

GRADE

Maine Science Assessment

Released Items (2022)



Use the information from Algae Bloom to answer **questions 1–5.**

Algae Bloom

Clair and Rashaun want to swim in Lake B near their homes, but it is covered with algae. However, Lake A, a few kilometers away, has clear water. Clair learns that pollutants from landfills can seep through the soil to reach the groundwater and also enter nearby streams as runoff.



Clair and Rashaun hope to find a solution to the algae problem. They listed their solutions in a table.

Solution	Image
Raised Barrier	Raised Barrier
Plastic Liner	Waste Plastic Liner
Shallow Channel	Shallow channel

- Rashaun claims that the landfill is the **most likely** cause of the algae growth. Which evidence supports this claim?
 - (A) The landfill has polluted the vegetation around Lake B.
 - B The landfill has polluted a stream that flows into Lake A.
 - C The landfill has polluted the stream that flows into Lake B.
 - D The landfill has polluted the groundwater that seeps into Lake A.
- 2. After determining how the pollution gets to Lake B, Clair wonders why pollution causes algae in the lake.

Which statement **best** describes why there are algae in Lake B?

- A Algae feed on the waste from human activities that pollute Lake B.
- B Lake A has less water and cannot hold as much pollution as Lake B.
- C Algae feed on the air pollution from the landfill that is blown into Lake B.
- D Lake A receives less pollution because it is further from the landfill than Lake B.
- **3.** Clair and Rashaun want to model how the pollutants make their way from the landfill to the lake.

What is the correct path that the pollutants take?

Enter 1, 2, 3, or 4 into **each** box to show the order of steps in the path, with 1 being the first step and 4 the last.



Lake B

Runoff



Stream



Waste from human activities

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4. After considering the different solutions to the problem, Clair decides that using a raised barrier will best prevent pollutants from the landfill from reaching Lake B.

Which statement **best** states whether this solution will work?

- (A) The solution will work because a raised barrier reduces runoff.
- B The solution will work because a raised barrier reduces seepage.
- C The solution will not work because a raised barrier will not reduce runoff.
- (D) The solution will not work because a raised barrier will not reduce seepage.
- **5.** Clair and Rashaun researched different solutions to prevent the pollution in the landfill from reaching Lake B.

Which solution from the table is the **best** solution to prevent algae from growing in Lake B? Identify a method and explain how this would prevent algae growth in Lake B.

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6. Keaton's family has many plants inside their house and outside in their garden. Keaton sees that some plants grow faster and look healthier than others. This causes Keaton to wonder which factors affect plant growth. He decides to perform an investigation. He places three similar plants in similar pots on the same windowsill. However, he changes some of the conditions under which the plants will grow for the next seven days.

Keaton makes a poster showing the results after seven days.



Keaton uses the data from his investigation to identify the factors that help plants grow.

Which **two** factors help plants grow the most? Choose **two**.

- (A) air
- (B) soil
- © sunlight
- D water

