

Managed Project, Term 3, 2022

Oceans of Trash: Teacher Guide

Thank you for signing your class up for the Makers Empire Term 3 Managed Project, "Oceans of Trash".

This term we are exploring the importance of oceans and the disastrous effects human pollution, particularly plastic waste, has on them. Students will learn about some of the efforts being undertaken to clean the oceans and to reduce the amount of waste entering the oceans in the future by completing our Oceans of Trash Challenge Course.

This challenge course aligns with [UN Sustainable Development Goal: #14 Life Below Water](#).

Outline

Before

We suggest you watch the webinar and take care of your basic admin.

Week 1

Teachers introduce students to Makers Empire 3D and aim to complete in-app Basic Training tutorials.

Weeks 2 - 7

Students use Makers Empire 3D to work through the in-app Oceans of Trash Challenge Course.

Weeks 7 - 8

Students review each other's work and make final iterations to their final design before submitting their work as part of a virtual showcase.

After

Students and teachers completed an online survey and will receive a project report from Makers Empire.

What is the Oceans of Trash Challenge Course?

This Challenge Course is accessed through the Makers Empire 3D app. Through purpose-made video content, students will develop an understanding of animal habitats and ecosystems and learn about the impact that pollution and plastics have upon these. Students respond to the video content by participating in in-app quizzes and design tutorials related to the information shared. The Challenge Course concludes with a design thinking project which challenges students decide if they will design something to clean up the oceans or something to stop them getting polluted in the first place.

The Oceans of Trash Challenge Course consists of the following ten activities:

	Challenge Course Activity
1	A video exploring the important role oceans play in sustaining life on Earth.
2	A quiz - related to the content in Video #1.
3	A pro-training tutorial- making a variety of sea creatures.
4	A video exploring how oceans help reduce pollution and the ways our oceans become polluted.
5	A quiz- related to the content of Video #2.
6	A pro-training tutorial- making a ship or boat.
7	A video exploring the problems related to plastics ending up in our oceans.
8	A quiz- related to the content of Video #3.
9	A pro-training tutorial- designing a plastic bottle.
10	Posing the design thinking challenge: Design something that might help clean up the world's oceans or stop them from becoming polluted in the first place.
11	Talk Time - "Pitch your invention" encourages students to share their thinking and explain key features of their design solution.

How does the Oceans of Trash Challenge Course address the Australian Curriculum?

The Challenge Course addresses the **Australian Curriculum Cross Curriculum Priority of Sustainability:**

1. Students will have increased awareness and understanding of the important role the Earth's oceans play in sustaining life on Earth.
2. Students will understand how individual and community actions impact the health and function of the Earth's oceans.
3. Students will identify opportunities for creating a solution for a preferred future, related to protecting the Earth's oceans.
4. Students will apply problem-solving and design thinking methodologies to develop solutions for solving real-world issues related to protecting the Earth's oceans.

The Challenge Course is also aligned to **Years 3-6 Australian Curriculum Science, HASS, and Design & Technologies.**

Curriculum Learning Outcomes:

1. Students recognise the importance of environments, including natural vegetation, to animals and people. ACHASSK088
2. With guidance, students identify questions that can be investigated scientifically and make predictions about scientific investigations. (AC SIS053, AC SIS064, AC SIS231, AC SIS232)
3. With guidance, students plan and conduct scientific investigations to answer questions and solve problems related to the protection of the Earth's oceans.. (AC SIS054, AC SIS065, AC SIS086, AC SIS103)
4. Students explain how scientific knowledge is used to solve problems and inform personal and community decisions. (AC SHE051, AC SHE062, AC SHE083, AC SHE100)
5. Students are able to design accurate, innovative 3D models to scale using Makers Empire 3D modelling software. (AC TDEP016, AC TDEP026)
6. Students investigate and analyse factors that impact a designed solution to a problem related to protecting the Earth's oceans including social, ethical, and sustainability considerations. (AC TDEK010, AC TDEK019)
7. Students critique needs and opportunities to design a solution to a problem related to protecting the Earth's oceans, including the development of design briefs and selection of appropriate materials, tools and systems. (AC TDEP015, AC TDEP025)
8. Students develop, modify and communicate design ideas to address an authentic problem or issue related to protecting the Earth's oceans. (AC TDEP015, AC TDEP025)

9. Students create prototypes of their design ideas, and develop tests to assess the suitability of their project ideas. (ACTDEP016, ACTDEP026)
10. Students evaluate their designs against design brief criteria and respond to feedback from peers and teachers.(ACTDEP017, ACTDEP027)
11. Students work collaboratively to develop project plans and design solutions that meet the provided design briefs. (ACTDEP018, ACTDEP028)

What will happen next?

You will receive an email with:

1. A link to a pre-recorded webinar explaining:
 - a. how to get started your students started with Makers Empire and the Oceans of Trash Challenge Course,
 - b. curriculum links, and
 - c. how to monitor and assess student progress through the course.
2. Instructions on how to install the Makers Empire 3D app on school devices.
3. Survey links for both teachers and students to provide insight into confidence levels, learning behaviours, and attitudes.
4. Tips on how to get support throughout the Term 3 Managed Pilot.

Need a hand?

Contact us any time at info@makersempire.com