Curriculum Connection: Deepsea Challenge 3D

Film

https://www.thehenryford.org/visit/giant-screen-experience/deepsea-challenge-3d/
After viewing *Deepsea Challenge 3D* and with some guidance from teachers, students should be able to:

Next Generation Science Standards

K-2-ETS1-1.	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
K-2-ETS1-3.	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
2-ESS1-1.	Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
3-5-ETS1-1.	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
MS-ESS2-2.	Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.
MS-ETS1-1.	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

Common Core State Standards in English Language Arts

SL.1.2.	Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
SL.2.2	Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
SL.3.2	Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
SL.4.2	Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
SL.5.2	Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
SL.6.2.	Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.

SL.7.2 Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, and orally) and explain how the ideas clarify a topic, text, or issue under study.

Educator Resources

http://education.nationalgeographic.org/deepsea-challenge/?ar_a=1

SOLVING A CHALLENGEING PROBLEM (6-8)

National Geography Standards
- Standard 15: How physical systems affect human systems
- Standard 4: The physical and human characteristics of places
- Standard 8: The characteristics and spatial distribution of ecosystems and biomes on Earth's surface

National Science Education Standards
- (5-8) Standard B-1: Properties and changes of properties in matter
- (5-8) Standard B-2: Motions and forces
- (5-8) Standard C-5: Diversity and adaptations of organisms
- (5-8) Standard E-1: Abilities of technological design

Ocean Literacy Essential Principles and Fundamental Concepts
- Principle 5c: Some major groups are found exclusively in the ocean. The diversity of major groups of organisms is much greater in the ocean than on land.
- Principle 7a: The ocean is the last and largest unexplored place on Earth—less than 5% of it has been explored. This is the great frontier for the next generation's explorers and researchers, where they will find great opportunities for inquiry and investigation.

ISTE Standards for Students (ISTE Standards*S)
- Standard 1: Creativity and Innovation
- Standard 2: Communication and Collaboration
- Standard 4: Critical Thinking, Problem Solving, and Decision Making

DEEP-SEA DECISIONS (6-8)

National Science Education Standards
- (9-12) Standard G-1: Science as a human endeavor
- (9-12) Standard G-2: Nature of scientific knowledge

Ocean Literacy Essential Principles and Fundamental Concepts
- Principle 7a: The ocean is the last and largest unexplored place on Earth—less than 5% of it has been explored. This is the great frontier for the next generation's explorers and researchers, where they will find great opportunities for inquiry and investigation.
- Principle 7f: Ocean exploration is truly interdisciplinary. It requires close collaboration among biologists, chemists, climatologists, computer programmers, engineers, geologists, meteorologists, and physicists, and new ways of thinking.

EXPLORING EXTREMES (6-8)

IRA/NCTE Standards for the English Language Arts
- Standard 7: Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.

National Science Education Standards
- (9-12) Standard G-1: Science as a human endeavor

Ocean Literacy Essential Principles and Fundamental Concepts
- Principle 7a: The ocean is the last and largest unexplored place on Earth—less than 5% of it has been explored. This is the great frontier for the next generation's explorers and researchers, where they will find great opportunities for inquiry and investigation.
- Principle 7f: Ocean exploration is truly interdisciplinary. It requires close collaboration among biologists, chemists, climatologists, computer programmers, engineers, geologists, meteorologists, and physicists, and new ways of thinking.

ISTE Standards for Students (ISTE Standards*S)
Standard 1: Creativity and Innovation
Standard 2: Communication and Collaboration
Standard 6: Technology Operations and Concepts

ENGINEERING PRESSURE (9-12)

National Geography Standards
Standard 15: How physical systems affect human systems
Standard 4: The physical and human characteristics of places
National Science Education Standards
(9-12) Standard B-2: Structure and properties of matter
Ocean Literacy Essential Principles and Fundamental Concepts
Principle 7a: The ocean is the last and largest unexplored place on Earth—less than 5% of it has been explored. This is the great frontier for the next generation's explorers and researchers, where they will find great opportunities for inquiry and investigation.
Principle 7d: New technologies, sensors and tools are expanding our ability to explore the ocean. Ocean scientists are relying more and more on satellites, drifters, buoys, subsea observatories and unmanned submersibles.
ISTE Standards for Students (ISTE Standards*S)
Standard 1: Creativity and Innovation
Standard 2: Communication and Collaboration
Standard 4: Critical Thinking, Problem Solving, and Decision Making

DISSECTING EXPLORATION VEHICLES (9-12)

National Science Education Standards
(9-12) Standard E-1: Abilities of technological design
(9-12) Standard G-3: Historical perspectives
Ocean Literacy Essential Principles and Fundamental Concepts
Principle 7a: The ocean is the last and largest unexplored place on Earth—less than 5% of it has been explored. This is the great frontier for the next generation's explorers and researchers, where they will find great opportunities for inquiry and investigation.
Principle 7d: New technologies, sensors and tools are expanding our ability to explore the ocean. Ocean scientists are relying more and more on satellites, drifters, buoys, subsea observatories and unmanned submersibles.
ISTE Standards for Students (ISTE Standards*S)
Standard 2: Communication and Collaboration

ROLE OF IMAGES IN STORYTELLING (9-12)

IRA/NCTE Standards for the English Language Arts
Standard 7: Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.
National Science Education Standards
(9-12) Standard G-1: Science as a human endeavor
National Standards for Arts Education
Dance (9-12) Standard 6: Making connections between dance and healthful living
Ocean Literacy Essential Principles and Fundamental Concepts
Principle 7a: The ocean is the last and largest unexplored place on Earth—less than 5% of it has been explored. This is the great frontier for the next generation's explorers and researchers, where they will find great opportunities for inquiry and investigation.
ISTE Standards for Students (ISTE Standards*S)
Standard 1: Creativity and Innovation
Standard 2: Communication and Collaboration
Standard 6: Technology Operations and Concepts