Activity: The Molecule Dance

FOR THE TEACHER

Summary
In this activity, students will explain bond and molecular movements by mimicking molecular motion with their own movements.

Resource Type: Activity
Grade Level: High school

Objectives
By the end of this lesson, students will
• remember the types of movements that occur within the molecule and the movements of the whole molecule.

Chemistry Topics
This lesson supports students’ understanding of
• Bonding
• Molecular motion

Time
Teacher Preparation: 2 minutes
Lesson: 10 minutes

Materials
• Music (optional)

Safety
Students will come into contact with each other during this activity.

Teacher Notes
• Music adds to the excitement, but you need to have something that has a pretty fast beat or some mean guitar going on.
• For the group activity, the collisions should be gentle and elastic.

FOR THE STUDENT

Student Activity Sheet: Molecule Dance

Lesson
This dance demonstrates bond and molecular movements to students by having the students do the “moves” one by one. Then, they put all the movements together at once, just as a molecule does. Students should think of themselves as water molecules: Their bodies are the oxygen atoms and their arms/fists are the hydrogen atoms.
**Bond Movements**

1. Stretching (symmetric or asymmetric) – Students stretch out their arms and contract them in, sometimes symmetrically and sometimes asymmetrically, showing how bonds stretch and contract.

2. Bending – Students bend their arms up and down, side to side, diagonally, showing how bonds bend around.

3. Rotating – Students twist their arms around, showing the rotation of a bond.

**Molecular Movements**

1. Vibration – The molecule vibrates because of all the bond movements going on within the molecule, so the students do all of the bond movements together, shaking their bodies to simulate this.

2. Rotation – Molecules rotate, so students spin around to show rotation. I avoid having the students do somersaults and cartwheels, but I do tell them that the molecule would rotate all different ways.

3. Translation – Molecules move around, so students move from one place to another in a straight line until there is a collision. For the group activity, the collisions should be gentle and elastic!!

Put all of these moves together, and you have the Molecular Dance!