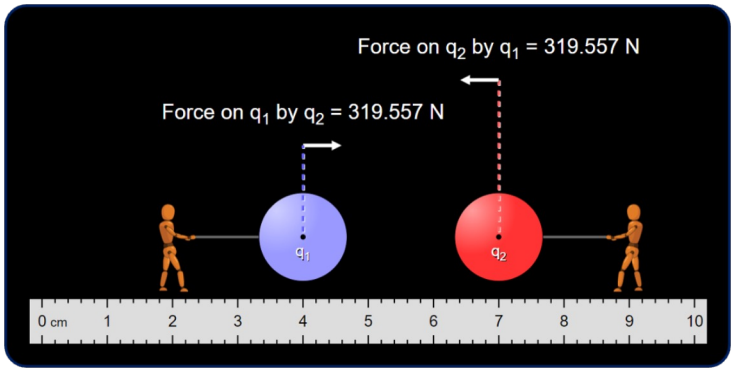
Electric fields

You will be using the online PhET simulator to complete this investigation. This can be found in your online presentation.

In this simulator, you can move to charged objects (q_1 and q_2) towards and away from each other and adjust the size of the charge on q_1 and q_2.

Click on **macro scale** to begin. Ensure force values are checked



1. When the simulator loads, q_1 and q_2 are 3cm apart. q_1 has a charge of -4μC and q_2 has a charge of 8μC. What is the size of the force on q_1 by q_2?

2. How does this compare to the force on q_1 by q_2?

3. Move q_1 to the 0cm mark and set the charge 10μC. Move q_2 to the 2cm mark and set the charge 10μC. Record the size of the force in the table below. Then, move q_2 to 4cm, 6cm, 8cm and 10cm respectively.

Distance from q_1 (cm)	2	4	6	8	10
Size of electric force (N)					

4. Describe how the force changes as the distance increases.

5. Are these charges attracting or repelling each other?

6. How do the values of force change if q_2 has a charge of -10μC?

7. What can we learn about electric fields from this simulator?

PhET Interactive Simulations
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