



## EarthViewer Teacher Quick Guide

The EarthViewer app is an interactive learning tool that can be used in the classroom in a variety of ways. The app was specifically designed to link across multiple domains of science as called for in the Next Generation Science Standards. EarthViewer can be used to teach biology concepts and geology concepts while also enabling teachers to make connections across those disciplines. We encourage teachers and students to play with the different features in the spirit of exploration. Some suggested uses for the EarthViewer App in the classroom are:

1. As a visualization aid. View the movements of continents through time and to see plate tectonics in action; see how short human history is with respect to Earth's timeline; and discover when significant biological and geological events took place in deep Earth time.
2. As an inquiry tool to invite student questions and hypotheses, and to prime further discussion and research.
  - a. View the changing shapes of Earth's oceans and continents, looking at particular land masses at various times in Earth history; hypothesize what the landscape may have looked like; look at the primary literature to find out how we know what we know.
  - b. Toggle through the three time scales—modern Earth, Phanerozoic, and deep Earth time (Hadean, Archean, and Proterozoic)—and make observations about the resolution of data available. Compare parameters of our current climate with the changeable climate of Earth's deep past.
  - c. Compare different data sets over time and have students collect their own data to explore further questions. Is there a relationship between temperature and carbon dioxide concentration; how does oxygen concentration in the atmosphere correlate with animal diversity; and is there a pattern to snowball Earth occurrences and atmospheric trends?

The data on the EarthViewer App, including the locations of the landmasses, come directly from the primary literature and are based on current scientific knowledge in research arena that is active and constantly being updated and refined. To find the primary research on which EarthViewer is based, please visit our References page on the "Teacher" tab.