

**Shaving Cream Storminess**

**Simple STEM Activities You Can Do at Home**

**See a short video of the activity at:** <https://www.youtube.com/watch?v=pO93TgFVQCw&t=28s>

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| **Purpose:** | The purpose of this activity is for students to investigate how rain and snow form within a cloud. |
| **Standard:** | **S1E1. Obtain, evaluate, and communicate weather data to identify weather patterns.**  b. Ask questions to identify forms of precipitation such as rain, snow, sleet, and hailstones as either solid (ice) or liquid (water).  **S4E4. Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.**  c. Ask questions and use observations of cloud types (cirrus, stratus, and cumulus) and data of weather conditions to predict weather events.  **S6E4. Obtain, evaluate, and communicate information about how the sun, land, and water affect climate and weather.**  d. Construct an explanation of the relationship between air pressure, weather fronts, and air masses and meteorological events such as thunderstorms. |
| **Materials:** | Shaving cream, cornstarch, water, water, glass, food coloring, pan. |
| **Procedures:** | **Part 1:**   1. **Add** a shaving cream cloud to the top of a glass of water. 2. **Poke** 2-3 holes in the cloud with a pencil or straw. 3. **Add** 2-3 drops of food coloring in each hole. 4. **Observe** the food coloring as it mixes into the water like rain falling.   **Part 2:**   1. **Add** shaving cream to a pan and **mix** in 1 cup of cornstarch. 2. **Wash** hands and then bring the shaving cream snow outside. 3. **Form** snowballs using the mixture. 4. **Toss** the snowballs at something or somebody. |
| **Science Behind It:** | This is an excellent modeling activity where, in Part 1, students make a model of the atmosphere where water represents air, shaving cream represents clouds, and food coloring represents rain. Along the way, the formation of clouds by condensation of water vapor into drops, and the falling of these drops under the pull of gravity is explored. This simulation can also be used to consider other parts of the water cycle. In part 2, students make some artificial snow using a combination of shaving cream and cornstarch. Snow forms within clouds when ice crystals stick together in the process of forming snow flakes. When the flakes become heavy enough they too start falling to the ground under the pull of gravity. |
| **Questions to Ask:** | 1. Describe how rain forms and falls within a cloud. 2. What are strengths and weaknesses of each of these simulations? |