



Learn With the Doc At Home Science Series

Lesson 1: Water Matter(s)

Forward for Parents and Educators:

Welcome! This is the first of a series of five lessons. The series is designed for elementary students. It is designed to be modified by parents for their child's ability level. Prior to beginning each lesson, students should watch the pre-lesson video. The lesson and video are accompanied by asynchronous, educator-led discussion. Participants are highly encouraged to participate frequently in the discussion threads which accompany the lessons. During the series, students will become familiar with the scientific method within the life and physical sciences. Students will identify the scientific method as a way of knowing; understanding that science uses empirical methods that rely on logic, evidence and reasoning.

This series will address NGSS and NCSD Standards including Science and Engineering Practices, Disciplinary Core Ideas and Cross Cutting Concepts.

INTRODUCTION:

Matter is anything that has mass and takes up space. In the next lesson, we will define atoms and molecules. In this activity, students will use a model to observe water in three states: **solid** (ice), **liquid** and **gas** (observed as steam). In a solid, molecules are packed tightly together, whereas in a gas the molecules are farther apart. In a liquid, the molecules are close enough to 'stick together,' but remain fluid. The model used in this activity will allow participants to observe evaporation, condensation and precipitation. Following the activity, students will use the model to help explain naturally occurring phenomena.

MATERIALS:

- Small sauce pan
- Small frying pan
- Enough water to fill the sauce pan half full
- Enough ice to fill the frying pan
- Towel
- Hot plate or stove top

SAFETY CONSIDERATIONS:

- Tie back long hair.
- Roll up long sleeves.
- Keep a safe distance away from the heat source to prevent contact burns.
- This lesson involves the use of a hot stove and children should be supervised closely.

