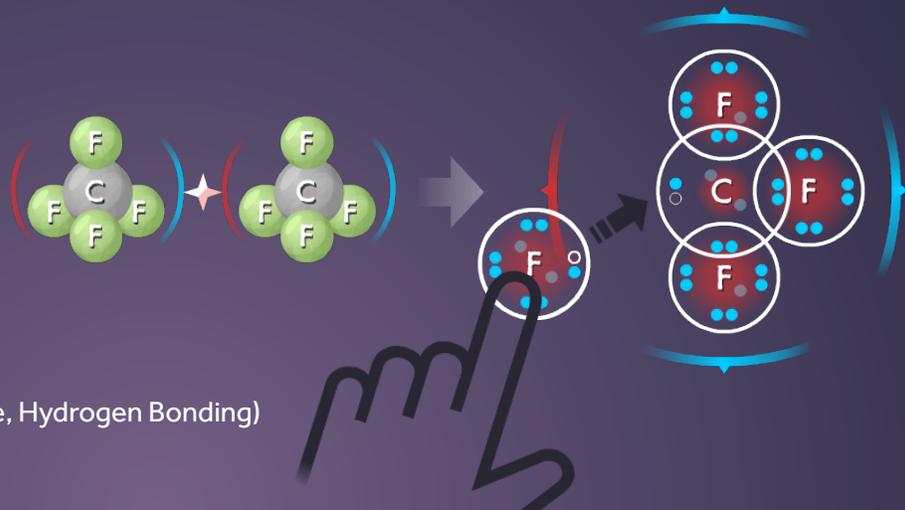


# IMFs GAME

## Integrated chemistry concepts:

- Molecular polarity
- Types of IMFs  
(London Dispersion Forces, Dipole-Dipole, Hydrogen Bonding)
- Strength of IMFs



## Use Collisions® **PRE-INSTRUCTIONALLY** to engage your students and explore a topic.

Assign your students the first 10 levels of Intermolecular Forces. During gameplay, ask your students to answer the following guided questions:

1. In Level 3, what molecule formed a hydrogen bond? What is different about Br and F?
2. In a molecule, what partial charge is often connected with hydrogen (positive or negative)?
3. In Level 6, what is different about the items in your bank? How does this different affect LDF strength?
4. In Level 8, what molecule did you build for the dipole-dipole target?
5. What are the 3 types of IMFs? Order these IMFs from weakest to strongest.

## Use Collisions **POST-INSTRUCTIONALLY** to practice, review, and extend the learning.

After instruction, encourage your students to work through the remaining core game levels. To check for student understanding, here are some additional guided questions to incorporate into your lesson:

1. Explain the rules of the IMF game, using some or all of the following keywords: molecular polarity, LDF, dipole-dipole, hydrogen bond, polar molecule, nonpolar molecule, attraction.
2. List 3 molecules that form hydrogen bonds.
3. How does molecular polarity affect the type of IMF?
4. Explain how a tetrahedral molecule can be nonpolar. Explain how a tetrahedral molecule can be polar. You can reference Level 13 to answer this question.

You can also use the Intermolecular Forces Sandbox to highlight a specific concept integrated into gameplay and encourage your students to earn the built-in Achievements.

## Additional free resources available at [www.playmadagames.com](http://www.playmadagames.com)

- **Intermolecular Forces Game Guide** - Teacher resource that provides an overview of the game.
- **Intermolecular Forces Student Quest** - Student activity designed to be completed during and after gameplay.
- **Intermolecular Forces Activity** (Student Version)