

## 2<sup>nd</sup> Grade – Physical Science: Matter

- Week 1
  - **Language as a Structure** - Language is the most important way that people communicate. Explore language as a whole structure by taking a closer look at sentences, words, and letters. Like whole structures, sentences are made up of smaller parts called words. Words are made up of even smaller parts called letters. Letters from one word can be rearranged to form other words. Combinations of words form sentences. Combinations of sentences form paragraphs. Paragraphs form even bigger structures, such as poems or books. Changes in any of the combinations result in the communication of different ideas.
    - Write a sentence with at least five words in it. Next, draw a box around each individual word and then draw a line between each letter of each word.
      - How many words did you use in your sentence?
      - Write out the alphabet. Go through your sentence and place a checkmark under each letter of the alphabet that appears in your sentence. If a letter was used more than once, you should place more than one checkmark beneath it.
      - Which letters did you use most? Which letters did you not use at all?
    - Bonus: Use the letters in your original sentence to form different words. Use these new words to form a new sentence.
- Week 2
  - **Read literacy Article 2C: Making Ice Pops ([link](#))**: Answer the questions to help understand how matter can change from solids to liquids and back.
  - **Move Like a Particle**
    - Have students draw out the ways the molecules are arranged in solids, liquids, and gases. Model the following particle arrangements:
      - **Solid**: particles huddle close together so that it is difficult to move.
      - **Liquid**: Particles link and move around to model the chain-like arrangement in a liquid.
      - **Gas**: Particles move around each other freely.
- Week 3
  - **Read literacy Article 3C: Making Salad Dressing ([link](#))**: Answer the questions to help understand mixtures.



- **Liquid Lava** - Lava is rock that is heated to such an extremely high temperature that it flows as a liquid from active volcanoes. Some volcanoes have thick, pasty lava that moves slowly, while other volcanoes have thinner lava that flows quickly. Quick-flowing, runny lava is mainly found deep under the ocean where Earth's crust is being formed. There is one rare location on land where fluid lava can be found.
  - Research and describe where and why this occurs.
- Week 4
  - **Read literacy Article 4B: Straws, Twigs, and Bricks ([link](#))**: Answer the questions to help understand materials and their uses.
  - **Rusting Metal** - Metal is a strong and durable material that provides the framework for many large buildings and bridges. Because it is so strong, metal can support the weight of large amounts of concrete if the framework is designed correctly. Yet, some metals do have weaknesses. One weakness is rust. Rust, also known as iron oxide, occurs when iron or steel comes into contact with oxygen and moisture. Over time, a chemical reaction between the oxygen, the moisture, and the metal results in oxidization, a type of corrosion. The metal turns a reddish-brown color and begins to flake. If left unchecked, the process can deteriorate parts of a metal framework. This often affects older cars; when the paint that protects the metal body wears off, oxidization occurs rapidly.
    - Observe rusting by placing a small piece of steel wool in a clear plastic cup with a small amount of water. Over a two-week period, observe the changes in the appearance of the steel wool in the cup. Keep a daily journal of the changes with pictures or video and submit a timeline of the change over time.
- Week 5
  - **Take Home Science Sheet ([link](#)): Chemical Changes in the kitchen**
  - **Cooking Up New Identities** - Chemical changes can occur in a couple of ways. In one way, energy is added to the matter, which results in the matter breaking down into its more basic parts. These parts are not the same as the whole. They have their own identities, and therefore a chemical change has taken place. In another way, the energy added to the matter causes individual substances to combine, resulting in a new identity. Either way, the new substances are different from the old.
    - Many of these concepts can be connected to cooking or baking. List foods you enjoy eating and how each food is prepared. Describe which state and identify changes that occur during the preparation of each food.