

➤ Main Ideas, Key Points, Questions:

After watching the video segment, write down key points, main ideas, and big questions.

➤ Objective(s):

- *Define Coulomb's law and compare it to the gravitational force.*
- *Understand electric fields as mediators of electric force.*

➤ Notes:

During the video segment, use words, phrases, or drawings to take notes.

➤ Summary:

After watching the video segment, write at least three sentences explaining what you learned. You may ask yourself: "If I was going to explain this to someone else, what would I say?"

Answer the following.

1. Coulomb's law describes a force that can both attract and repel. In the cases below, which way would the electric force act? Circle ATTRACT, REPEL, or NEITHER as your answer:

- | | | | |
|----|--------------------------------------|---------------------------------------|---------------------------|
| a. | $q_1 = 4.2 \times 10^{-8} \text{ C}$ | $q_2 = -1.1 \text{ nC}$ | ATTRACT / REPEL / NEITHER |
| b. | $q_1 = 3 \text{ mC}$ | $q_2 = 7.6 \times 10^{-2} \text{ C}$ | ATTRACT / REPEL / NEITHER |
| c. | $q_1 = -8 \times 10^{-37} \text{ C}$ | $q_2 = 7.2 \text{ C}$ | ATTRACT / REPEL / NEITHER |
| d. | $q_1 = 4 \text{ nC}$ | $q_2 = -4 \text{ nC}$ | ATTRACT / REPEL / NEITHER |
| e. | $q_1 = 0 \text{ C}$ | $q_2 = 6.7 \times 10^{-15} \text{ C}$ | ATTRACT / REPEL / NEITHER |

2. What is an electric charge?

3. What is an electric field?

4. Explain Coulomb's law.

5. If the distance between two charges is doubled, what will happen to the force between the charges?

6. If one of the charges is doubled, what will happen to the force between the charges?

Name:

Date:

Answer the following.

7. Coulomb's law tells us about electric force magnitude. How do we determine force direction?

8. Is there ever a situation where one of the two charges interacting via Coulomb's law experiences a different force magnitude than the other charge? Why or why not?
