Before you is a plastic surface and a contour map each representing the electric potential. A 1-cm height difference corresponds to an electric potential difference of 1 V.

Consider the Motion of a Positive Charge: If you were to place a positively charged particle at rest at the blue square, which way do you expect the particle to move?

- What direction is the force on the charged particle?
- Does the charged particle move toward higher or lower electric potential?
- Does the electric potential energy increase, decrease, or stay the same?

Consider the Motion of a Negative Charge: If you were to place a negatively charged particle at rest at the blue square, which way do you expect the negative charged particle to move?

- What direction is the force on the charged particle?
- Does the charged particle move toward higher or lower electric potential?
- Does the electric potential energy of the system increase, decrease, or stay the same?

Consider the Electric Field at the Blue Square: Draw a vector on the contour map to indicate $\vec{E}$ at the blue square.

- Explain your reasoning.
- Does your answer depend on the sign of the charge?
- How is the vector oriented with respect to the contour lines?

Consider the Electric Field at Several Points: Draw vectors at several additional points to represent $\vec{E}$, making sure the lengths of the vectors are qualitatively accurate. Choose points near the middle and edges of the map.

- How do the electric field vectors near the middle compare with the vectors near the edge of the map?
- How are the electric field vectors related to the equipotential lines?