



Molecular Interaction

Total Unit Running Time: 25-35* minutes

NGSS Addressed: MS-PS1-2, MS-PS1-5, MS-PS1-6

FIELD TRIP: Backyard Bonfire

Running Time: 6:08

NGSS: MS-PS1-2, MS-PS1-5

Join VVR Host, Steve Grubbs, on a backyard excursion as he demonstrates a couple of different chemical reactions through fire and toasting marshmallows. His controlled firepit burn exemplifies the law of mass conservation while reinforcing fire safety.

INTERACTIVE EXPERIENCE: Boulder Roll

Running Time: Self-paced*

Learners stand atop a snowy peak on the VictoryVR Mountain as ogres charge up toward them. By rolling boulders down the hill, the ogres are vanquished, allowing students to earn more time to make it to the finish. Rolling boulders is easy, but to get enough of them to conquer the ogres, students must correctly respond to rapid-fire questions based on the unit.

VIRTUAL COMIC BOOK: Mario Molina

Running Time: Self-paced*

Topics Covered

- Biography of chemist, Mario Molina
- Molina's research with lasers
- Molina's discovery of CFCs impact on the environment

Assessment Answer Key & Critical Thinking Skills

1. A (BT1--knowledge)
2. B (BT2--comprehension)
3. C (BT1--knowledge)
4. D (BT4--analysis)
5. D (BT3--application)

JOURNEY: When Molecules Meet

Running Time: Self-paced*

NGSS: MS-PS1-5

Topics Covered

- Distinction between protons, electrons, neutrons
- 4 types of chemical reaction
- Endothermic vs. exothermic

Assessment Answer Key & Critical Thinking Skills

1. B (BT1--knowledge)
2. B (BT4--analysis)
3. D (BT1--knowledge)
4. D (BT2--comprehension)
5. C (BT6--evaluation)

TEACHER DEMO: Flame Testing with Wendy

Running Time: 5:28

NGSS: MS-PS1-6

Topics Covered

- Flame testing demo of different metals
- Concept of thermal energy transfer

Assessment Answer Key & Critical Thinking Skills

1. C (BT1--knowledge)
2. B (BT2--comprehension)
3. C (BT2--comprehension)
4. A (BT3--application)
5. C (BT4--analysis)