

OCEAN EXPERT EXCHANGE EDUCATOR RESOURCES

TOPIC – *Superheroes of the Sea: How Nudibranchs Thrive in Tough Times*

FEATURED EXPERT – *Dr. Richelle Tanner*

RELATED LEARNING STANDARDS

OCEAN LITERACY PRINCIPLES - Principle #5: The ocean supports a great diversity of life and ecosystems.

Principle #6: The ocean and humans are inextricably interconnected.

NEXT GENERATION SUNSHINE STATE STANDARDS -

- SC.4.L.17.4:** Recognize ways plants and animals, including humans, can impact the environment.
- SC.5.L.17.1:** Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.
- SC.6.N.1.5:** Recognize that science involves creativity, not just in designing experiments, but also in creating explanations that fit evidence.
- SC.6.N.2.3:** Recognize that scientists who make contributions to scientific knowledge come from all kinds of backgrounds and possess varied talents, interests, and goods.
- SC.7.L.17.3:** Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.
- SC.7.N.1.5:** Describe the methods used in the pursuit of a scientific explanation as seen in different fields of science such as biology, geology, and physics.
- SC.912.L.17.4:** Describe changes in ecosystems resulting from seasonal variations, climate change & succession.
- SC.912.L.17.8:** Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.
- SC.912.L.17.20:** Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.

SUPPLEMENTAL RESOURCES

- Reference – [Dr. Richelle Tanner](#) & [Socio-Ecological Adaptation & Climate Resilience Lab](#) (Grades 8-12)
- Resource Library – Pacific Beach Coalition [Nudibranch Module, Free Lessons & Activities...](#) (Grades K-9)
- Resource Library – National Geographic Kids [Invertebrates | Nudibranch](#) (Grades 3-12)
- Resource Library – The Kid Should See This [Sea Slug Census: Unveiling invisible ecological shifts...](#) (Grades 7-12)
- Reading – California Academy of Sciences [Nudibranchs Could Signify Ocean Shift](#) (Grades 7-12)
- Reading – Living Oceans Foundation [A Colorful Defense](#) (Grades 7-12)
- Reading – Sea Grant CA [Sea Slugs as Brilliant Indicators of Climate Change in Central California](#) (Grades 8-12)
- Reading – NNOCCI & Richelle Tanner [Sea Slugs Make Climate Evolutionary Choices](#) (Grades 8-12)
- Video Short – PBS LearningMedia [Splendid Sea Slugs | Ocean Adventures](#) (Grades 6-12)
- Video Short – Nat Geo Kids [Slimy Sea Slug | Scuba Sam's World](#) (Grades 2-8)
- Video Short – Georgia Aquarium [Deep Sea Learning: Gnarly Nudibranch](#) (Grades 4-8)
- Video Short – National Geographic [Nudibranch Sea Slugs](#) (Grades 4-8)
- Video Short – Deep Look [This Adorable Sea Slug is a Sneaky Little Thief](#) (Grades 4-9)
- Video Short – American Museum of Natural History [What the Heck Is a Nudibranch?](#) (Grades 4-12)
- Video Short – Beautiful News [Why nudibranchs are expert adapters in the face of climate change](#) (Grades 6-12)
- Seminar – California Academy of Sciences [Nudibranchs – Colorful Creatures of the Sea](#) (Grades 4-12)
- Documentary – Changing Seas [Episode 804: Beneath the Bridge](#) (Grades 5-12)