

Project FOCUS
Best Lessons
FIFTH GRADE

Title of Lesson: Phases of Matter

Theme: Life Science

Unit Number: [Click here to enter text.](#)

Unit Title: Matter/Chemical & Physical Changes

Performance Standard(s) Covered (enter code):

S5P2

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Three phases of matter - distribution of molecules

Temperature affects on H₂O

Learning Activity (description in steps)

1. Talk to the students about the 3 phases of matter.
2. Explain the concept of molecules and atoms to the students.
3. Put a 3x3 (or larger depending on the class size) box on the floor using tape
4. Play "Red Light Green Light" with the students. Explain to them that they will be the molecules in this case. So they will have to constantly be in motion. In this game, red light means freeze your legs only. Their arms will still be wiggling around as if they are molecules.
5. Start them all off inside of the square. Stop them at red light really quickly before any of them can leave.
6. Explain to them that this is what a solid would look like. Very condensed and squished. Not enough room to move around, but enough to wiggle
7. Let some of them leave before saying red light again. Tell them to look back at the square to see how crowded it is. Explain that this is what liquids are like. More spacious and enough room to move around, but still a little crowded
8. Say red light again when only 1 or 2 students remain in the square. Explain that gases contain more space and fewer molecules. The molecules move around a lot because they have so much space.
9. Take them back to their seats and bring out a pencil and paper. Ask them to define solid, liquid, and gas using their textbooks. Then, ask them to draw 3 circles at the bottom and draw their depictions of solids liquids and gases at the molecular level.
10. Once they are all done with their work, put on the YouTube video that shows and describes the physical differences between the 3 states of matter.

Abstract (limit 100 characters): Discuss the 3 stages of matter and examples of each with the students. Discuss the concept of molecules. Play a game where the students are the molecules. Use the students as models to show behaviors of solids, liquids, and gases. Ask them to draw the molecules in each phase and to define each phase. Show them a short clip on the phases of matter.

Details: During the introductory discussion, ask them what they remember about the states of matter. Ask for examples of each of the three phases and write them on the board. When talking about molecules, tell them how everything in the world is made up of molecules and that they are invisible to the naked eye. Tell them that molecules are always moving, but because they are so small our eyes can't see the movement. Give them examples of everything: the molecules in their chairs, desks, books, and even inside of them are always in motion!

Materials Needed (type and quantity): Masking tape/duct tape

Notes and Tips (general changes, alternative methods, cautions): I usually like giving them videos and clips before the activities, but in this case I wanted them to try and visualize the molecules before they saw pictures of them. Also, the kids had some trouble coming up with examples of gases. I tried to steer them in the right direction: air, steam, smoke, oxygen, etc.

Sources/References:

1) <http://www.youtube.com/watch?v=s-KvoVzukHo&feature=related>

2) Click here to enter text.

3) Click here to enter text.