

# Supplemental Material

*CBE—Life Sciences Education*

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Table 1A. Science education resources utilizing authentic data.

Project, Organization, Website	Product Type	Description
Data Nuggets, Michigan State University <a href="http://datanuggets.org">http://datanuggets.org</a>	Data-intensive classroom activities	Activities that bring contemporary research and authentic data into the classroom. Data Nuggets connect students to the scientist behind the data and the true story of their research. Each activity gives students practice working with data and interpreting quantitative information (Schultheis & 2015).
DryadLab, Dryad <a href="https://datadryad.org/pages/dryadlab">https://datadryad.org/pages/dryadlab</a>	Data-intensive classroom activities	A collection of inquiry-based teaching modules using research data from the Dryad Digital Repository, currently emphasizing large-scale, complex datasets.
Data Jams, Cary Institute for Ecosystem Studies, LTER	Data-intensive classroom activities	A strategy to engage students in creative ways to share interpretations and results from authentic, locally collected datasets.
National Center for Case Study Teaching in Science, University of Buffalo <a href="http://sciencecases.lib.buffalo.edu/cases/">http://sciencecases.lib.buffalo.edu/cases/</a>	Data-intensive classroom activities	Subscription-based collection of peer-reviewed case studies.
Teaching Issues and Experiments in Ecology, ESA <a href="https://tiee.esa.org">https://tiee.esa.org</a>	Data-intensive classroom activities	A peer reviewed publication of ecological educational materials by the Ecological Society of America. A collection of data-centric activities can be found under the categories of "figure sets" or "datasets".
National Ecological Observatory Network <a href="http://www.neonscience.org/resources/">http://www.neonscience.org/resources/</a>	Data-intensive classroom activities	Online teaching modules, data tutorials, science videos, and K-12 activities designed to support researchers, educators and students in using NEON data.
FieldScope, BSCS <a href="http://www.fieldscope.org">http://www.fieldscope.org</a>	Digital learning environment	Interactive platform that provides citizen scientists with the means to collect, organize, and analyze data with a focus on spatial data. Features allow students to visualize data both spatially and graphically.
Tuva Labs, Tuva <a href="https://tuvalabs.com">https://tuvalabs.com</a>	Digital learning environment	Subscription-based library of authentic datasets from primary sources. Interactive graphing and statistical tools, along with guiding prompts that promote inquiry.
DataClassroom <a href="https://dataclassroom.com">https://dataclassroom.com</a>	Digital learning environment	Web-based data analysis platform where students can engage with data. Students can upload and visualize their own data, ask a question, and use statistics for hypothesis testing.
Ocean Tracks, Oceans of Data <a href="http://oceantracks.org">http://oceantracks.org</a>	Digital learning environment	Online interface with the goal of enabling students to engage in the critical scientific practices of developing questions, planning and carrying out investigations, and analyzing and interpreting data. Students use the interactive map and data analysis tools to explore and quantify patterns in animal
TerraScope, University of Minnesota <a href="https://www.terrapop.org">https://www.terrapop.org</a>	Digital learning environment	Map-based portal for exploring the data in the TerraPop collection. Integrates population and environmental data across disciplinary scientific domains, enabling research into dramatic transformations of human populations, the environment, and their interactions.
CODAP, Concord Consortium <a href="https://codap.concord.org">https://codap.concord.org</a>	Digital learning environment	Web-based data analysis platform designed for developers and as an application for students. Built on decades of research into interactive environments that encourage exploration, play, and
Laboratory for the Study of Exoplanets (ExoLab) <a href="https://www.cfa.harvard.edu/smgphp/otherworlds/ExoLab/">https://www.cfa.harvard.edu/smgphp/otherworlds/ExoLab/</a>	Digital learning environment	Free, online astronomical laboratory. Based on cutting-edge astronomy research and provides students with data from telescopes. Designed to increase student data literacy, while engaging them in the search for habitable worlds beyond Earth (Gould et al., 2014).**
iDigBio <a href="https://www.idigbio.org">https://www.idigbio.org</a>	Digital learning environment	Large set of digitized natural history collections, along with educational resources and ideas for classroom use.
TinkerPlots <a href="https://www.tinkerplots.com">https://www.tinkerplots.com</a>	Digital learning environment	Data visualization and modeling tool developed for use by middle school students through to university students.
InquirySpace, Concord Consortium <a href="https://learn.concord.org/inquiryspace/">https://learn.concord.org/inquiryspace/</a>	Digital learning environment	Online materials that assist student investigations through a series of steps that increases student independence, ultimately leading to open inquiry.
Integrating Concepts in Biology	Textbook	Textbook that incorporates math/biology connections through the use of guided prompts centered on figures and datasets from primary literature (Prestwich et al., 2015).***

\* Schultheis, E. H. & Kjelvik, M. K. (2015). Data Nuggets: Bringing Real Data into the Classroom to Unearth Students' Quantitative and Inquiry Skills. *The American Biology Teacher*, 77(1), 19-29.

\*\* Gould, R., Sunbury, S., & Dussault, M. (2014). In praise of messy data. *The Science Teacher*, 81(8), 31.

\*\*\* Prestwich, K. N., & Sheehy, A. M. (2015). Integrating Concepts in Biology: A Model for More Effective Ways to Introduce Students to Biology. (M. Ledbetter Ed.). *CBE Life Sciences Education*, 14(3), fe3.