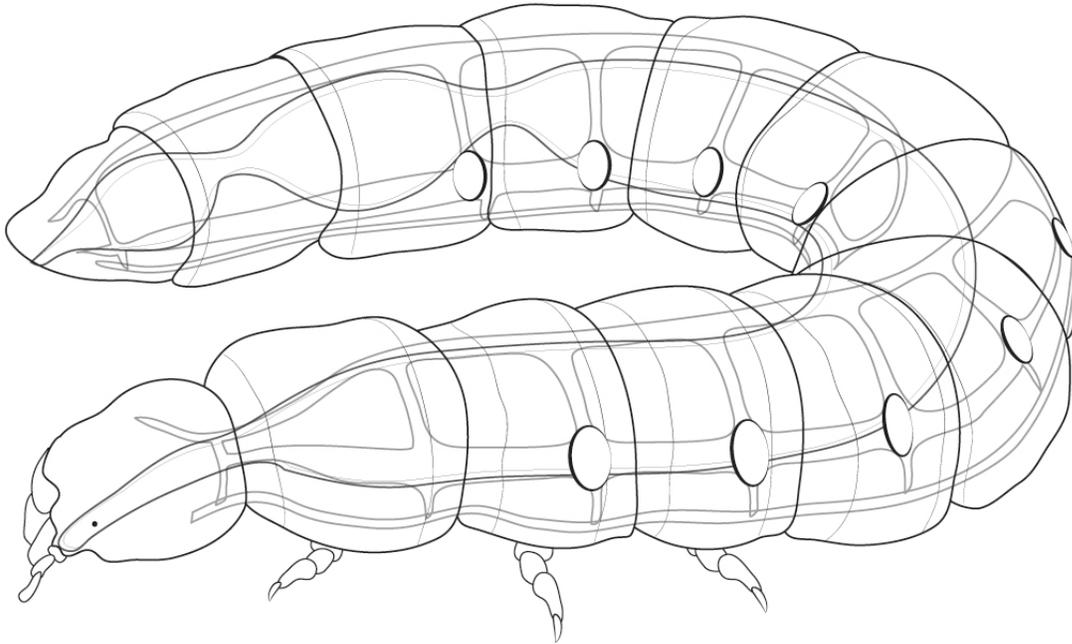


6.1: Mealworms Worksheet

Draw and label arrows that represent the molecules that carbon atoms are in as they move into, through and out of the mealworm 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).



What happens to the food the mealworm eats as it moves and grows?

How do a mealworm's cells get oxygen from the air when it grows and moves? What do they do with the oxygen?

A. Investigating how Mealworms grow and function

A class was interested in how mealworms grow. The teacher started the lesson by telling his students that a mealworm eats a lot of food each week but only gains a little bit of weight. The teacher asked, "What happened to the mass of the rest of the food?"

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

Agree	Disagree	Evan: "The mealworm's body turned the mass of the food into energy in order to grow."
Agree	Disagree	Madison: "The mealworm breathed out most of the extra mass of the food as gases, like CO ₂ ."
Agree	Disagree	Li: "The mealworm's body got rid of most of the extra mass of the food as solid waste (feces)."

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

c. The class generated some data. They measured the starting mass of 5 mealworms and put each mealworm in its own container. Then they gave each mealworm 0.3 grams of food and made sure the mealworms always had the same amount of water in their containers. After one week, the students measured the masses of the mealworms, leftover food and mealworm feces. Below are the data they generated.

Sample	Change in mealworm mass (g)	Change in food mass (g)	Mass of solid waste (g)
1	+0.02	-0.20	+0.04
2	+0.02	-0.21	+0.05
3	+0.03	-0.23	+0.05
4	+0.01	-0.19	+0.04
5	+0.04	-0.23	+0.07
Average	+0.02	-0.18	+0.05

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

- Evan's claim
- Madison's claim
- Li's claim

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

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

B. A question about how mealworms grow and function

When lots of mealworms are together in a small container, the container gets warm. How do you think food contributes to the mealworm's body heat?

C. Something interesting about mealworms

What is something interesting that you learned about mealworms from your readings and discussion?
