Weather

Introduction:

- Weather affects our lives every day. It determines which clothes we choose to wear in the morning and how we go about our daily activities. On a larger scale, weather patterns and seasons determine when and where we grow crops for food, and where we choose to live. By understanding weather better, we can make more informed decisions in these areas.
- Recognizing, identifying, and measuring weather's patterns are an important first step to understand how the Earth works. This kit will help you teach weather concepts by:
    - Motivating: Each unit begins with a simple demonstration or class project to motivate scouts. The demonstration will perplex them with unanswered questions or challenge them with a troop goal.
    - Building Concepts: The activities build knowledge through a series of concrete steps. Girls explore, ask questions, and make own discoveries first. These concrete experiences enable them to internalize scientific explanations, definitions, and principles.
    - Using Context: Real-world problems begin each unit to answer the nagging questions. These problem- solving challenges have many solutions for girls to propose and explore. They also provide a tool for closure and assessment; girls must apply the knowledge they gained through learning activities to real-world situations.
    - Expanding: Included in this teaching guide are many cross-curricular extensions. They can be used to help girls recognize the interconnectedness of science with other subject matter.

Age Level:

- Juniors and Cadettes

Activity Summary:

- Weather Foundations
    - Explore condensation when warm, humid air is cooled. Compare and contrast rates of evaporation for water and rubbing alcohol, and theorize about how water evaporation affects temperature.
- Wind
    - Investigate the relationship between temperature and fluid density. Observe sunlight's effect on temperature in several soil samples. Measure wind speed using a simple anemometer.
- Clouds
    - Create a "cloud" in a bottle. Identify and classify different clouds and cloud formations. Draw a correlation between cloud cover and ultraviolet (UV) radiation.

- Air Pressure
    - Demonstrate the Bernoulli Effect on moving air. Observe the relationship between barometric pressure and weather pattern. Build a simple barometer.
- Humidity
    - Extract humidity from the atmosphere using a rock salt collector. Construct a simple psychrometer and use a relative humidity chart. Convert temperature and humidity reading to determine “apparent temperature.”
- Rain
    - Observe the effect of acid rain on calcium-containing objects. Use litmus paper to explore pH. Build a rain gauge to measure rainfall.
- Weather Watches
    - Investigate weather map symbols and their meanings. Use weather tools to map climate data in the school yard or community. Identify and investigate microclimates.
- Weather History
    - Compile a list of weather observations and predictions. Evaluate traditional weather sayings and beliefs. Use weather knowledge to predict weather.