

# The 5Es of



BioDive is an exciting curriculum supplement that can be part of a 5E unit about ecosystems and marine organisms!

Throughout the sections of BioDive, students Engage by making connections between prior knowledge and new ideas about venomous marine snails and features of their environment after observing the snails and their ecosystem in virtual reality.

Students Explore what changes to the biotic and abiotic factors in an ecosystem could mean in interactive activities like building models of a food web, learning about the parts of the ocean and the roles of producers and consumers who live there.

Students create hypotheses about how changes to abiotic factors to the environment could impact the producers and consumers in the ecosystem, then make observations of specific locations in additional VR experiences to test those hypotheses, cycling between deeper Engage, Explore, and Explain experiences.

Students Elaborate on what they've learned by identifying patterns and constructing claims based on the evidence they have collected.

Throughout all the activities, students Evaluate their own knowledge through immediate feedback about whether their choices are right or wrong in each activity. Constructing their conclusion about how abiotic factors impact an environment offers an opportunity for a summative evaluation of the activity.

**ENGAGE** Students mentally focus on a phenomenon, object, problem, situation, or event.

**EXPLORE** Students have common, concrete experiences which can be used later when formally introducing and discussing science concepts and explanations.

**EXPLAIN** Students share their initial models and explanations from experiences in the engage and explore phase. The teacher provides resources and information to support student learning and to introduce science concepts.

**ELABORATE** Students are given the opportunity to apply, extend, or elaborate the concepts, processes, or skills they are learning.

**EVALUATE** Students assess their understanding and abilities and teachers evaluate individual student progress toward achieving learning goals and outcomes.

	LESSON 1	LESSON 2	LESSON 3	LESSON 4	LESSON 5
ACTIVITY 1	Red	Orange	Red	Red	Green
ACTIVITY 2	Red	Orange	Red	Orange	VR
ACTIVITY 3	Yellow	VR	Yellow	VR	Yellow
ACTIVITY 4	VR	Yellow	Yellow	Yellow	Yellow
ACTIVITY 5	Orange	Yellow	Green	Green	Green
ACTIVITY 6	Yellow	Orange	Green	Blue	Blue
ACTIVITY 7	Green	Green	Blue	Green	Blue

Killer Snails creates award winning immersive games and virtual experiences. KS is a certified MWBE small business based in New York City.

Killer Snails encourages the next generation to pursue STEM by experiencing unique scientific narratives and meeting a community of diverse scientists.

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