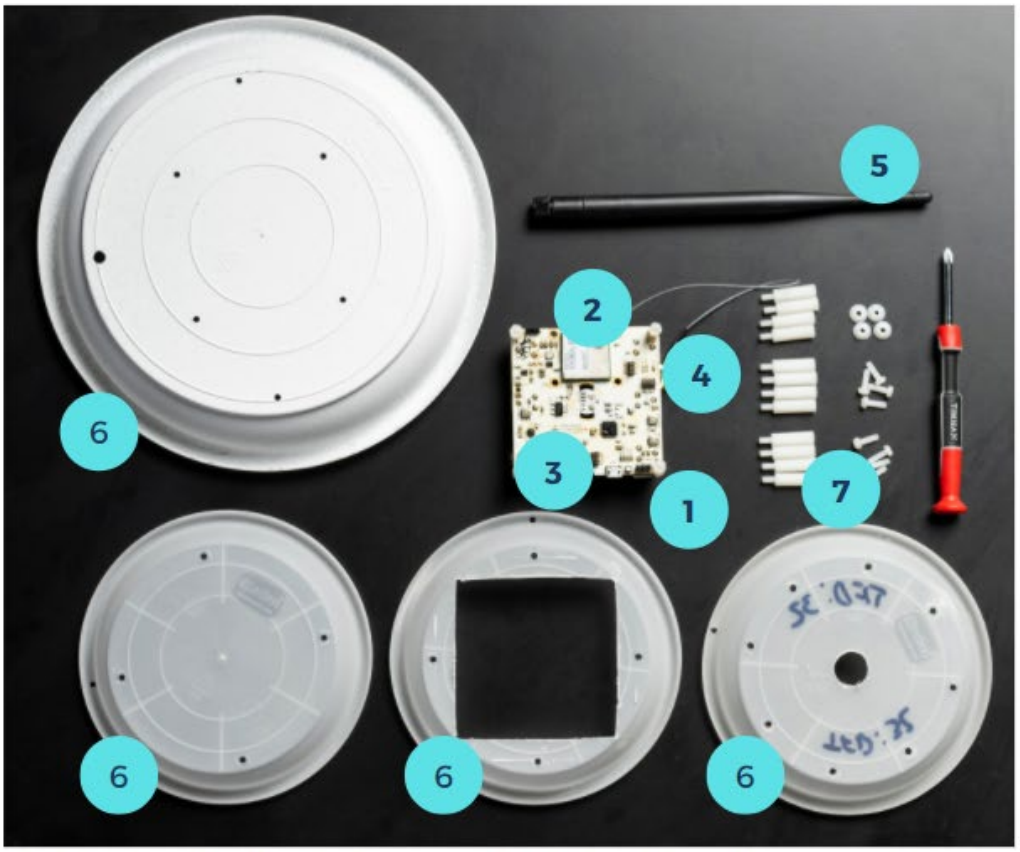
Lesson Two – Background Contextual Knowledge

Temperature map: Temperature maps are one of the most common types of weather maps. Using colour scale, Temperature maps show the current, historic, or predicted temperatures of different regions (e.g. a map of Townsville, a map of Queensland or a map of Australia). The temperature map we aim to develop using this program will help organisations such as Townsville City Council, James Cook University, and wildlife organisations to plan, prepare, design, and adapt our city for the future.

Real-time data: Information that is delivered immediately after collection. There is no delay in the collection to the visualisation of data. We can see using the data dashboard, the exact temperatures that are currently occurring in the environment.

Weather station: The job of our weather stations is to accurately measure the temperature of the environment. The data collected can be used to make predictions and conclusions about the health of the environment. Temperature can have many effects on the health of an environment. Air temperature can affect our oceans, wetlands, creeks, rivers, and freshwater lakes. Temperature can also influence plants and animals – including biodiversity, pollination, breeding patterns, habitats, and seasonal changes.

The Weather Station



1 The **Printed Circuit Board** or PCB is used to physically connect the mechanical and electronic components in a circuit. This PCB connects the environmental sensors, communication chip, and batteries.

2 The **Environmental Sensors** in this weather station include temperature and humidity sensors.

3 The **Communication Chip** connects the weather station to the LoRaWAN Network.

4 The **Batteries** are stored here, and power the weather station for approximatley 3 months.

5 The **Antenna** is used to transmit data and signal to the LoRaWAN Network

6 The **Stevenson's Screen** design allows for airflow past the environmental sensors, while also protecting the technology from rain and heat.

7 **Nylon Screws** are used as they do not conduct electricity or heat. The durable material is often used in the construction of technology devices.