

STEM Cases: Real-world problems, real-time data

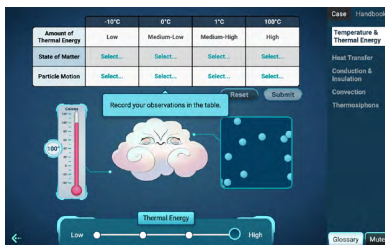


Give middle and high school students the opportunity to act like scientists with STEM Cases: award-winning, research-proven, interactive case studies in the Gizmos library.

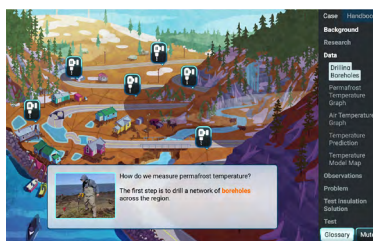
Inside a STEM Case

STEM Cases put students in the role of STEM professionals tasked with solving real-world problems. For example, in **Protecting Permafrost: Heat Transfer Highway** students take on the role of a civil engineer to design heat transfer solutions to protect permafrost in a warming climate. The interactive online case study lets students form and test ideas to find solutions — just like real scientists. During each Case, students learn scientific concepts, use critical thinking, and apply scientific practices as follows:

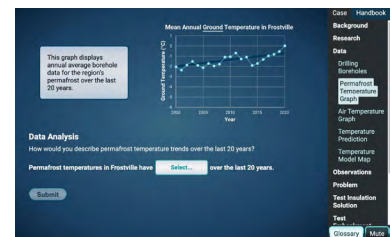
1. Learn the science



2. Collect data



3. Analyze and interpret data



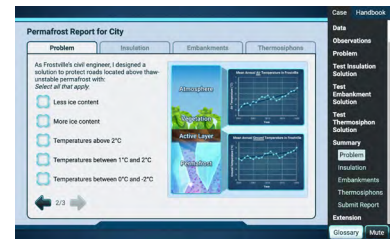
4. Form a hypothesis



5. Test the hypothesis



6. Communicate findings



STEM Cases:

Real-world problems, real-time data

STEM Cases: solving real-world problems

STEM Cases engage students in-depth in science content, concepts, and practices while scaffolding instruction. Each starts with a real-world problem and then takes students through foundational knowledge and virtual guided inquiry activities as they work to solve it.

Bringing in subject matter experts for the STEM Case development is critical to make the learning authentic. ExploreLearning consults with experts in the field, from professors to engineers and those working directly with the topic, to bring real-world concerns to students.

Formative assessments and real-time data

Assessments (15-25 per case) report student achievement and progress in real time as a “heatmap,” giving teachers the ability to quickly address problem areas and differentiate instruction. STEM Cases are aligned to state/provincial standards and help prepare students for modern interactive assessments. Research from the University of Georgia found that replacing just three traditional classes with STEM Cases elicited significant learning gains.



“Students like that the information is put into a real-world scenario and they are proud of themselves when they master the content in order to solve the case. I see real growth in the students’ technical writing skills as they fill out their case summary reports.”

—Dr. Megan Faliero, Biology Teacher, Livermore High School, CA

STEM Case topics: Animal Group Behavior, Diffusion, Enzymes, Homeostasis, Protein Synthesis and more!

[Check out our growing collection.](#) STEM Cases are available for elementary through high school, including AP courses.