The WONDER WEEKLY

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SCHOOLS, don't forget to tune in for *UCTV Alive for Kids*, the Peter Underwood Centre's own live and interactive broadcast delivered via ZOOM Webinar.

Next week's program, *Songbirds*, will be presented by Dr Glen Bain, from the University of Tasmania.

Register here: Webinar Registration - Zoom

The program will go to air during school hours, 9:15am – 10:00am on Wednesday, March 10.

Dive in to a voyage of discovery

DO you ever imagine yourself exploring the ocean in a submarine?

Submarines work because of the way things sink and float, which is all about density.

A submarine can float on top of the water because it is not very heavy for its size.

So to submerge, or go under the water, a submarine must become heavier.

To do this a submarine has a system of internal and external ballast tanks.

At the surface tanks are filled with air rather than water.

This is called positive buoyancy.

The tanks are filled with water to allow the submarine to become heavier for its size, and therefore dive.

The air and water is then balanced for the submarine to remain at the desired depth. Try designing a submarine of your own using plastic water bottles and other materials, remembering that you need a way of letting water in and pushing it out with air.

For those with online access, this website will help: www.kaleidoscopeenrichment.com/water-bottle-submarines/

Children's University Tasmania members can earn stamps in their passports for this challenge, at the discretion of their school coordinator.

PICTURE: iStock/ andegro4ka

SUB SCIENCE

DID you know the University of Tasmania has its own submarine?

It is called *nupiri muka*, which means Eye of the Sea in palawa kani.

nupiri muka is actually an Autonomous Underwater Vehicle (AUV), and was constructed for the Antarctic Gateway Partners - the CSIRO, the Australian Antarctic Division (AAD) and the University of Tasmania.

A team of people at Australian Maritime College (AMC), at the University of Tasmania, maintain and operate *nupiri muka,* which is capable of diving down to 5000 metres below sea level and operating under sea ice.

AUVs are self-powered robots.

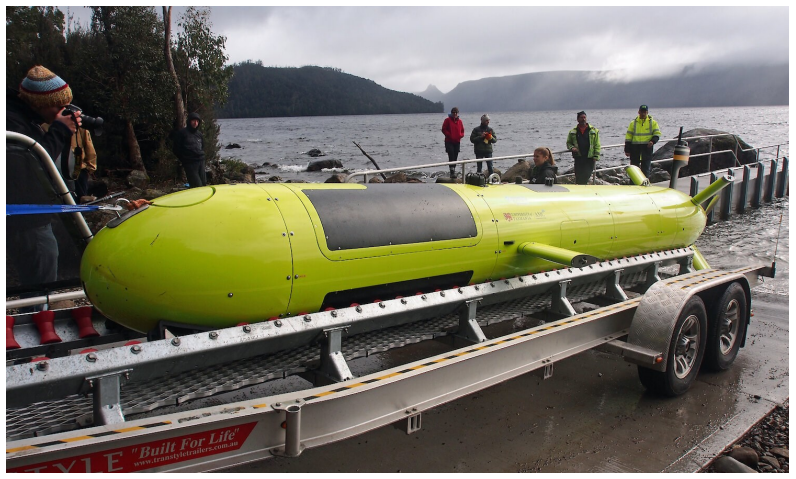
They are equipped with sensors for gathering all kinds of information about the surrounding environment, such as ocean currents, salinity and temperature.

Last year *nupiri muka* ventured under sea ice in Antarctica for the first time.

It was deployed under a floating ice shelf known as the Sorsdal Glacier, near Davis research station.

To get to the ice shelf, *nupiri muka* had to be manually navigated between obsctacles, including icebergs.

During the missions, the AUV travelled up to 700 metres under the ice, with its deepest dive, 1200m beneath the ocean.



DEEP DIVER: *nupiri muka* during trials at Lake St Clair, before heading to Antarctica. Picture: ©Wendy Piper/ Australian Antarctic Division

It helped researchers discover a 1200-metre-deep seafloor trough beneath the ice shelf.

As well as a rugged sea floor, and many other observations.

These observations are important to scientists who are trying to better understand why ice shelves are melting.

nupiri muka will be heading a lot further and deeper under the ice shelf in the future.

Some of you might have the opportunity to design and build a model submarine at school this year.

AMC has partnered with Re-Engineering Foundation Australia (REA) to bring the SUBS in Schools Technology Challenge to Tasmania for the first time.

The team-based competition is open to primary and high schools, and schools can find out more here: Subs in Schools | REA Foundation

AMC will then host the national final at the University of Tasmania's Newnham campus in December.

"Education perhaps more than anything else is a passport to a better life." - Peter Underwood AC