

NAME: _____

Aligned to the following standards:

ESS.03; FFA.PL-A; FFA.PG-J; FFA.CS-M; FFA.CS-N; AG-ENV3; AGPF01.03; CS.01; CCSS.RI.9-10.8; CCSS.SL.9-10.1.C; CCSS.RST.9-10.1; CCSS.RST.9-10.2; CCSS.RST.9-10.5; CCSS.RST.9-10.10; CCSS.WHST.9.10.2; ; CCSS.WHST.9.10.4; CCSS.WHST.9.10.7; ; CCSS.WHST.9.10.8; ; CCSS.WHST.9.10.9; CCSS.MP7; HS-ETS1-2; CRP.02; CRP.04; CRP.05; CRP.07; CRP.08; CRP.11

A Bin of Worms

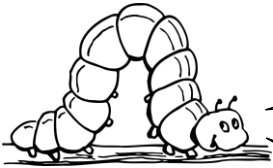
DIRECTIONS:

Answer the following questions as you watch the video "Vermicomposting SAE | Ethan Shelden," available at <https://vimeo.com/328434623>.

What is Ethan's SAE?

What is vermicomposting?

What test does he have to do to maintain the ideal worm environment?



What types of worms does Ethan use?

How do worms help the environment?



What steps did Ethan take to start his SAE?



Why did he choose to save money for certain items while spending more on other items?



What has his SAE taught him about work ethic? How did his work ethic improve?

NAME: _____

Aligned to the following standards:

ESS.03; FFA.PL-A; FFA.PG-J; FFA.CS-M; FFA.CS-N; AG-ENV3; AGPF01.03; CS.01; CCSS.RI.9-10.8; CCSS.SL.9-10.1.C; CCSS.RST.9-10.1; CCSS.RST.9-10.2; CCSS.RST.9-10.5; CCSS.RST.9-10.10; CCSS.WHST.9.10.2; ; CCSS.WHST.9.10.4; CCSS.WHST.9.10.7; ; CCSS.WHST.9.10.8; ; CCSS.WHST.9.10.9; CCSS.MP7; HS-ETS1-2; CRP.02; CRP.04; CRP.05; CRP.07; CRP.08; CRP.11

From Scraps to Black Gold

Part 1

DIRECTIONS:

Complete the activities below to learn how worms eat and make compost.

Suggested resource: <https://unclejimswormfarm.com/red-worms-eat-compost/>

1. Label the diagram of a worm digestive tract and explain what each part does.

The diagram shows a cross-section of a worm's body with its internal digestive tract highlighted in orange. The tract starts at the mouth on the left, moves through the crop, gizzard, and intestines, and ends at the anus on the right. Six boxes with lines pointing to specific parts of the tract are provided for labeling and explanation. A seventh box at the bottom asks about worm castings.

Label: _____
Explanation: _____

Label: _____
Explanation: _____

Label: _____
Explanation: _____

Label: _____
Explanation: _____

Label: _____
Explanation: _____

Label: _____
Explanation: _____

What are worm castings?

2. List four things worms love to eat and three things that should **not** be fed to them.



3. What is "black gold"? Why is it called that?

4. What are pre-digesters?
- A. Microbes in the worm's mouth that take the place of teeth
 - B. Bacteria, mold and fungi that break down the organic matter
 - C. Bad bacteria that compete with worms for food
 - D. None of the above

Part 2

DIRECTIONS:

NAME: _____

Did you know you can do vermicomposting virtually anywhere, even in a small urban apartment? Fill in the buckets below with each step for creating your own worm composting farm. If you work at it, you could even sell your "black gold"! Suggested resource: <https://www.thespruce.com/inexpensive-worm-bin-from-plastic-buckets-2540077>

1. What materials do you need to start a vermicomposting bin?



2. Explain why the bin is constructed with three buckets. (Be sure to explain the function of each bucket.)

3. On each bucket, describe what you need to do in each step to create your vermicomposting bin.

 Step 1	 Step 2	 Step 3	 Step 4
 Step 5	 Step 6	 Step 7	 Step 8

Aligned to the following standards:

ESS.03; FFA.PL-A; FFA.PG-J; FFA.CS-M; FFA.CS-N; AG-ENV3; AGPF01.03; CS.01; CCSS.RI.9-10.8; CCSS.SL.9-10.1.C; CCSS.RST.9-10.1; CCSS.RST.9-10.2; CCSS.RST.9-10.5; CCSS.RST.9-10.10; CCSS.WHST.9.10.2; ; CCSS.WHST.9.10.4; CCSS.WHST.9.10.7; ; CCSS.WHST.9.10.8; ; CCSS.WHST.9.10.9; CCSS.MP7; HS-ETS1-2; CRP.02; CRP.04; CRP.05; CRP.07; CRP.08; CRP.11