

Lesson Four – Background Contextual Knowledge

Design features overview:

- **Colour:** The weather stations are coloured white to withstand heat. White reflective paint is used to reflect sunlight. This means that the temperature of the weather station is not noticeably affected. A dark coloured weather station would absorb heat and affect data collection.
- **Material:** The cheap and simple design allows for water (rain or dew) to drip off the sides of the weather station without wetting the internal hardware (which is not waterproof).
- **Aeration:** The system is not airtight or waterproof to allow for airflow. Without the airflow the temperature data collected would be inaccurate. Airflow is achieved by the Stevenson's screen design, that enables air to travel past the hardware sensor that measures temperature.
- **Structural integrity:** The Stevenson's screen design is used to protect the sensor hardware from precipitation and direct heat radiation. Nylon screws are used because they are non-conductive and relatively strong. Metal screws that may be stronger would conduct heat radiation and influence the collected data.
- **Environmental conditions:** Environmental conditions could affect our weather stations. For example, heavy rainfall, wildlife, and human tampering may all affect the weather station's life span. There are also considerations that need to be made regarding the placement of the weather station. Does putting the weather station in direct sunlight or shade influence data collection?