

The electric field lines show which way it would push the puck if it were in that area. It also showed how the vectors would change if fields were close to each other.

The electric field lines show the **vector direction that a positively charged particle would do** if introduced near another positive or negative charge. If near the **negative charge**, the electric field line shows the **positive charge would be attracted**, and if the **positive charge is near a positive the electric field line shows it will be repelled**.

The electric field lines indicate the interaction between charged bodies whether they attract or repel from one another, either way a force is applied. If the “puck” is positively charged the field lines indicate the direction and intensity of the force on the puck, and **therefore the acceleration**. In addition, **if positive charged particles were added the electric field lines would point away from the charge**; whereas, **if the negative charged particles were added the electric field line will point towards the charge**. The electric field lines help to determine a free-body diagram of the different force which were exerted from the charge bodies, and the vectors of these forces are able to be added in order to determine the general direction of the “puck”. It is important to note that the (positively charged) puck does not always move in the same direction as the field lines it was passing over because it can be **going in one direction and accelerating in another**. In addition, the electric field lines help indicated where a stronger field is located represented as the darker shades of black.

The electric field lines show the attraction or repulsion of the puck to or from the charge based on the principle that like charges repel and opposites attract. The sum of these lines can demonstrate the superposition principle, since each individual charge exerts an electrical field which influences the path of the puck. If the puck is negative and a negative charge is placed on the table then the puck is repelled (even though the electric field lines aim toward the negative charge). This means that the lines are showing the behavior of the charge, not the puck. The lines show what the charge will be, either repulsive or attractive.