

20,000 LEAGUES UNDER THE SEA

Natural Partners Project
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Introduction

Lesson 1: The Science in Science Fiction

A look at how science fiction has responded to the changing world and the state of STEM when Verne was writing his novels.

LIT 4-07a, SCN 4-20b

Jules Verne was one of the seminal authors of the science fiction genre, taking readers along extraordinary journeys inspired by the latest technologies of the time. In this unit, students will plan a voyage following along the story from *20,000 Leagues Under the Sea*. They will discover the science and technologies of modern deep sea exploration and how the oceans have changed since readers first set foot upon the *Nautilus*.

Preparations

Lesson 2: Electricity isn't Magic

Students will uncover fact from fiction as they build a saltwater battery, used to power the *Nautilus*. Then, a look at how submarines are powered today.

SCN 4-04b, 3-10a

Lesson 3: Challenges of the Deep Sea

An exploration of the physics of the deep ocean and the deep sea rovers of today.

SCN 4-08b, 3-11a, 4-20a

Lesson 4: Designing the New *Nautilus*

Students will design their own long voyage submarine, taking into account how to live sustainably.

EXA 4-06a

On the Voyage

Lessons 5&6: 20,000 (More) Leagues Under the Sea

A revisit of locations in the novel 141 years later. Students will create dynamic presentations about what we find there and the effects of human activity.

HWB 4-10a; LIT 4-06a; SCN 3-05b; SOC 4-10a, 4-12b

Lesson 7: The Creatures of the Deep

Students will dissect a squid and discover more about the adaptations of sea creatures. Then, they will watch the discoveries of the research vessel *Nautilus Live*.

SCN 2-01a, 3-12a

Coming Ashore

Lesson 8: A Trip to Our Sea

We will head out to clean our own local beach and students will practice creative writing inspired by the journey we went on.

HWB 4-13a, 4-18a; LIT 4-20a, 4-26a; SOC 4-10a

STEM AND SUSTAINABILITY

Within the Curriculum for Excellence Level 4, students will learn about the science of the deep ocean and the technologies that allow us to explore them through this inter-disciplinary unit. *20,000 Leagues Under the Sea* is used as both inspiration and insight into the oceans of the past.

Students will:

- engage their creativity in a scientific context
- learn about modern oceanic exploration
- learn about the physics of the deep ocean and the biology of the animals adapted to live there
- understand our impact on the ocean and risks if we don't take action to improve them
- take personal responsibility to better our local environment

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