

Quiz Question 1

Which of these statements best describes the magnetic field close to the poles of a bar magnet?

- A. The magnetic field points toward the N-pole and away from the S-pole.
- B. The magnetic field points toward the N-pole and toward the S-pole.
- C. The magnetic field points away from the N-pole and away from the S-pole.
- D. The magnetic field points away from the N-pole and toward the S-pole.

Feedback: Choice D is correct.

Quiz Question 2

Below is an image from the simulator of a bar magnet. At which of the four points shown is the strength of the magnetic field greatest?



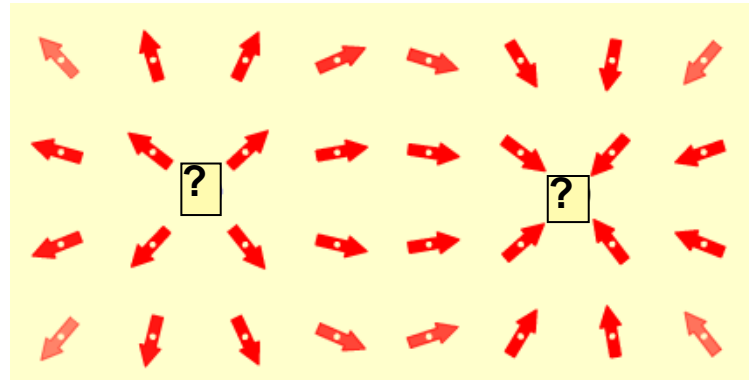
- A. Point A
- B. Point B
- C. Point C
- D. Point D



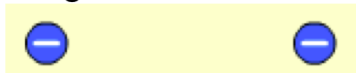

Feedback: Point A is the strongest, because the magnetic field is strongest at the magnetic poles. Even when the sensor is about one “pole width” (the width of the red “N” section of the magnet”) from the magnet, the magnetic field is stronger than it is just above the middle of the magnet (point B).

Quiz Question 3

To the right is an image from the simulator of the electric field around two charges, which have been hidden.

Which of the arrangements of charges shown and described below would produce an electric field with this pattern?



A. Two side-by-side positive charges. 	B. Positive charge on left, negative charge on right. 
C. Two side-by-side negative charges. 	D. Negative charge on left, positive charge on right. 

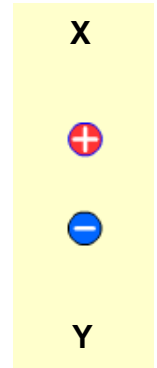
- A. Arrangement A
- B. Arrangement B
- C. Arrangement C
- D. Arrangement D

Feedback: Based on what you learned in this extension activity, arrangement B is the only one that could produced the electric field shown here.

Quiz Question 4

To the right is simulator image of an arrangement of a single + charge and single – charge. If you were to place an E-field sensor at points X and Y, in which direction would the force acting on the sensor point?

- A. Point downward at X and upward at Y.
- B. Point upward at X and downward at Y.
- C. Point downward at both X and Y.
- D. Point upward at both X and Y.



Feedback: Choice D is correct. Since X is closer to the positive charge, its contribution to the electric field at that point is stronger than that of the negative charge, so the electric field will point away from the positive charge—that is, it'll point upward. Likewise, since Y is closer to the negative charge, the electric field will point toward the negative charge. That is, it'll point upward.