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Name\_\_\_

\_\_\_\_ Date\_\_\_\_

## **STUDENT SHEET 1**

## TALKING DRAWING: VISUALIZING AN ELECTRIC FIELD

1. Close your eyes and think about mapping the field around an electric charge. Now, open your eyes and draw what you imagined.

2. You have completed the activity. Now draw a second picture of what you think an electric field map looks like around an electric charge.

3. In the space below, explain what changed from your "before" picture to your "after" picture and why you changed it.

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## **STUDENT SHEET 2**

## **MODELING CHARGES**

What to do	What to look for	Question
<ul> <li>Drag a negative charge to the middle of the screen and drop it.</li> <li>Move the charge around.</li> <li>Remove the negative charge.</li> <li>Repeat with the positive charge.</li> </ul>	Observe how the charge is shown on the screen.	How are charges represented?
<ul> <li>Add a second positive charge on the screen.</li> <li>Move the charges around.</li> <li>Remove both of the charges.</li> <li>Move two negative charges onto the screen, and move them around.</li> <li>Remove one charge before moving on to the next step.</li> </ul>	Observe how the relationship between like charges is shown.	What is the effect of two like charges?
<ul> <li>Add one positive charge on the screen.</li> <li>Move it around.</li> <li>Remove both charges before moving to the next step.</li> </ul>	Observe how the relationship between opposite charges is shown.	What is the effect of two opposite charges?
<ul> <li>Place many like charges on top of each other.</li> <li>Remove some of the charges.</li> </ul>	Observe how increased and decreased charges are shown.	What is the effect of more or less charge?
• Place both positive and negative charges on the screen with NO field arrows shown.	Observe how charges can be arranged to create an electrically neutral space.	What is an electrically neutral space?
Student inquiry:		