

Lesson 2

Introduction to Weather Station Solution Explaining the Digital Components of a Weather Station

Content descriptors:
Knowledge and understanding:
Examine the main component of common digital systems and how they may connect together to for networks to transmit data. (ACTDIK014)
Relevant elaborations:
<ul style="list-style-type: none"> Investigating how emergent digital systems work Explaining how data may be transmitted between digital systems in different ways. Describing digital systems as having internal and external components that perform different functions

Learning intention:

By the end of the lesson, students will be able to:

- Examine the main components of the digital system by labelling a weather station.

Formative assessment suggestion:

- Labelling worksheet – students to label the main components of a weather station.

Equipment list:

- Projection screen
- Prezi lesson one
- Class set of weather station labelling worksheet.

Lesson outline (50-60min lesson)

Introduction (20min)	<ul style="list-style-type: none"> TCC Introduction Video (5min) <ul style="list-style-type: none"> Explains the project, how it fits in with TCC Introduction to the weather stations Why we need their help to build the weather stations Discuss how students will learn about main components of weather station, the network, build, deploy weather stations, and interpret the real-time data Diagnostic assessment (8min) – teacher led class discussion: ask the students to brainstorm ideas as to how having a temperature map of Townsville will be useful, how do they think it will assist in environmental monitoring 	<ul style="list-style-type: none"> help to plan, prepare, design, and adapt our city for the future
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	<ul style="list-style-type: none"> • “How do we think a temperature map of Townsville will be used by local environmental scientists?” • “How will weather stations that provide accurate, real-time data assist the local environmental scientists with environmental monitoring?” <p>Follow up videos with our explanation of how the weather stations will be beneficial for sustainability, environmental monitoring etc</p> <ul style="list-style-type: none"> • Short video from JCU research scientist • Short video from wildlife expert Ranger Dan (Hands on Wildlife) 	<ul style="list-style-type: none"> • temperature can affect our oceans, wetlands, creeks, rivers, and freshwater lakes. It can also affect our wet tropics ecosystems and native animals – the data will help identify trends and patterns of an environment and allow for preventative measures and detection of environmental threats
Body (15-20min)	<ul style="list-style-type: none"> • Prezi describing/detailing step-by-step the main components of the weather station hardware and digital systems 	
Conclusion (15-20min)	<ul style="list-style-type: none"> • Formative assessment task – students to label the main components of the weather station (10-15min) <p>Teacher led class discussion (5min)</p> <ul style="list-style-type: none"> • “What is a weather station, and how can a network of weather stations assist local environmental scientists prepare for the future?” 	<ul style="list-style-type: none"> • The job of a weather station is to accurately measure the temperature of an environment. The data collected can be used to understand and make predictions about the health of the environment. It will help environmental scientists to monitor the natural environment and the effects temperature is having on our plants and animals.