

Phet Animations: Electricity & Magnetism

Name _____
Period _____

Part I

- Open “Balloons and Static Electricity” in HTML 5.
- Check “Show all Charges.” Nothing else should be checked.
- Rub the balloon on the shirt
- 1. What overall charge does the balloon now have?
- 2. What overall charge does the shirt now have?
- 3. What happens when you drag the balloon away from the shirt and let it go?
- 4. Why?
 - Reset
 - Check “Wall”
 - Rub the balloon on the shirt again.
- 5. What happens to the negative charges in the wall when you move the balloon near it?
- 6. What happens to the positive charges in the wall when you move the balloon near it?
- 7. Why don't all the positive charges move toward the balloon?
 - Hold the balloon in between the wall and shirt and release it
- 8. Why doesn't the balloon just stay in the middle?
 - Click on the two balloon icon and make the second balloon negatively charged.
- 9. Explain the interactions between the two balloons.

Part II

- Open “John Travoltage” in HTML 5.
- Experiment with rubbing Travolta's foot against the carpet and touching his finger to the door handle.
- 10. What happens?
 - Now try building up charge while his finger is on the door.
- 11. What happens now?
 - Move his finger away again and build up another charge
- 12. When Travolta's finger is near the door knob, what happens to the electrons currently in the metal door knob?
- 13. This creates a local _____ charge in the door knob.
 - Conductors are materials where electrons can easily flow through. (metals)
 - Insulators are materials where it is difficult for electrons to easily flow through. (plastics)
- 14. Why are shocks worse when you touch conductors rather than insulators?
- 15. If you take your hat off on a dry winter day, sometimes your hair will stand up. Explain this phenomenon.