CAST SCHOOLS

(2025)

PBL

STEP-BY-STEP

/Milestones and Example

@castschools **(Spring 2025)**

A guide for teachers
of all experience levels.

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From Start to Finish.

How to Use the Following Section

Project-Based Learning (PBL) is a dynamic process, and navigating it successfully requires clear steps and real-world examples. This section serves as both a step-by-step guide and a visual roadmap to help you understand how to implement PBL effectively in your classroom.

Each step in the PBL process is explained across the top half of these pages, while a real example—a project on contagions—runs along the bottom half to illustrate the process in action.

Why This is Helpful

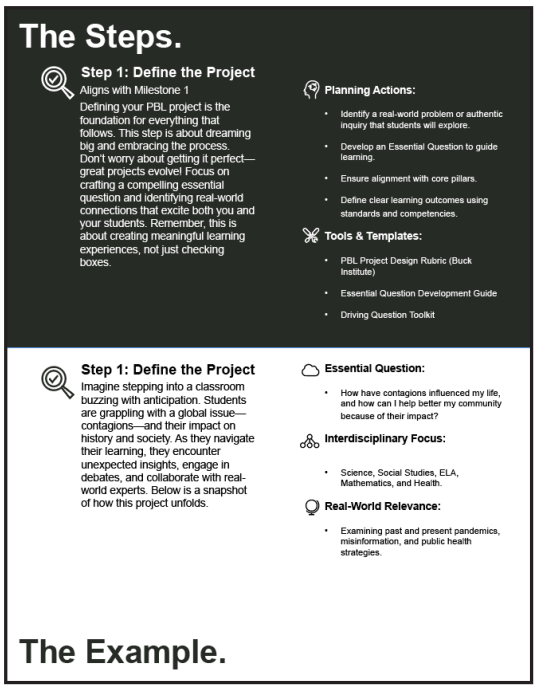
- Step-by-Step Clarity – Each stage of PBL is broken down so you can focus on one step at a time without feeling overwhelmed.
- Practical Application – The contagions PBL example demonstrates how these steps translate into real classroom practice.
- Designed for Quick Reference – Whether you're new to PBL or looking to refine your approach, this guide allows you to jump to any step you need.

How to Navigate this Section

Top Half: Each page details a specific step in the PBL process. ▼

Step Description: A brief introduction to the step and how it works in the larger process. ▶

Narrative Description: A brief narrative describing what this step looks like in action. ▷



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Bottom Half: Each step from the top half is paired with an example from a real-world PBL unit on contagions.

◀ **Planning Actions:** What are some of the key actions that should be taken in this phase.

◀ **Tools & Templates:** A list of linked tools and templates that can be helpful during this step.

◁ **Examples:** Examples of what kinds of specific activities or products might be generated during the contagion PBL.

The Steps.

Step 1: Define the Project

Aligns with Milestone 1

Defining your PBL project is the foundation for everything that follows. This step is about dreaming big and embracing the process. Don't worry about getting it perfect—great projects evolve! Focus on crafting a compelling essential question and identifying real-world connections that excite both you and your students. Remember, this is about creating meaningful learning experiences, not just checking boxes.

Planning Actions:

- Identify a real-world problem or authentic inquiry that students will explore.
- Develop an Essential Question to guide learning.
- Ensure alignment with core pillars.
- Define clear learning outcomes using standards and competencies.

Tools & Templates:

- PBL Project Design Rubric (Buck Institute)
- Essential Question Development Guide
- Driving Question Toolkit

The Example.

Step 1: Define the Project

Imagine stepping into a classroom buzzing with anticipation. Students are grappling with a global issue—contagions—and their impact on history and society. As they navigate their learning, they encounter unexpected insights, engage in debates, and collaborate with real-world experts. Below is a snapshot of how this project unfolds.

Essential Question:

- How have contagions influenced my life, and how can I help better my community because of their impact?

Interdisciplinary Focus:

- Science, Social Studies, ELA, Mathematics, and Health.

Real-World Relevance:

- Examining past and present pandemics, misinformation, and public health strategies.

Step 2: Launch the Project

Aligns with Milestone 1 & 2

Launching the project is all about setting the tone. Your students will take their first steps into the world of PBL, and it's okay if things feel a little messy! Focus on fostering curiosity, collaboration, and a sense of ownership. The goal here is to create an exciting entry point into the project while making students feel empowered and ready to explore.

Planning Actions:

- Create an engaging PBL Launch experience to spark student curiosity.
- Use team-building activities to help students collaborate effectively.
- Support students in developing their driving questions.
- Introduce PBL norms, contracts, and expectations.

Tools & Templates:

- Think-Ink-Table-Share Brainstorming Activity
- PBL Team Contract Template
- Community Agreements Guide

Step 2: Launch the Project

Students have now formed teams and started mapping out their questions. The walls are covered in sticky notes full of driving questions, some profound, others delightfully curious. As they begin diving into their research, some groups discover historical outbreaks they never knew existed, while others find direct connections to their own experiences during recent health crises.

Launch Activity:

- The Infection Game—Students model how contagions spread in a hands-on simulation.

Interdisciplinary Focus:

- Using Compass Points and Community Building Circles, students form research teams.

Driving Question Examples:

- How does misinformation impact public health responses?
- How can mathematical models help predict outbreaks?

The Steps.

Step 3: Build Knowledge & Research

Aligns with Milestones 2 & 3

Defining your PBL project is the foundation for everything that follows. This step is about dreaming big and embracing the process. Don't worry about getting it perfect—great projects evolve! Focus on crafting a compelling essential question and identifying real-world connections that excite both you and your students. Remember, this is about creating meaningful learning experiences, not just checking boxes.

Planning Actions:

- Guide students in conducting authentic research (e.g., expert interviews, data collection, historical analysis).
- Teach students effective research strategies (credibility, synthesis, data analysis).
- Help students explore different perspectives and complexities related to their topic.

Tools & Templates:

- Tips for Effective Interviews Lesson
- Parts, Purposes, Complexities Thinking Routine & Driving Question Toolkit
- Research Planning Guide

The Example.

Step 3: Build Knowledge & Research

Now in the thick of research, students are conducting expert interviews, analyzing case studies, and exploring primary sources. They debate how different governments have responded to pandemics and try to determine what lessons can be applied today. Some groups are engrossed in creating data visualizations, while others are drafting policy recommendations.

Research Methods Used:

- Interviews with experts (epidemiologists, historians, journalists).
- Database exploration (CDC pandemic archives, medical journals).
- Mathematical modeling of disease spread (using Desmos and real-world data).

Step 4: Prototype & Iterate

Aligns with Milestone 3 & 4

This is where the magic of hands-on learning happens! Students will start shaping their ideas into tangible products, testing out solutions, and learning from their mistakes. Encourage them to embrace feedback as a gift, not a critique. Iteration is key—every draft, experiment, and revision gets them closer to something truly impactful.

Planning Actions:

- Support students in developing and testing ideas through iterative prototypes.
- Facilitate structured peer and expert feedback sessions.
- Teach students revision strategies to refine their work.

Tools & Templates:

- HTH Peer Tuning Protocol, PBL Team Contract Template
- Project Zero - Digging Deeper Thinking Routines
- Prototype Development Guide

Step 4: Prototype & Iterate

Excitement builds as students transition from research to creation. Prototypes begin to take shape: some students are scripting public service announcements to counteract misinformation, while others are designing interactive exhibits demonstrating how diseases spread. Through multiple iterations, their ideas evolve, informed by peer and expert feedback.

Prototype Development:

- A team working on a public health campaign storyboards a short animated video explaining how to recognize and respond to misinformation.

Feedback & Revision:

- Students participate in a peer-feedback session where they exchange critiques on their initial designs using structured feedback protocols.

Refining the Work:

- After receiving feedback from a public health expert, a group revises their project by simplifying complex medical terms to make their message more accessible to a general audience.

The Steps.

Step 5: Finalize & Rehearse

Aligns with Milestone 4

The finishing touches are just as important as the process itself! Help students refine their work and build confidence in their presentations. Whether they're presenting to peers, experts, or the broader community, reassure them that their voices matter. Mistakes are learning moments, and practice will help them feel prepared.

Planning Actions:

- Guide students through structured presentation rehearsals.
- Teach public speaking and storytelling techniques.
- Support students in creating professional-quality final products.

Tools & Templates:

- Presentation Rehearsal Checklist
- Public Speaking and Storytelling Tips
- Peer and Expert Feedback Form

Step 5: Finalize & Rehearse

With their final presentations on the horizon, students are deep in rehearsals. Some practice delivering their findings to small groups, refining their storytelling skills. Guest experts provide last-minute feedback, helping students fine-tune their messaging and delivery. The nervous energy is palpable, but so is their excitement—they are ready to share their work with an authentic audience.

Practice Rounds:

- Students conduct small-group presentations and receive structured peer feedback using the "Two Stars and a Wish" protocol.

Expert Coaching:

- Community health professionals provide advice on clarity and impact.

Final Refinements:

- Teams iterate on their visuals and spoken delivery based on audience feedback.

The Example.

Step 6: Showcase & Celebrate

Aligns with Milestone 4 & 5

It's time to celebrate student learning! The showcase is about more than just presenting—it's an opportunity to validate students' hard work and give them an authentic audience. No matter how polished or imperfect the final products are, encourage students to take pride in their growth and impact. Every step they took to get here is a success.

Planning Actions:

- Organize a public showcase where students present their work to authentic audiences.
- Include community partners, industry professionals, and families in the final event.
- Celebrate students' efforts through awards, reflection activities, or publishing their work.

Tools & Templates:

- Showcase Event Planning Guide
- Student-Led Reflection and Presentation Rubric
- Community and Audience Engagement Plan

Step 6: Showcase & Celebrate

The day of the showcase arrives, and the classroom has transformed into a gallery of student work. Parents, community leaders, and health professionals move between stations, asking insightful questions and challenging students to think even deeper. Some projects spark lively discussions, while others provide tangible recommendations that stakeholders are eager to implement.

Public Exhibition:

- Students present findings at a symposium with healthcare workers, policymakers, and parents.

Interactive Q & A:

- Audience members engage with students to discuss the real-world impact of their work.

Media & Documentation:

- Student projects are featured in local news and school publications.

The Steps.

Step 7: Reflect & Take Action

Aligns with Milestone 5

Reflection is where real learning solidifies. Encourage students to think about their journey—what they discovered, what they struggled with, and what they'd do differently. More importantly, help them see how their learning can extend beyond the classroom. This is the moment to inspire students to keep asking questions, solving problems, and making an impact.

Planning Actions:

- Guide students in reflecting on their learning journey.
- Help students identify next steps and personal impact goals.
- Encourage students to turn their project work into ongoing community engagement.

Tools & Templates:

- Student Reflection Journal
- Call to Action Planning Worksheet
- Mentorship & Next Steps Guide

The Example.

Step 7: Reflect & Take Action

As the project comes to a close, students reflect on their journey. Many express surprise at how much they've learned—not just about contagions, but about themselves. Some are inspired to pursue public health careers, while others commit to raising awareness in their communities. The experience lingers, proving that deep learning extends far beyond the final showcase.

Personal Reflection:

- Students write letters to their future selves about what they've learned and how they want to apply it.

Community Impact:

- Some students continue their projects as internships with local health organizations.

Next Steps:

- Teams design social media campaigns or educational materials to keep their work alive beyond the classroom.