

2025 MCAS Sample Student Work and Scoring Guide

Grade 5 Science and Technology/Engineering Question 17: Constructed-Response

Reporting Category: Life Science

Practice Category: Investigations and Questioning

Standard: [5.LS.2.2](#) - Compare at least two designs for a composteur to determine which is most likely to encourage decomposition of materials.

Item Description: Identify what could be measured to determine how well a composteur works and describe changes to the composteur to make it work better.

This item can be found in the released item sets on the [MCAS Resource Center](#).

Scoring Guide

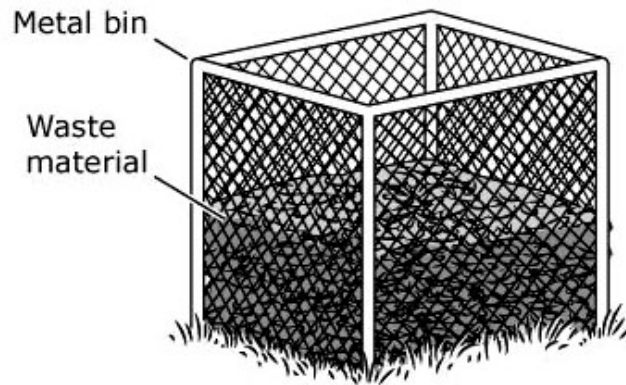
Select a score point in the table below to view the sample student response.

Score*	Description
3A	The response demonstrates a thorough understanding of how composters decompose materials. The response correctly identifies what the students should have measured to determine how well the composteur worked. The response also clearly explains how adding bacteria could make the composteur work better and clearly describes one other way the students could make the composteur work better.
3B	
2	The response demonstrates a partial understanding of how composters decompose materials.
1	The response demonstrates a minimal understanding of how composters decompose materials.
0	The response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.

*Letters are used to distinguish between sample student responses that earned the same score (e.g., 3A and 3B).

Score Point 3A**This question has three parts.**

Students tested a composter to determine how well it worked. The students added waste material to the composter. The composter is shown.



After several weeks, the students observed how well the composter worked.

Part A

Identify what the students should have measured to determine how well the composter worked.

The students should have measured the amount of broken down material in the mix, if the composter works then there will be a lot of broken down waste.

Part B

After their observation, the students added bacteria to the composter.

Explain how adding bacteria could make the composter work better.

The more bacteria in the compost means more decomposers to break down the materials for plant fertilizers or anything else you need it for.

Part C

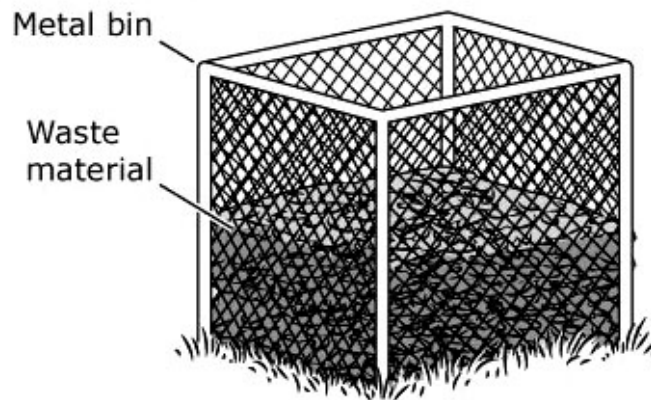
Describe one way, other than adding more bacteria, the students could make the composter work better.

The students can try mixing up the waste once or twice a week to mix the materials together and make them easier to break down.

Score Point 3B

This question has three parts.

Students tested a composter to determine how well it worked. The students added waste material to the composter. The composter is shown.



After several weeks, the students observed how well the composter worked.

Part A

Identify what the students should have measured to determine how well the composter worked.

They should have measured the waste material at first, then after the next several weeks they should have seen how well the waste has composted by measuring again.

Part B

After their observation, the students added bacteria to the composter.

Explain how adding bacteria could make the composter work better.

The bacteria could decompose the material making making the composter work faster.

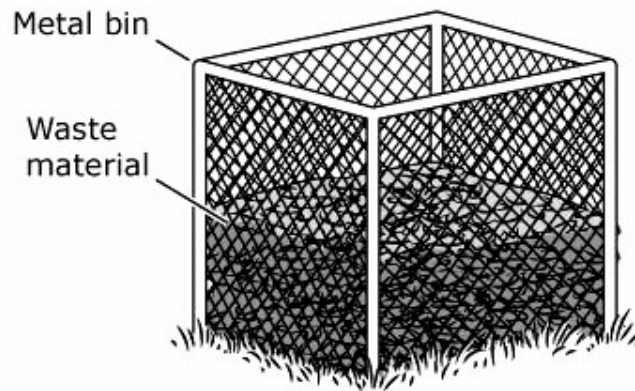
Part C

Describe one way, other than adding more bacteria, the students could make the composter work better.

They could add fungi so it could decompose even faster then it already did before.

Score Point 2**This question has three parts.**

Students tested a composter to determine how well it worked. The students added waste material to the composter. The composter is shown.



After several weeks, the students observed how well the composter worked.

Part A

Identify what the students should have measured to determine how well the composter worked.

They should have measured how much waste they had at first, and then how much waste they had after several weeks, and that would give them how well the composter worked

Part B

After their observation, the students added bacteria to the composter.

Explain how adding bacteria could make the composter work better.

Adding bacteria can make the composter work better because it could help break down the waste faster

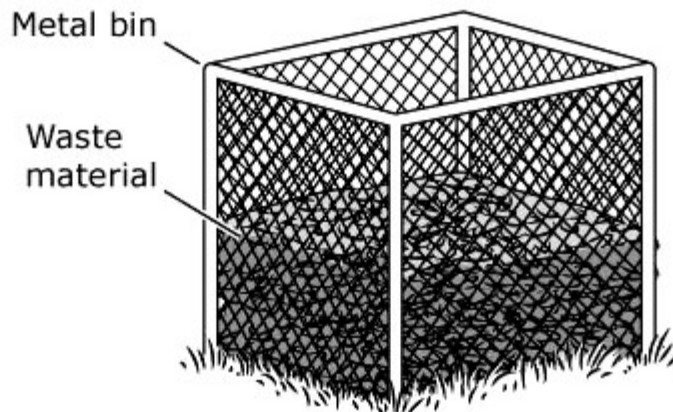
Part C

Describe one way, other than adding more bacteria, the students could make the composter work better.

Adding more bacteria can make the composter work better by breaking down the waste faster.

Score Point 1**This question has three parts.**

Students tested a composter to determine how well it worked. The students added waste material to the composter. The composter is shown.



After several weeks, the students observed how well the composter worked.

Part A

Identify what the students should have measured to determine how well the composter worked.

The students should have the sturdiness of the bin.

Part B

After their observation, the students added bacteria to the composter.

Explain how adding bacteria could make the composter work better.

Bacteria can make the bin work better because it decomposes the waste

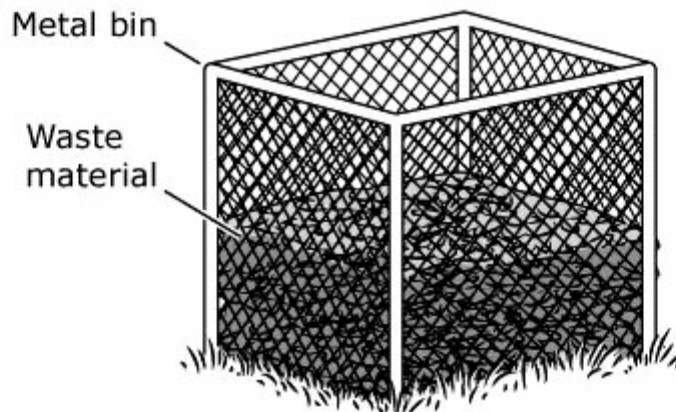
Part C

Describe one way, other than adding more bacteria, the students could make the composter work better.

The students can make the metal stronger.

Score Point 0**This question has three parts.**

Students tested a composter to determine how well it worked. The students added waste material to the composter. The composter is shown.



After several weeks, the students observed how well the composter worked.

Part A

Identify what the students should have measured to determine how well the composter worked.

They should measure the poles and the bottom part of the gate.

Part B

After their observation, the students added bacteria to the composter.

Explain how adding bacteria could make the composter work better.

It would make it better because your adding more chemical.

Part C

Describe one way, other than adding more bacteria, the students could make the composter work better.

They can add something else to make it work better.