

The CESA STEM weather station challenge



"We must never forget that the natural environment is a collective good, the patrimony of all humanity and the responsibility of everyone." Pope Francis

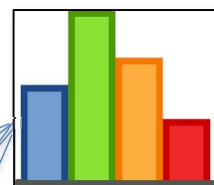
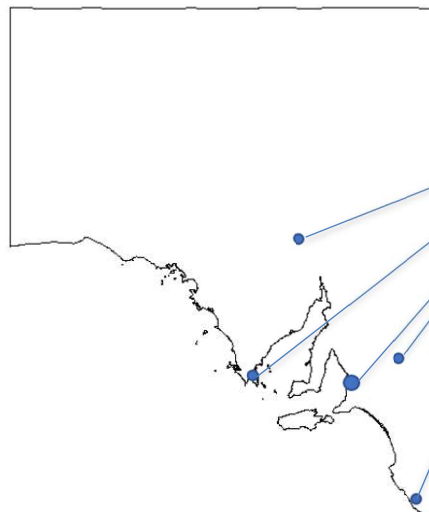
Overview: CESA wish to support schools develop in the Digital Technologies curriculum, STEM based learning and the General Capabilities through a collaborative project between regional and metropolitan schools. Funding for resources and professional development is available to participating schools to learn Arduino microcontrollers and coding that will allow students to build a weather station for their school.

Driving question: Are changing climate conditions important to my local community?

Goal: Middle School students to gain an authentic understanding in the Digital Technologies curriculum through building a weather station to record local climate conditions. Through working in teams, and sharing results and analysis with other schools, students will build capacity in the General Capabilities.



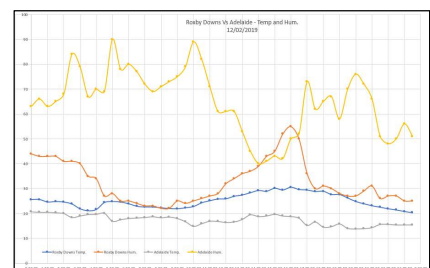
Student built weather station



Collaborative Online Platform between schools

Tasks:

- Program an Arduino Microcontroller to measure the Temperature and Humidity at your school.
- Display data visually in Office 365 Excel.
- Compare data to recordings from the Bureau of Meteorology.
- Share and collaborate with other CESA schools in South Australia on your findings and conclusion about climate in your community.



Resources: The CESA Learning and Technology EduBlog will release resources, including teacher exemplars and tutorial videos for the following topics:

- What are Microcontrollers and how to program an Arduino.
- Source code and tutorials to build an Arduino weather station.
- Bureau of Meteorology resources and exemplars on how to plot climate data in O365 Excel.
- Class portal to share and analysis school findings with other CESA schools

Note: Resources will become available during Term 2.

Timeline:

10 th May	Nominates your schools' interest, key teacher and participating Year level
2 nd August	Participating student teams (three per school) to post team planning document to the CESA Learning and Technology EduBlog.
24 th August	Working prototype complete ready for coordinated recording between participating schools.
1 st – 30 th September	Recording of climate conditions for analysis.
18 th October	All schools to post analysis to CESA Learning and Technology EduBlog.
22 nd November	Student presentation at CESA / UniSA STEM Forum