



INTEGRATED-SPECIFIC MODEL | GRADE 7

Matter and Energy in Ecosystems

Unit storyline

Students examine the case of a failed biodome, an enclosed ecosystem that was meant to be self-sustaining but which ran into problems. In the role of ecologists, students discover how all the organisms in an ecosystem get the resources they need to release energy. Carbon cycles through an ecosystem due to organisms' production and use of energy storage molecules. Students build an understanding of this cycling — including the role of photosynthesis — as they solve the mystery of the biodome collapse.

Featured activity: Biodome

Students apply their understanding of ecosystems to planning and building a miniature biodome that can sustain living organisms. After reviewing the components of a healthy ecosystem, students evaluate the available materials and select the best prospects for building a successful biodome. Working together, student groups plan and build their biodomes, and over the next few weeks, they observe the biodomes on a regular basis. Students assess their level of success and critique how well they were able to sustain a model ecosystem within the sealed environment. They suggest possible design changes if they were given a future chance to create another model ecosystem.



Some materials depicted are independently sourced by teachers and not included with the Amplify Science kits.