Biome Builder: Curricular Alignment & Tie-In's:

Biome Builder is a dynamic tabletop game where student ecologists race to build the most successful foodchains across four biomes. During game play, students develop concrete models of abstract concepts and are met with natural and man-made phenomena that impact the livelihood of organisms within each ecosystem. This game aligns to elementary, middle, and high school content across living, physical, and earth sciences and encourages players to use interdisciplinary, three-dimensional thinking set forth by NGSS.

3D	Title & Key Words	Grades and Courses
DCI: 1	**Ecosystem Dynamics, Functioning, and Resilience** Ecosystems Survival Migration Interactions Organism Population Resources Habitats	3rd LS MS LS HS LS

3D	Title & Key Words	Grades and Courses
DCI: 2	**Earth and Human Activity** Natural Hazards Populations Human Impact Natural Processes	3rd ESS 4th ESS MS ESS HS ESS

3D	Title & Key Words	Grades and Courses
DCI: 3	**Ecosystems: Interactions, Energy, & Dynamics** Habitats Species Biodiversity Ecosystem	2nd LS 3rd LS MS LS HS LS

3D	Title & Key Words	Grades and Courses
DCI: 4	**Ecosystems: Interactions, Energy, and Dynamics** Energy Animals Plants Consumers Producers Food Web Needs	5th LS MS LS HS LS

3D	Title & Key Words	Grades and Courses
DCI: 5	**Ecosystems: Interactions, Energy, and Dynamics** Food Energy Transfer Plants Cellular Respiration	5th LS MS LS HS LS

3D	Title & Key Words	Grades and Courses
DCI: 6	**Ecosystems: Interactions, Energy, and Dynamics** Interdependent Relationship Survival with Ecosystems Ecosystem Health	5th LS MS LS HS LS

3D	Title & Key Words	Grades and Courses
DCI: 7	**Biodiversity and Humans Biodiversity** Habitats Population Changes Biodiversity Resources Human Impact	3rd LS MS LS HS LS

3D	Title & Key Words	Grades and Courses
DCI: 8	**Ecosystems: Interactions, Energy, & Dynamics** Interdependence Interactions Growth Resources for Survival Growth & Reproduction	2nd LS MS LS

3D	Title & Key Words	Grades and Courses
DCI: 9	**Biodiversity and Humans Changes** Human Impact Habitat Invasive Species Food Energy Biodiversity	3rd LS MS LS HS LS

3D	Title & Key Words	Grades and Courses
CCC: 1	Cause and Effect Causal Relationships Predicting Phenomena Explaining Change	3rd LS 4th ESS 5th PS MS LS HS LS

3D	Title & Key Words	Grades and Courses
CCC: 2	Systems and Models Interactions withing systems Models as Simlations Models as Representations	3rd LS 5th ESS MS ESS HS LS

3D	Title & Key Words	Grades and Courses
CCC: 3	Energy and Matter Energy Transfer Matter Transport Natural Systems Cycle of Energy	5th PS 5th LS MS PS MS LS HS LS

3D	Title & Key Words	Grades and Courses
CCC: 4	Patterns Patterns: Similarities & Differences Cause & Effect Scales & Observation	3rd LS 4th PS 5th ESS MS LS HS LS

3D	Title & Key Words	Grades and Courses
CCC: 5	Scale, Proportion, & Quantity Impact of Scales of: Time Size Proportions	3rd LS 5th ESS MS LS HS LS

3D	Title & Key Words	Grades and Courses
CCC: 6	Stability and Change Stability in Ecosystems Change in Ecosystems	2nd ESS MS LS HS LS

3D	Title & Key Words	Grades and Courses
SEP: 1	Developing and Using Models Models for: Describing Phenomena Illustrating Relationships Demonstrating Interactions Natural Systems	4th PS 4th LS 5th LS 5th PS MS LS MS ESS HS LS

3D	Title & Key Words	Grades and Courses
SEP: 2	Asking Questions and Defining Problems Questions Around: Patterns Causal Relationships Evidence Relationships Models	4th PS MS ESS HS LS

3D	Title & Key Words	Grades and Courses
SEP: 3	Engaging in Argument from Evidence Arguments from Evidence: Empirical Data Models Student-Generated	3rd LS 4th LS 5th LS 5th PS 5th ESS MS PS HS LS

3D	Title & Key Words	Grades and Courses
SEP: 4	Constructing Explanations and Designing Solutions Explanations From: Evidence Patterns Real-world Phenomena Examples Models Simulations	4th PS MS LS HS LS

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NGSS Lead States. 2013. *Next Generation Science Standards: For States, By States.* Washington, DC: The National Academies Press.