

Biology Problem-Based Learning (PBL) Bundle

- ✓ Complete Biology PBL Bundle - 10 PBL Activities
- ✓ Engaging, Student-Led Problem-Based Learning Projects



BIOLOGY

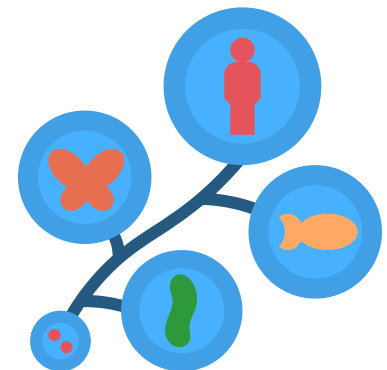
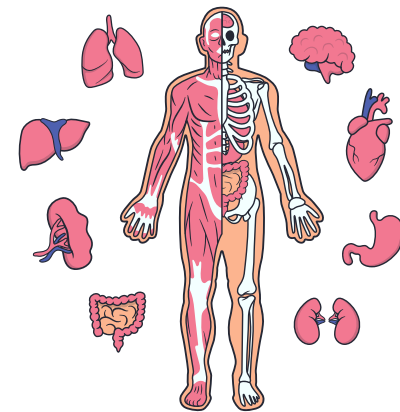


No Prep - Ready to Go!

10 Complete PBL Activities



- **Cells** - Build a 3D Cell Model and Owner's Manual
- **Cells** - Design a Cell City
- **Cellular Respiration** - Energy Factory - How Cells Power Life
- **Classification** - Build a Living Things Classification Field Guide
- **Classification** - Design a Planet's Classification System
- **Evolution** - How Populations Change Over Time
- **Human Body Systems** - Body Systems Emergency Room Simulation
- **Human Body Systems** - Design a Life-Saving Superhero
- **Natural Selection** - Survival of the Beaks
- **Photosynthesis** - Design a Survival Plan for Life Without Photosynthesis



All PBLs include

- Background for Students
- Full Instructions Sets

Step 3: Record Your Data

Create a table like this:

Beak Type	Food Collected
Spoon	
Clothespin	
Tweezer	
Etc.	

Step 4: Determine Survival

- Imagine only birds that collect 5 or more food items survive long enough to reproduce.
- Which beak types "survived"? Which ones did not? Circle your answer.

Step 5: Next Generation

- If only surviving beak types reproduced, what would you expect the population of birds to look like in the next generation? Would the less successful beak types disappear or become rare?

Step 6: Reflection Questions (Answer Fully)

1. Why did some beak types collect more food than others?
2. How does this model show natural selection?
3. If the food changed to tiny seeds that could only be picked up by tweezers, which beak type would now be favored?
4. Why is variation important for a species' survival when the environment changes?
5. Explain in your own words how natural selection could change a population over many generations.

Final Product

Your completed work should include:

- A data table filled with your results.
- A short paragraph (5–6 sentences) summarizing which beak type was best, why it was best, and how the population would change in the future.
- Written answers to all reflection questions.
- A small drawing of the "next generation" of birds, showing which beak type(s) are now most common.

PBL - Design a Survival Plan for Life Without Photosynthesis

Driving Question

What would happen if photosynthesis suddenly stopped on Earth, and how could we design a survival plan to keep living things alive?

Background for Students

Photosynthesis is the process plants, algae, and some bacteria use to convert sunlight, carbon dioxide, and water into glucose (food) and oxygen. This process is the foundation of nearly all life on Earth. Without photosynthesis, no new oxygen would be made and no new food energy would enter ecosystems.

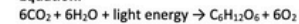
In this project, you'll explore how photosynthesis works and why it is essential, then imagine what would happen if it suddenly stopped. You will design a "Survival Plan" explaining how humans and other organisms might adapt to a world without photosynthesis.

Instructions

1. Research & Review

- Study the process of photosynthesis:

Equation:



- Inputs: Carbon dioxide, water, sunlight
- Outputs: Glucose (food), oxygen

2. Im

Rubric (20 points)

	Criteria	Excellent (4)	Good (3)	Fair (2)	Needs Work (1)
3. Ar	Creativity	Five unique, imaginative organisms	Four organisms or moderate creativity	Three organisms or low creativity	Two or fewer organisms
	Accuracy	Classification matches traits well	Mostly accurate	Some errors	Many errors
	Key Quality	Clear and easy to follow	Mostly clear	Somewhat unclear	Confusing
	Completeness	All required elements included	One part missing	Two parts missing	Several parts missing
	Visual Appeal	Neat, colorful, and organized	Mostly neat	Some effort	Messy

- Guiding Questions
- Marking Rubrics

Who is it for?

- **Biology and Life Science Teachers**
- **Teachers who want to increase their student engagement and retention**
- **Teachers who want low-prep and student-led classroom projects**

Save yourself the **STRESS AND TIME**



TWF

Spend your time WISELY

