

Endurance22— Science

Welcome to the Endurance22 Expedition to Antarctica. Reach the World has designed a journey outline with linked articles and sample activities to guide you. This itinerary is designed to be followed at your own pace. Use this suggested itinerary and take your students on a virtual exchange expedition that they'll never forget!

Want more related learning resources? [Feel free to use any of Reach the World's activities!](#)
Questions? Please contact educators@reachtheworld.org.

Week #1: Endurance22: A Historic Expedition

1. Journal: [An Expedition 100+ Years in the Making](#)
 - Recommended Activity:
 - i. [Design Your Own Expedition Flag](#)

Week #2: Introduction to Endurance

1. Livestream: [Pack Your Bags](#) (41 mins)— The Endurance22 Expedition is just days away from departure for the Weddell Sea. What is RTW explorer Tim Jacob packing for a multi-week Antarctic expedition? Let's ask him!
 - Recommended Activities:
 - i. [Pack Your Bags](#) (Elementary)
 - ii. [Pack Your Bags](#) (Middle School/High School)

Week #3: Introduction to the S.A. Agulhas II

1. Recorded Livestream: [Livestream Live from the S.A. Agulhas II in South Africa](#)
2. Journal: [Jobs on a Polar Research Vessel](#)
3. Field Note: [Planes, Vans, Ships and Helicopters](#)
 - Recommended Activities:
 - i. [Jobs on a Ship Worksheet](#) (Elementary/Middle School)
 - ii. [Exploring Careers in Math](#) (Middle/High School)

Week #4: Recording Oceanic Data

1. Journal: [Putting \(Very\) Smart Buoys to Work](#)
2. Recorded Livestream: [Dr. Tamaryn Morris and Thomas Mtontsi](#) (31 mins)— As part of the E22 science team, oceanographers from the South African Weather Service will use robot buoys to collect important data in and around the Weddell Sea. How? Let's ask them!
 - Recommended Activities:
 - i. [Water Pressure Worksheet](#) (Middle School)
 - ii. [Design Your Own Adventure](#)

Week #5: Navigating Ice

1. Recorded Livestream: [Livestream with Members of the Ice-Monitoring Team](#) (50 mins)— Watch to learn about the work scientists are doing to navigate the S.A. Agulhas II through icy conditions!
2. Optional Recorded Livestream: [Awesome Engineering with Dr. Annie Bekker and Dr. Jukka Tuhkuri](#) (46 mins)— How can we build ships that are strong enough to handle the toughest seas and the thickest ice? Let's ask Endurance22 Expedition members Dr. Annie Bekker and Dr. Jukka Tuhkuri!
 - Recommended Activities:
 - i. [Time, Distance and Speed: A Math Worksheet](#) (Elementary/Middle School)
 - ii. [Breaking the Ice with Torque Math Worksheet](#) (High School)

Week #6: Providing Water for the S.A. Agulhas II

1. Field Note: [Water, Water Everywhere](#)
2. Optional Recorded Livestream: [Keeping the S.A Agulhas II running with Second Engineer Mark O'Reilly](#) (53 mins)— Tim speaks to Mark O'Reilly, 2nd Engineer aboard the S.A. Agulhas II, to learn how he keeps the ship running.
 - Recommended Activities:
 - i. [Why Was the Endurance So Difficult to Find?](#) (Elementary Social Studies)
 - ii. [Glacier Goo: Science Experiment](#) (Educator Resource Only)

Week #7: Finding Endurance

1. Recorded Livestream: [Discovering Sir Ernest Shackleton's Endurance](#) (58 mins)— Over a century after Sir Ernest Shackleton's ship sank, the Endurance22 crew found Endurance at a depth of 9,869 feet in the Weddell Sea. Watch Tim speaking with Endurance22 Director of Exploration Mensun Bound and AUV Supervisor Chad Bonin about sub-sea robotics and their search for Sir Ernest Shackleton's sunken Endurance.
 - Recommended Activities:
 - i. [Discovering Endurance, Using Math](#) (Middle School) with [Educator Resource](#)
 - ii. [Discovering Endurance, Using Math](#) (High School) with [Educator Resource](#)
 - iii. [Share your reaction to the discovery!](#)

Week #8: Reflections on a Historic Expedition

1. Journal: [Farewell to the S.A. Agulhas II](#)
 - Recommended Activities:
 - i. [Ship Diagram](#) with [Educator Resource](#)
 - ii. Share your feedback with us: [E22 Survey](#)
 - iii. Watch crew and expedition member reactions and have students share their own [here](#)

OPTIONAL: Live Video Conference with Reach the World Explorer Tim Jacob

Would you like to schedule a live video conference between your students and Tim? Video conferences are optional and subject to classroom and explorer availability. Reach the World strongly recommends that classrooms review most expedition articles prior to scheduling a video conference.

Interested? Please e-mail educators@reachtheworld.org and Reach the World staff will get in touch with further information.