

CHAPTER 2	Investigation 2.C: Dipole Balloons	BLM 2.2.2
HANDOUT		

You cannot observe the motion of individual dipoles, but you can observe models. In this activity, you will model dipoles by using charged balloons. You will consider them as dipoles because they will have one charged end and one uncharged end.

Question

How do charged balloons model dipolar molecules?

Prediction

Read the entire procedure and make a prediction about the response of the balloons to each of the situations described in the procedure.

Materials

- 2 round balloons
- string
- marker

Procedure

1. Blow up the balloons so they are firm but not over-inflated.
2. Tie a 40 cm to 50 cm string to each.
3. Rub one side of the first balloon vigorously on wool or on your hair to give it a charge. Gently mark the area on the balloon that you rubbed.
4. Suspend the balloon from the string and hold it or tie it away from other objects.
5. Very slowly, move your hand near the charged side of the balloon and observe the response of the balloon.
6. Charge the second balloon in the same way that you charged the first one. Mark the charged area.
7. Suspend the second balloon by the string and slowly bring it near the first balloon with their charged areas toward each other. Observe how the two balloons respond.
8. With the two balloons near each other, slowly move your hand into a location between the balloons. Observe the response of the balloons.
9. Work with another group and place the four balloons in different orientations relative to one another. In some of the orientations, place your hand between two of the balloons and observe any changes in the positions of the balloons.

CHAPTER 2	Investigation 2.C: Dipole Balloons (continued)	BLM 2.2.2
HANDOUT		

Analysis

1. Explain why the balloon moved as you observed in Procedure Step 5.
2. Why did the balloons move as they did when you brought them together?
3. Why did the balloons respond as they did when you put your hand between the two charged balloons?

Conclusion

4. Discuss how the balloons are models of dipolar molecules.