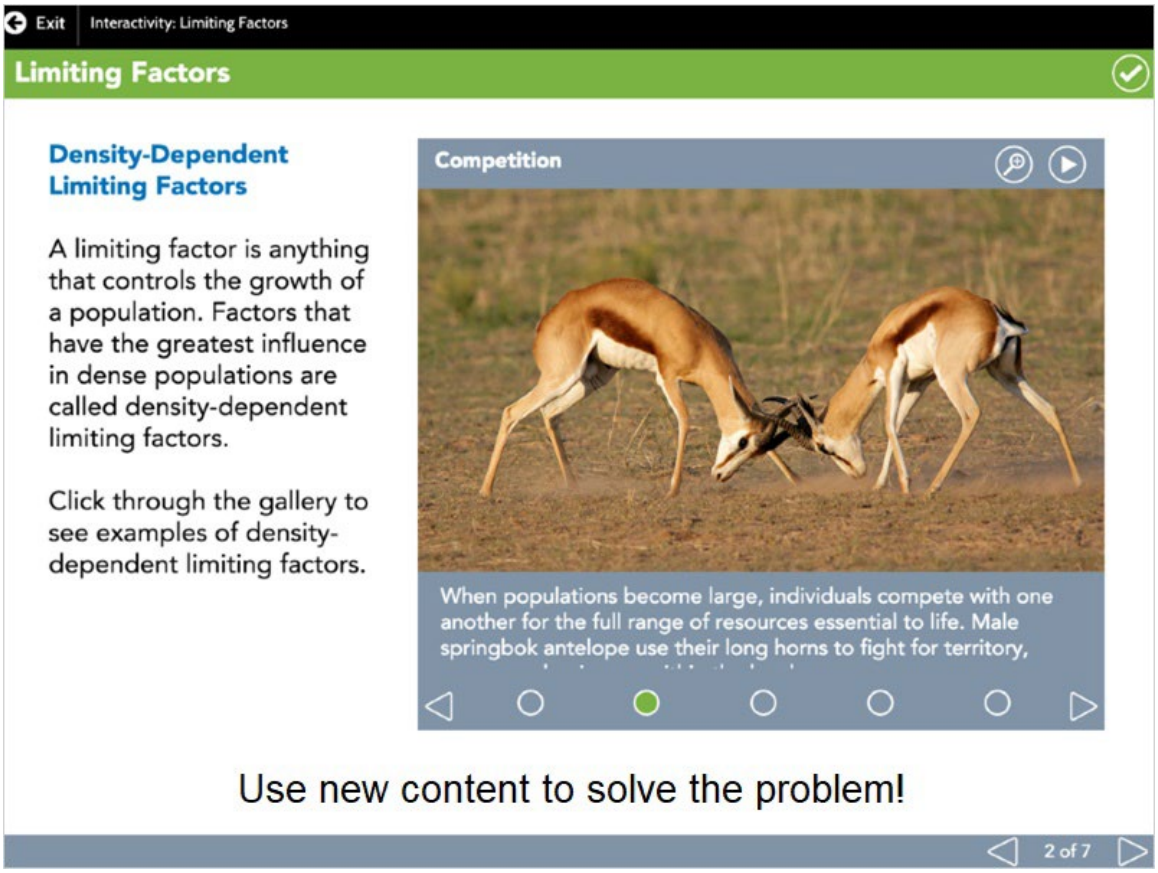
Miller & Levine Biology © 2019
Where Is the PBL in a Unit?

Introduction

Hey there! You may have heard some buzz around Problem-Based Learning, or PBL, but have you ever noticed that it's one of those terms that just doesn't quite mean the same thing to everyone (and not to mention, it's often used interchangeably with *Project*-Based Learning!)? So, what exactly does Problem-Based Learning look like in *Miller & Levine Biology*? And how do students learn through PBL*?* Join me, and I'll show you how PBL can engage your students in more authentic scientific inquiry.

What is PBL?



Problem-Based Learning, or PBL, is learning that is anchored in a problem or question that motivates student learning. Students take on the role of scientists as they develop and refine their own solutions!

Throughout each unit, students will learn scientific content that will help them solve the problem. So instead of learning a collection of isolated facts and practices, students will immediately apply the content to the problem solution.

Where is PBL in Miller & Levine Biology?

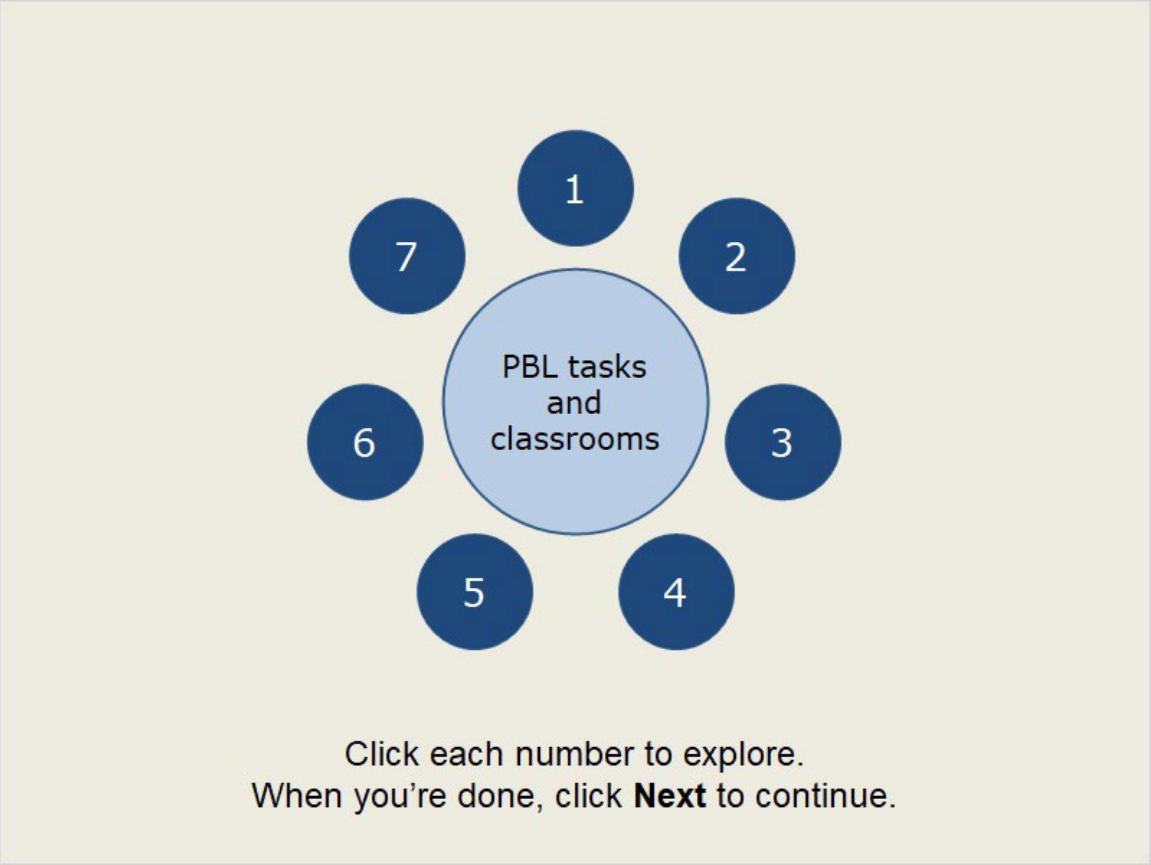
You'll be happy to hear that in *Miller & Levine Biology*, PBL lessons and activities are already woven into the program material!

A problem is introduced at the beginning of each unit that students will solve by the end. Most of their work will be recorded in the **Explorer's Journal**. Each time you begin a new unit, you'll launch the problem before beginning the chapter content.

Use the Bounce Pages app on certain mobile devices to launch an introductory video at your fingertips! Once in the app, point your device at the picture that says "Bounce to activate," and the video will automatically launch and play.

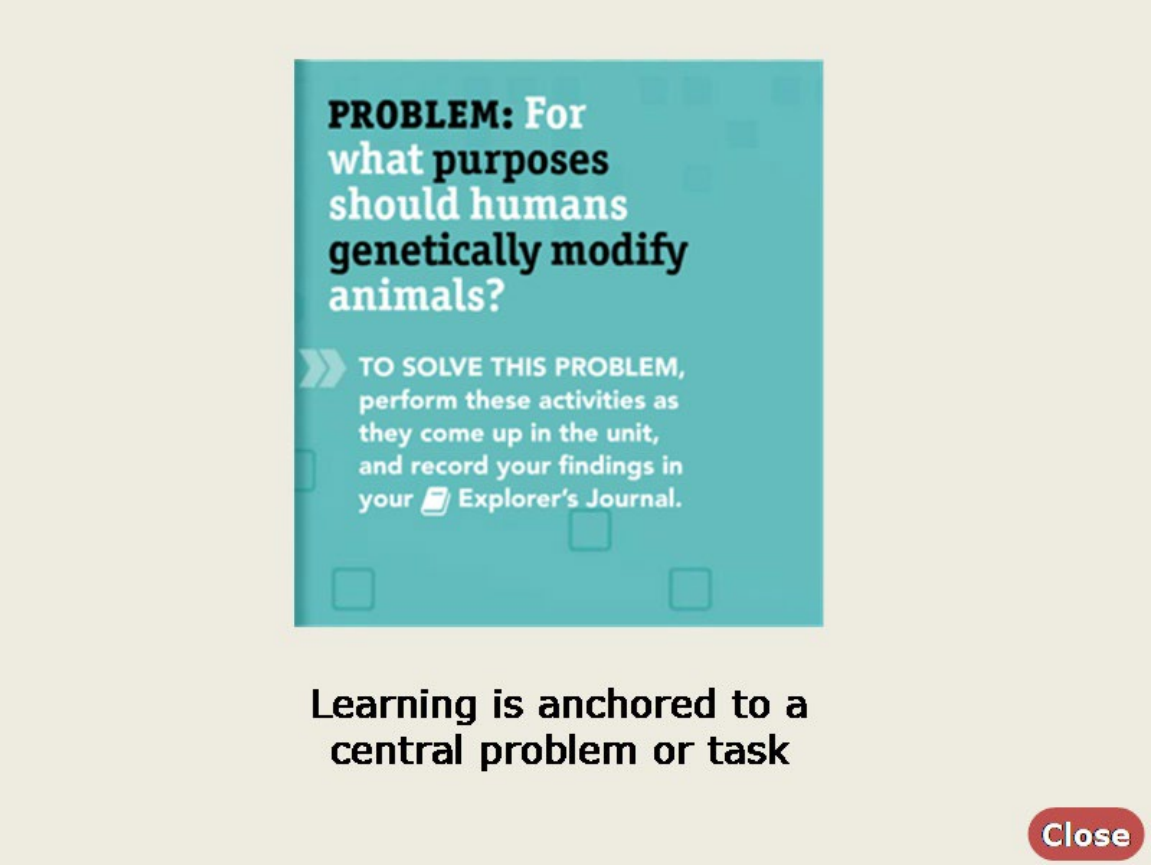
At certain points throughout each chapter, students will complete activities that will inform possible solutions to the problem. Activities may include videos, labs, readings, or interactive simulations. At the end of the unit, students complete and present their solutions to a larger audience.

What Should I Expect to See and Do?



Let's look at some features of PBL tasks and classrooms. Then we'll see how each feature can be found in *Miller & Levine Biology*. Let's explore the features.

Learning is anchored to a central problem or task



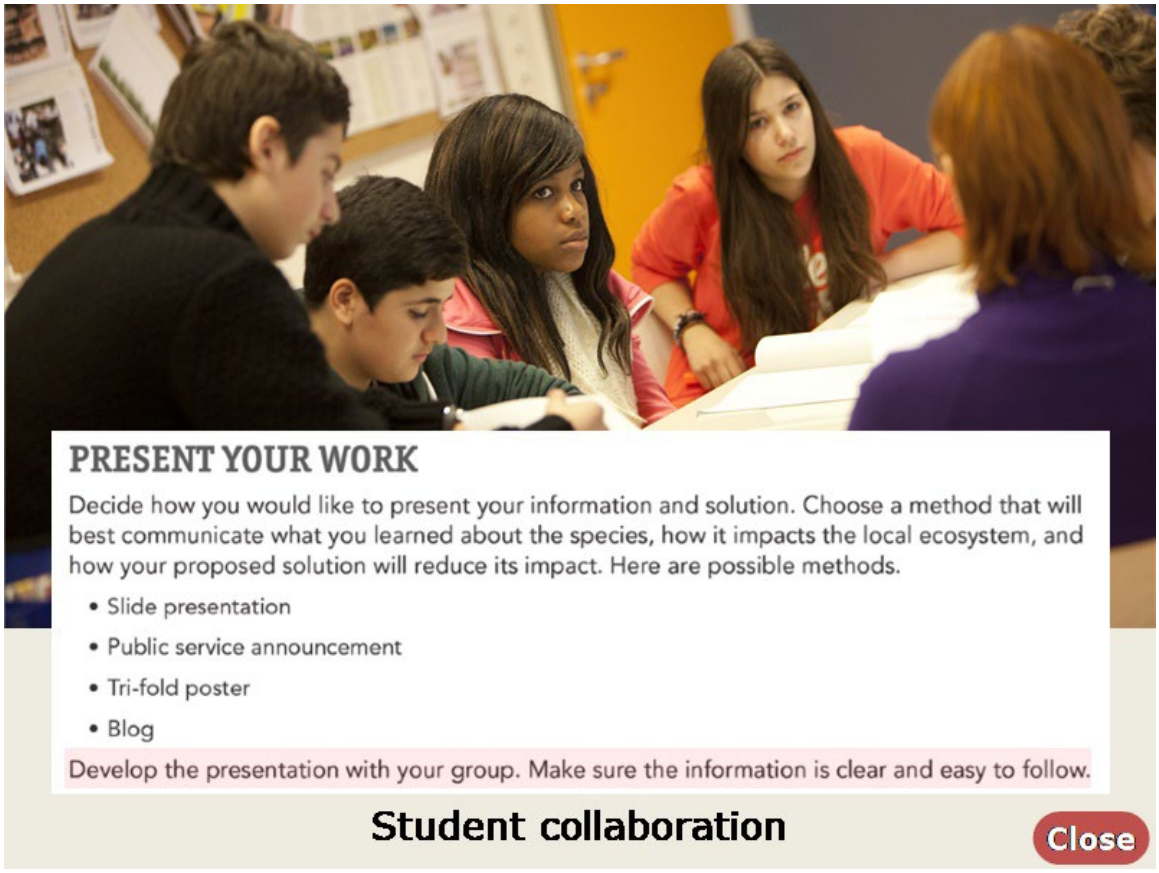
Multiple entry points or solutions

- Choose a species that you can successfully research from several reliable sources.
- Pick a species that is interesting to you!

Multiple entry points or solutions

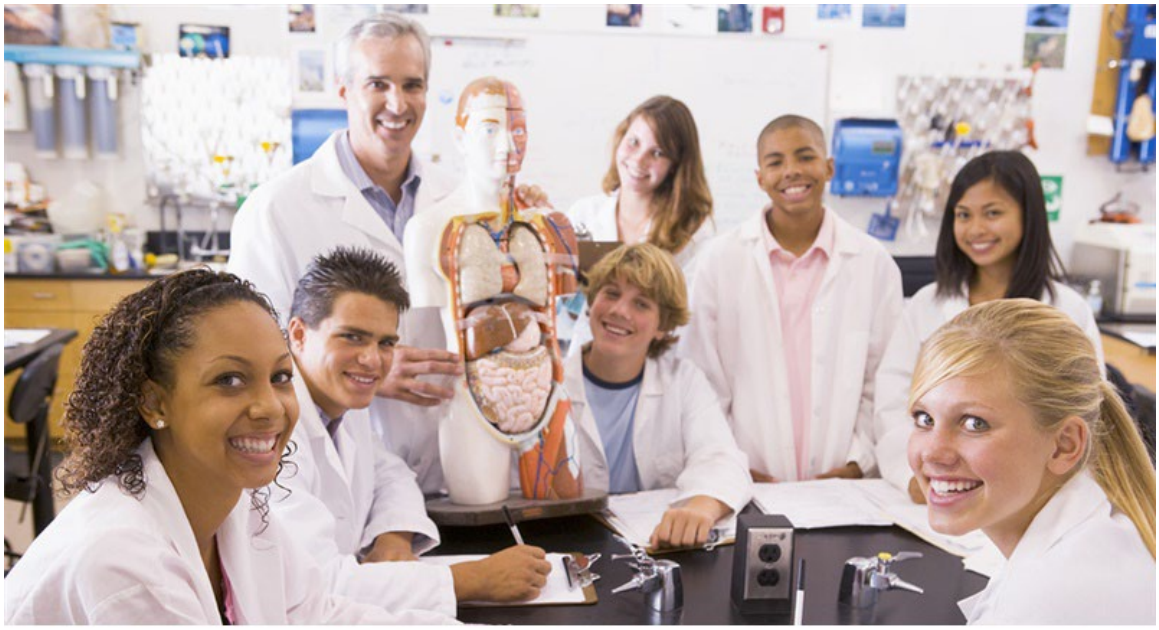
Close

Student collaboration



Student ownership of the problem or task and the process

Learning environment is designed to support and challenge students



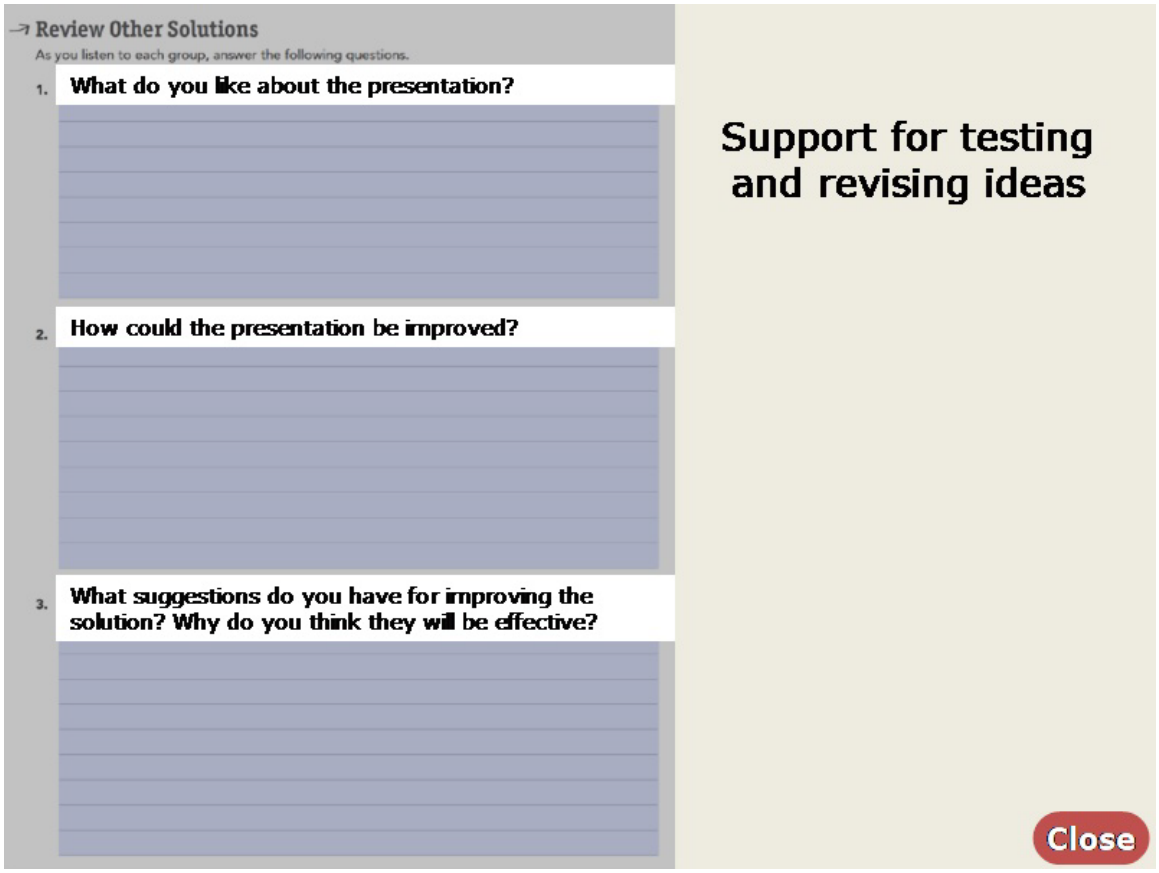
DESIGN A SOLUTION

4. Plan how you will put your solution into action. What materials do you need?

Learning environment is designed to support and challenge students

Close

Support for testing and revising ideas



Independent learning and self-reflection

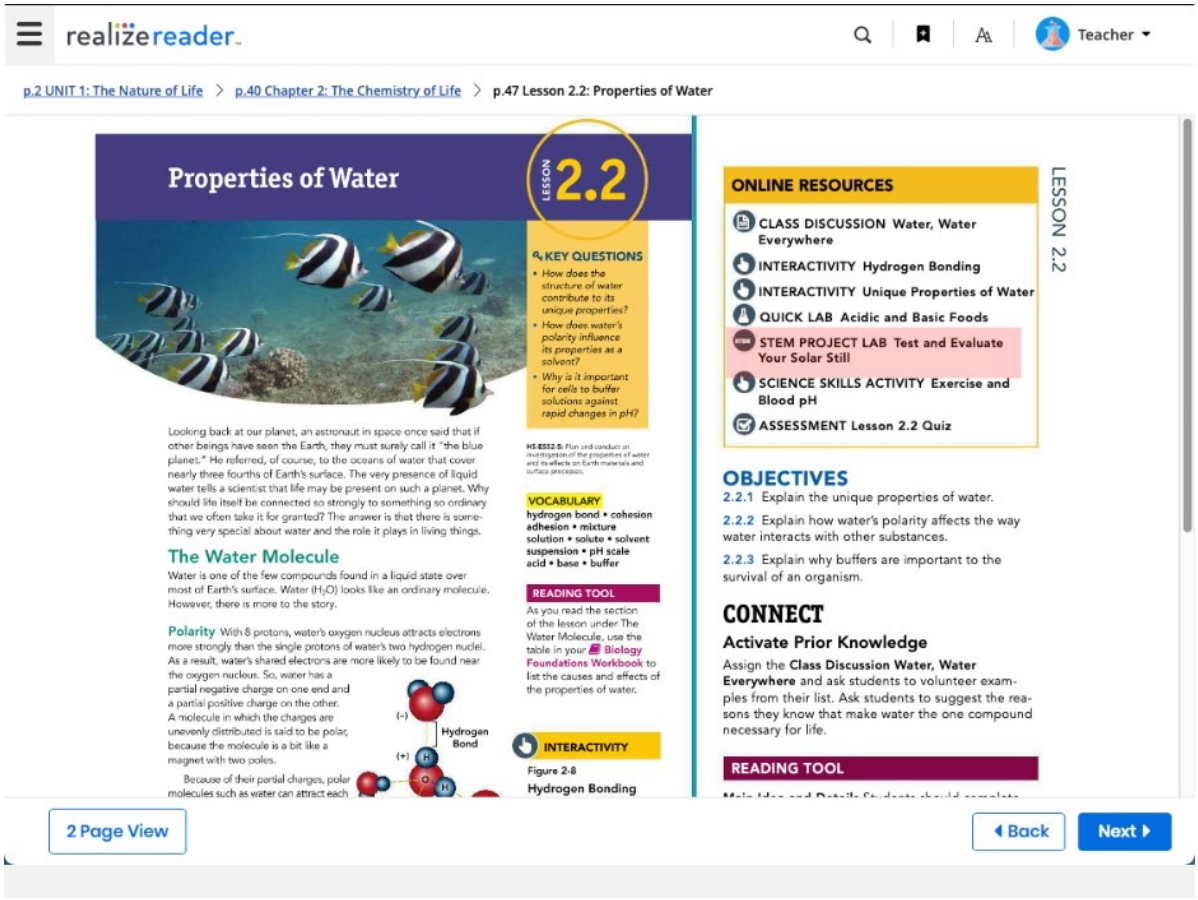
Unit 1 Solution Rubric

	EXEMPLARY Score your work a 4 if:	ACCOMPLISHED Score your work a 3 if:	DEVELOPING Score your work a 2 if:	BEGINNING Score your work a 1 if:
Project Design and Operation Student Score _____ Teacher Score _____	Your solar still functioned efficiently. Your team's design met all criteria and constraints. You successfully improved your design when you redesigned and retested the still.	Your solar still was mostly efficient. Your team's design met most criteria and constraints. Your design improved somewhat when you redesigned and retested the still.	Your solar still was somewhat efficient. Your team's design met a few criteria and constraints. Your design improved only slightly when you redesigned and retested the still.	Your solar still was inefficient. Your team's design met only one or two criteria and constraints. Your design did not improve when you redesigned and retested the still.
Using the Engineering Design Process Student Score _____ Teacher Score _____	All the steps of the engineering design process were completed. When you redesigned your solar still, you revisited any steps necessary to complete the redesign.	Most of the steps of the engineering design process were completed. When you redesigned your solar still, you revisited at least one step to complete the redesign.	Only a few of the steps of the engineering design process were completed. You attempted to redesign your solar still.	No evidence of the design process was used. You did not attempt to redesign your solar still.
Collaboration Role Student Score _____ Teacher Score _____	You fully collaborated with your teammates and contributed to the group project wherever you could. You listened to others. You respected the contributions of others.	You mostly collaborated with your teammates and often contributed to the group project. You usually listened to others. You respected the contributions of others.	You partially collaborated with your teammates by occasionally contributing to the group project. You sometimes listened to others. You sometimes ignored others' contributions.	You rarely collaborated with your teammates and contributed very little to the group project. You rarely listened to others. You ignored others' contributions.

Independent learning and self-reflection

Close

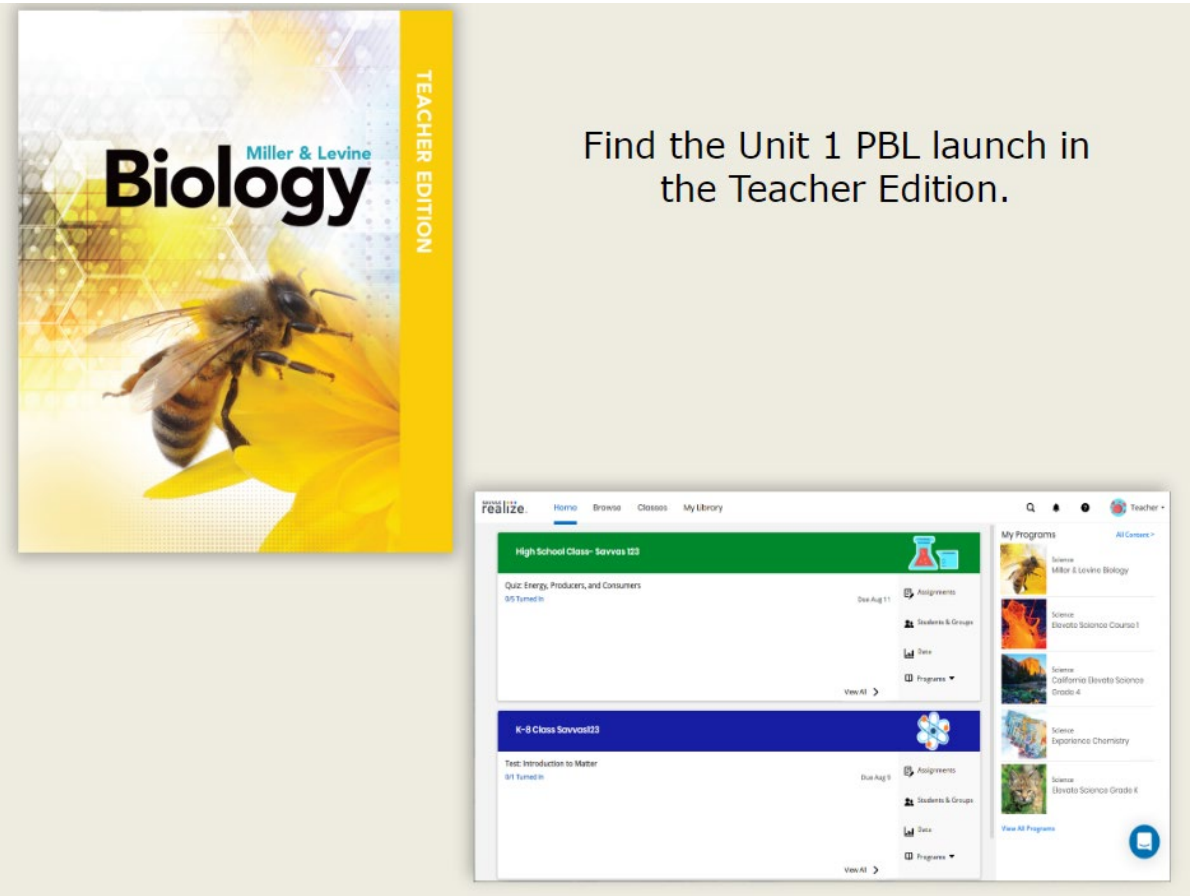
PBL Activities on Savvas Realize



Find and assign select PBL activities directly from Savvas Realize™! When *Explorer's Journal* activities are assigned, the selections can be downloaded and printed for students to complete, or students can type their responses directly into the digital worksheet!

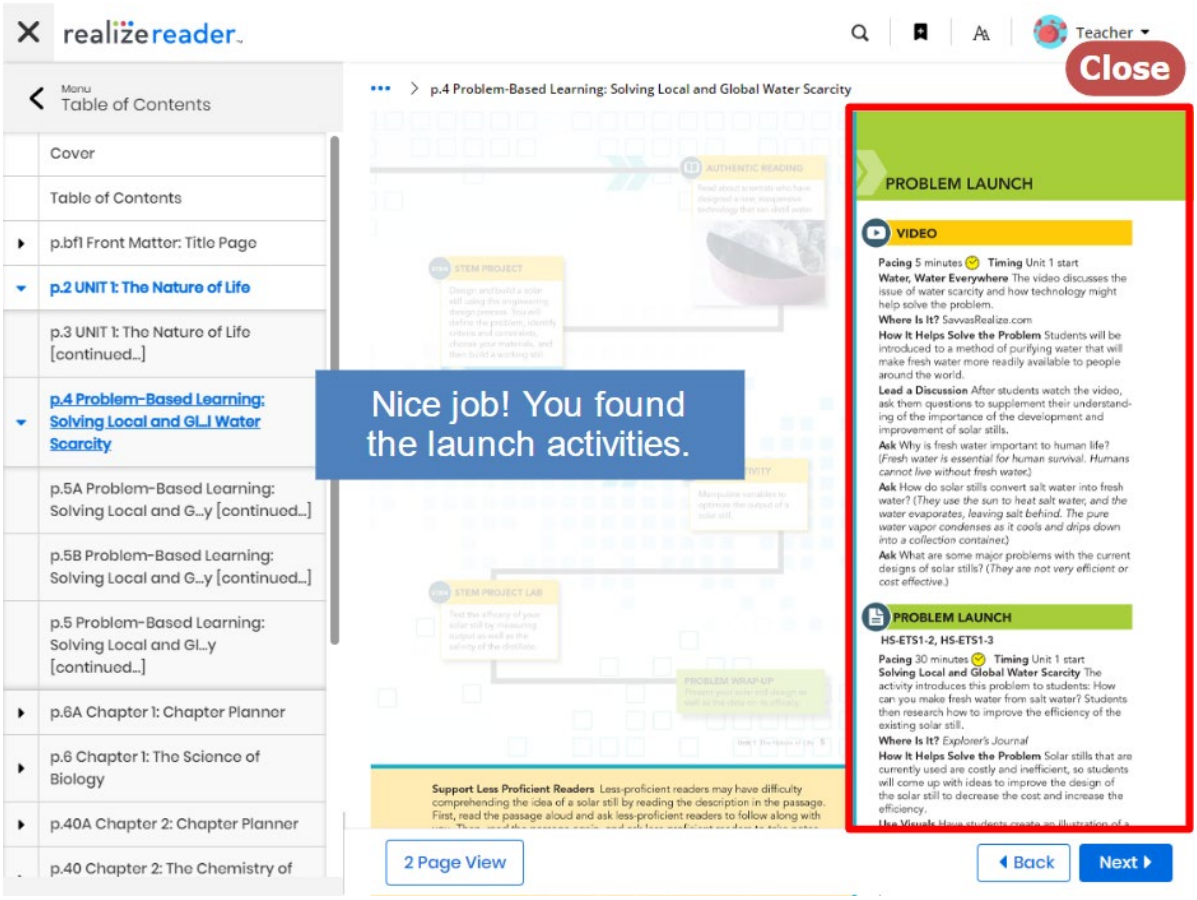
Students will complete digital activities, like videos and modeling simulations, directly on Savvas Realize. You'll see EJ-PBL next to PBL activities on Savvas Realize, and you'll see this STEM Project icon in your Teacher Edition when PBL activities are included in a lesson.

Unit Walk-through



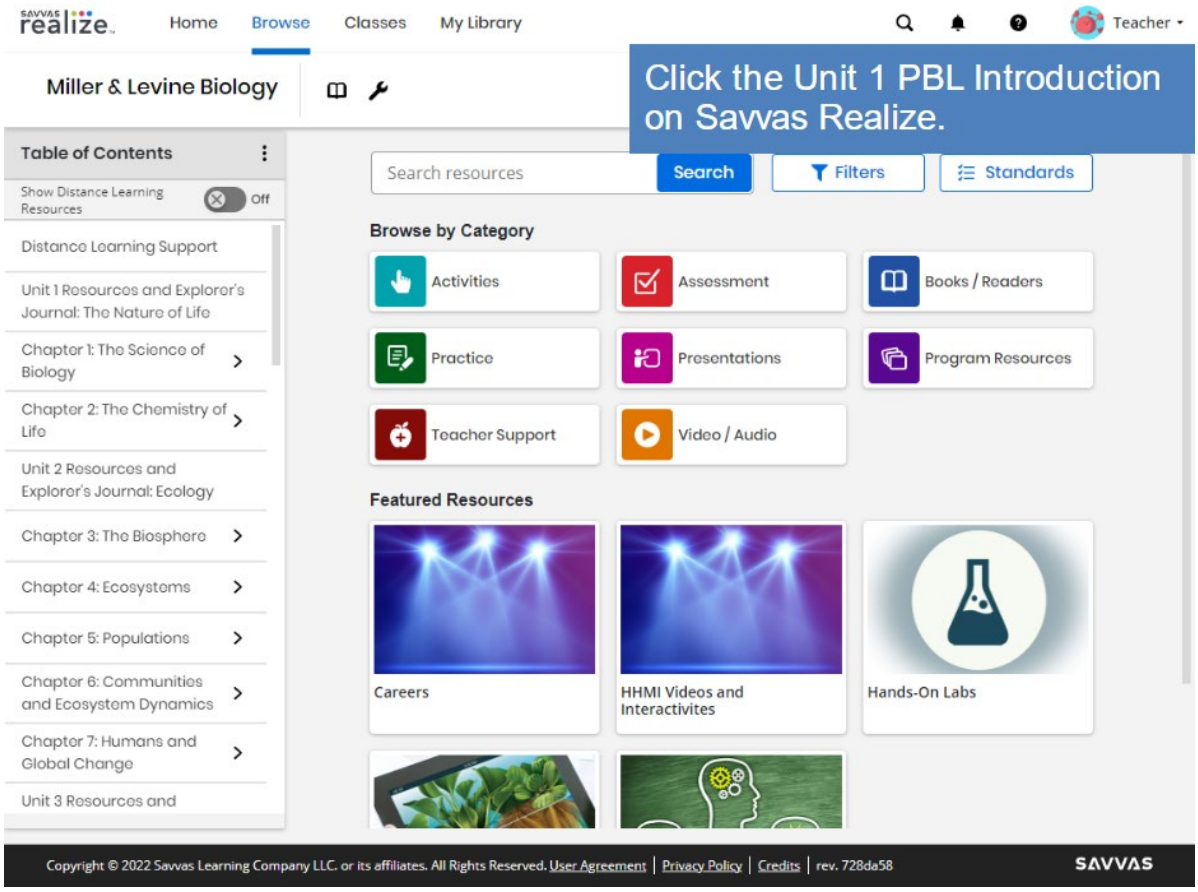
Ready to put it all together? Browse through Unit 1 in this virtual Teacher Edition eText and Savvas Realize platform to find some of your PBL resources. Start by finding the PBL launch!

Teacher Edition



Great work! Most PBL activities will be found on Savvas Realize and in the Explorer's Journal, but pacing information and overviews are provided in your TE.

Savvas Realize



Closing

Thanks for following along with me! I hope you feel a little more confident in using Problem-Based Learning to engage your students in more authentic scientific inquiry.

And for more tutorials about *Miller & Levine Biology* and Problem-Based Learning, visit My Savvas Training!