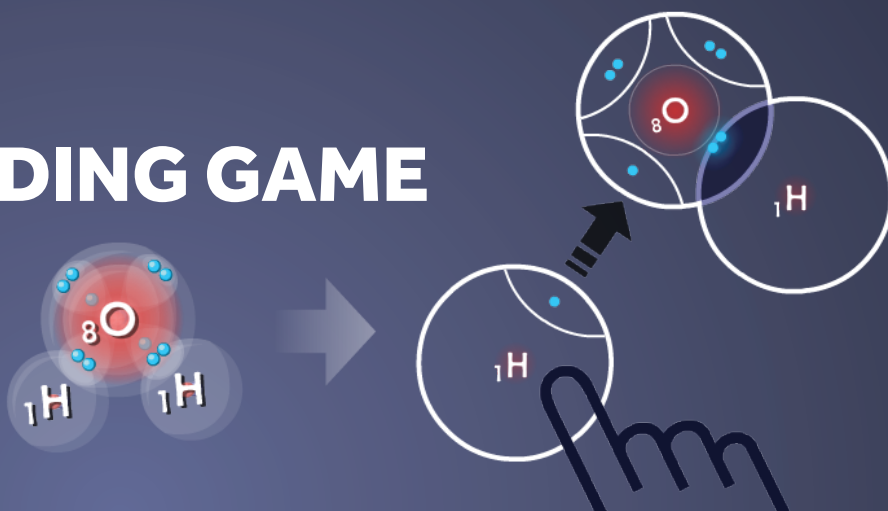


# COVALENT BONDING GAME

## Integrated chemistry concepts:

- Octet rule
- Types of bonds
- Bond polarity
- Molecular shape



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

Assign your students the first 5 levels of Covalent Bonding. During gameplay, ask your students to answer the following guided questions:

How many valence electrons must be around each atom in a molecule? Are there any exceptions?

In Level 4, how many electrons are being shared between the atoms?

In Level 5, how many electrons are being shared in the bonds created?

What is different about the bonds created in Level 5?

What is your goal in the Covalent Bonding game?

## 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 Covalent Bonding game, using some or all of the following keywords: single bond, double bond, triple bond, valence electrons, molecular shape, bond polarity, electronegativity.
2. What influences the location of the shared electrons in a bond?
3. In Level 6, what is different about the bonds in each molecule you created?
4. In Level 9, using your knowledge of VSEPR Theory, describe what molecular shapes you created.

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

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

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