Project Based Learning Resources for the Classroom

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What is Project Based Learning?

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Project based learning is a method of teaching where students investigate a real world problem for an extended period of time acquiring new knowledge and skills. Projects usually begin with an open-ended question that involves students investigating and researching to come up with their own answers and solutions. Students use technology tools within the process to collaborate, plan, research, and develop a product for a real-world audience. Students begin to develop 21st century skills through questioning, critical thinking and inquiry.

PBL Explained

From: PBLWorks



Example PBL Units Write to a city official Write to a city official to make your to manunity better!

Project Based Learning – Activity Planner

Subject Area: Social Studies

Grade Level: 3

Topic: Our Community - Local Government

What should the students know?

Students should be able to explain how local governments work to solve problems within our community.

Learning Target: I can work with my group to identify a concern within our community and share our ideas for how to solve it with a public official in our community.

State Standard: Individuals make the community a better place by solving problems in a way that promotes the common good.

What is the Driving Question?

What do you think you think a problem facing our city is and how would you like to fix it?

Summary of PBL Activities:

Students have begun to learn about local government during a civics lesson. They have discussed how local governments work with citizens to make their community better. In this project, students will have to discuss problems within our city and identify one problem they would like to fix. Students will have to research the topic, ask experts, make choices, and present their ideas to leaders in the community via email.

Experts & Resources Available to students:

Students will have abundant resources to use on this assignment. A list of possible civic issues will be

Letters to City Officials

While learning about local government, we have been discussing ways citizens can help solve problems in their community. There are several ways to use city government and services to help with a citizen's concerns. These include:

- Discussing problems at a town meeting
- Petition the government
- Contact the local police/fire department
- Contact the local school board or superintendent
- Contact city council member for your ward

The students have thought of a problem they would like to see solved. They wrote a persuasive letter to the appropriate city service. The friendly letter should have included:

- -A greeting
- -The problem you are concerned about
- -Why it concerns you and how it is affecting Avon
- -What you think should be done about it
- -A call for action
- A friendly closing
- They will be reading their letter to our class. Spelling, neatness and punctuation count.

Attached, is the rough draft your child has completed in class. Please help your child proofread their friendly letter. After proofreading, please have your child rewrite their letter (in cursive) on the paper provided. Please return by Monday, March 6th. We will be addressing the letter to the appropriate city official and sending it from school. Hopefully the children will receive many responses to their letters!



Good teachers

should learn

always have a plan!

Begin by identifying

what your students

Students brainstorm to discuss a problem within their community they would like to solve. Community members can also meet with students to learn about what they do to help the community.





Example PBL Units Write to a city official Community bettert. Community bettert.

Hello. I am a third grader at Avon Heritage Elementary School in Mrs. McLeod's Social Studies class. We are learning about ways that citizens

My name is Isabella I am writing you with a concern that I have about our community. My concern is we need a traffic light at the Mills and Nagel intersection. It would make it more safe because cars would not get into accidents. Also, the line of cars is too long . Finally, people are late to school, work and important things because the line of cars is very long.

Sincerely.

Once they have chosen an

the community.

issue and discussed a solution

they draft an email to be sent to the appropriate member of

Isabella

Example PBL Units Write to a city official Write to a city official to make your to make your community better!

Thank you for your email! I appreciate it when citizens reach out to me with their concerns.

I understand you would like to see a traffic light at the intersection of Mills Road and Nagel Road. This is a tricky intersection, as we share this intersection with North Ridgeville. Any improvement to this area would need to be a joint project with both Avon and North Ridgeville. At this particular time, we are working with North Ridgeville on the intersection of Mills Road and Route 83. We are working together to install a roundabout at that intersection. Once we have that intersection finished, I can begin the process of talking to North Ridgeville about Mills and Nagel. As I mentioned, these intersections require both cities to agree on what improvement, if any, should be done to an intersection.

Thank you again for reaching out to me and don't hesitate to write again if you have any other questions.

Enjoy these last few weeks of the school year and I hope you enjoy your summer!

Students wait for city officials to reply to their emails. Students then share their ideas for the community and replies from city officials with the class.

Regards,



Bryan K. Jensen

Mayor, City of Avon

The assignment really came to LIFE for Isabella when the city actually installed a light a few monthslater!





Where do I begin?

Getting Started with PBL

Think

What unit do I want to transform or renovate?

How long do I want your unit to be? What project outcomes will I provide students?

2

Time

Planning

3

How will I devote time to plan upfront? What resources will I gather? How will I use backward design for planning?

Communication

4

How will I communicate the project to students, parents, administration, and possibly the community?

Project

5

-

How will I make sure that I am teaching through the project? How will I provide students with project expectations?

Reflection

6

How will I reflect during and after the project? Design Elements Checklist

- Challenging problem or question
- Sustained Inquiry
- Authenticity
- Student voice and choice
- Reflection
- Critique and revise
- Public product





Project Design Rubric

Resource Folder

	PROJECT DESIGN RUBRIC				
	Lacks Features of Effective PBL The project has one or more of the following problems in each area:	Needs Further Development The project includes some features of effective PBL but has some weaknesses:	Includes Features of Effective PBL The project has the following strengths:		
Student Learning Goals: Key Knowledge, Understanding & Success Skills	 Student learning goals are not clear and specific; the project is not focused on standards. The project does not explicitly target, assess, or scaffold the development of success skills. 	 The project is focused on standards-derived knowledge and understanding, but it may target too few, too many, or less important goals. Success skills are targeted, but there may be too many to be adequately taught and assessed. 	 The project is focused on teaching students specific and important knowledge, understanding, and skills derived from standards and central to academic subject areas. Success skills are explicitly targeted to be taught and assessed, such as critical thinking, collaboration, creativity, and project management. 		
Essential Project Design Element:					
Challenging Problem or Question	 The project is not focused on a central problem or question (it may be more like a unit with several tasks); or the problem or question is too easily solved or answered to justify a project. The central problem or question is not framed by a driving question for the project, or it is seriously flawed, for example: it has a single or simple answer. it is not engaging to students (it sounds too complex or "academic" like it came from a textbook or appeals only to a teacher). 	 The project is focused on a central problem or question, but the level of challenge might be inappropriate for the intended students. The driving question relates to the project but does not capture its central problem or question (it may be more like a theme). The driving question meets some of the criteria (in the Includes Features column) for an effective driving question, but lacks others. 	 The project is focused on a central problem or question, at the appropriate level of challenge. The project is framed by a driving question, which is: open-ended; there is more than or possible answer. understandable and inspiring to students. aligned with learning goals; to answer it, students will need to gain the intended knowledge, understanding, and skills. 		
Sustained Inquiry	 The "project" is more like an activity or "hands-on" task, rather than an extended process of inquiry. There is no process for students to generate questions to guide inquiry. 	 Inquiry is limited (it may be brief and only occur once or twice in the project; information-gathering is the main task; deeper questions are not asked). Students generate questions, but while some might be addressed, they are not used to guide inquiry and do not affect the path of the project. 	 Inquiry is sustained over time and academically rigorous (students pose questions, gather & interpret data, develop and evaluate solutions or build evidence for answers, and ask further questions). Inquiry is driven by student-generate questions throughout the project. 		

rroject	Design	RUDFIC	/ Page 2	
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		Project Design Rubric / Page
 The project resembles traditional "schoolwork;" it lacks a real-world context, tasks and tools, does not make a real impact on the world or speak to students' personal interests. 	 The project has some authentic features, but they may be limited or feel contrived. 	 The project has an authentic context, involves real-world tasks, tools, and quality standards, makes an impact on the world, and/or speaks to students' personal concerns, interests, or identities.
 Students are not given opportunities to express their voice and make choices affecting the content or process of the project; it is teacher-directed. (Or) Students are expected to work too much on their own, without adequate guidance from the teacher and/or before they are capable. 	 Students are given limited opportunities to express their voice and make choices, generally in less important matters (deciding how to divide tasks within a team or which website to use for research). Students work independently from the teacher to some extent, but they could do more on their own. 	 Students have opportunities to express their voice and make choices on important matters (topics to investigate questions asked, texts and resources used, people to work with, products to be created, use of time, organization of tasks). Students have opportunities to take significant responsibility and work as independently from the teacher as is appropriate, with guidance.
 Students and the teacher do not engage in reflection about what and how students learn or about the project's design and management. 	 Students and teachers engage in some reflection during the project and after its culmination, but not regularly or in depth. 	 Students and teachers engage in thoughtful, comprehensive reflection both during the project and after its culmination, about what and how students learn and the project's design and management.
 Students get only limited or irregular feedback about their products and work-in-progress, and only from teachers, not peers. Students do not know how or are not required to use feedback to revise and improve their work. 	 Students are provided with opportunities to give and receive feedback about the quality of products and work-in-progress, but they may be unstructured or only occur once. Students look at or listen to feedback about the quality of their work, but do not substantially revise and improve it. 	 Students are provided with regular, structured opportunities to give and receive feedback about the quality of their products and work-in-progress from peers, teachers, and if appropriate from others beyond the classroom. Students use feedback about their work to revise and improve it.
 Students do not make their work public by presenting it to an audience or offering it to people beyond the classroom. 	 Student work is made public only to classmates and the teacher. Students present products, but are not asked to explain how they worked and what they learned. 	 Student work is made public by presenting, displaying, or offering it to people beyond the classroom. Students are asked to explain the reasoning behind choices they made, their inquiry process, how they worked, what they learned, etc.
	 "schoolwork;" it lacks a real-world context, tasks and tools, does not make a real impact on the world or speak to students' personal interests. Students are not given opportunities to express their voice and make choices affecting the content or process of the project; it is teacher-directed. (Or) Students are expected to work too much on their own, without adequate guidance from the teacher and/or before they are capable. Students and the teacher do not engage in reflection about what and how students learn or about the project's design and management. Students get only limited or irregular feedback about their products and work-in-progress, and only from teachers, not peers. Students do not know how or are not required to use feedback to revise and improve their work. Students do not make their work public by presenting it to an audience or offering it to people beyond the 	 "schoolwork;" it lacks a real-world context, tasks and tools, does not make a real impact on the world or speak to students' personal interests. Students are not given opportunities to express their voice and make choices affecting the content or process of the project; it is teacher-directed. (Or) Students are expected to work too much on their own, without adequate guidance from the teacher and/or before they are capable. Students and the teacher do not engage in reflection about what and how students learn or about the project's design and management. Students get only limited or irregular feedback about their products and work-in-progress, and only from teachers, not peers. Students do not make their work public by presenting it to an audience or offering it to people beyond the classroom. Students do not make their work public by presenting it to an audience or offering it to people beyond the classroom.

Project Based Learning – Activity Planner

Topic: Ea	rly English Colonies in America - Building Your Own Colony
What sho	ould the students know?
	nould be able to explain and describe the many challenges faced by early colonial settlers in become the United States.
Learning T <u>t's</u> survival	arget: I can work with my group to PLAN, CREATE, and SHARE a new colony to ENSURE
	dard: North America, originally inhabited by American Indians, was explored and colonized ins for economic and religious reasons.
What is t	he Driving Question?
What do yo	u think you would need to do in order to create a successful colony?
Summar	y of PBL Activities:
States. The sometimes to create a	y 1600s, Great Britain had begun the process of "colonizing" what would become the United e first settlers in Roanoke, Jamestown, and Plymouth faced many challenges that are overlooked by 21 st century students. In this project, students will have to discuss how best colony that would be able to survive these hardships. Students will have to research the xperts, make difficult choices, and present their ideas to both the peers and the King.
Experts a	& Resources Available to students:
resources a a Chromeb collaboratio original hist	III have abundant resources to use on this adventure. They will be permitted to use Internet and well as traditional classroom resources to design their colony. Students will each have ook on which they can share documents. <u>Boxiloht/Mimio</u> resources are also available for in and presentation of materials. All students are able to email experts from each of the oricial sites. They may also contact experts (other teachers within the department) for reating their colony.

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Planning can also be simple and teacher friendly. W hatever works best for you and your students.

Introducing PBL to Students - Launch Events

- \circ Videos
- Guest Speakers
- Virtual Field Trips
- Story
- Article/News



Project Based Learning – Activity Planner

Subject Area: United States History

Grade Level: 8-9

Topic: Early English Colonies in America - Building Your Own Colony

What should the students know?

Students should be able to explain and describe the many challenges faced by early colonial settlers in what would become the United States.

Learning Target: I can work with my group to PLAN, CREATE, and SHARE a new colony to ENSURE It's survival.

State Standard: North America, originally inhabited by American Indians, was explored and colonized by Europeans for economic and religious reasons.

What is the Driving Question?

What do you think you would need to do in order to create a successful colony?



Create your own colony Project & Presentation!

Good teachers always

have a plan! Begin by

identifying what your

they will be assessed.

students should learn & explaining to them how

Task #1: Preparing for the journey!

- Choose a group member to act as a scribe for your group. Please use google Slides (or PowerPoint) to <u>create</u> your presentation. Be sure all of your names and the name of your new colony are on the title slide. Answer the following questions in your presentation. You will be presenting information about your colony to the class. SHARE your file with the rest of the group so everyone can contribute to your colony's success.
- 2. What do you plan to name your colony? Why did you choose this name?
- 3. What is your motivation for creating your colony? For example, are you creating your colony to make money, for religious reasons, for the sake of adventure, or for other reason?
- 4. How are you going to pay for your colony? Will you raise money? Find investors? Ask the king for a loan?
- 5. How many people do you plan to bring to your colony on your first voyage? In other words, how many people will be the first to arrive?
- 6. How many ships will you need to bring these people?
- 7. How do you plan to pay for the cost of the trip and any supplies you choose to bring?
- 8. What kinds of settlers are you planning to bring? (Male? Female? Adults? Children? Occupations?)
- 9. With your group, make a list of at least 5 supplies you plan to bring to your new colony.



Create your own colony project & presentation!

Be sure to check out the thumbnail for some great ideas!

Task #2: Choosing a location for your settlement:

1. Examine and discuss the four location options below. Discuss the advantages and disadvantages of each with your group.







Students share and present their work to the class and others!

Create Your own colony Project & presentation!





Muncha, Muncha, Muncha













Student Presentations to Other Schools

Thomasville City Schools, Alabama







Problem:

A local philanthropist, Dr. Doolittle, has just donated a piece of land to Stafford. The plot of land is rectangular, and it measures 120 yards by 100 yards. Dr. Doolittle has also offered to donate money for construction of the park.

Dr. Doolittle wants the park to be a place that people of all ages would like to visit. She requires that half of the park be a picnic and playground area. She wants to leave the decision about what to do with the other half of the park area to someone else. Therefore, she has decided to hold a design contest for the layout of the park.

Mission:

You may choose a partner to work with on designing the layout of the park. Your design should satisfy the following constraints:

- The park must be rectangular with dimensions 120 yards by 100 yards (820 Feet by 960 Feet).
- About half of the park should consist of a picnic area and a playground, but these two sections need not be located together.
- The picnic area should contain a *rectangular* flower garden. There should also be a
 garden in at least one other place in the park that has an *irregular* shape.
- There should be several trees in several places in the park. Young trees will be planted, so your design should show room for tree growth (figure out the width of a tree. Most landscape drawings are aerial views; therefore you should just show the spread of the branches).
- The park must appeal to families, so there should be more that just a picnic area and a playground.







Plan a Park Project-Elementary

Your Task:

During the next few months you will be part of a:

- 1. Sports Research Lab
- 2. Makerspace
- 3. Parkour Gym

You will develop an idea for a Parkour shoe to meet the needs of the athlete

- 1. Design an upper, midsole, and outsole for a Parkour shoe
- 2. Display board of results
- 3. Product pitch presentation





SportsLab Shoe Design Project- Middle

Students learn about economics by producing & consuming items.

Market Day Activity!

Project Based Learning - Activity Planner

Subject Area: Social Studies

Topic: Economics - Production and Consumption

What should the students know?

Students should be able to explain how products are developed, marketed, and sold to consumers.

Grade Level: 4

Learning Target: I can work with my group to create and advertise a product for my classmates to buy.

State Standard: Production and Consumption - Production is the act of combining natural resources, human resources, capital goods and entrepreneurship to make goods and services. Consumption is the use of goods and services.

Markets exist when buyers and sellers interact. This interaction determines market prices and thereby allocates scarce resources, goods and services.

What is the Driving Question?

What type of product can we make, advertise, and sell to our classmates?

Summary of PBL Activities:

Students will be learning about the basics of production and consumption by completing a <u>hands on</u> project. Students will be asked to create and choose a product they can produce, market, and sell to their classmates. Students will have a chance to 'test the market' by asking the class what <u>are some</u> <u>things</u> they would be interested in purchasing. Students will then produce their product. They will also make marketing tools such as signs. The culmination of this project will be a class market day in which students will buy and sell the items created.



Students brainstorm and research ideas for a cool new product. They can also poll their classmates to test the market!

Market Day Activity!





Students develop a new product, use resources to produce the product in real life, and create marketing for their product.

Market Day Activity!





It's time to sell your product and use your profits to purchase some cool new items at Market Day!

Market Day Activity!





Where do I find experts for my unit?



Project Based Teaching Rubric

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Οο

Quality Feedback

Quality Feedback



Presentation Feedback Form

Please give thoughtful, meaningful and respectful feedback.

Name of Student Presenting

our answer

Invention Name

Your answe

Organization

Please rate the following based on the rubric

	Audience couldn't understand presentation because there ween't a sequence of information	difficulty following presentation because student	Student presented information in logical sequence, which the audience followed.	presented information in logical, interesting sequence, which the audience followed
Organization	0	0	0	0

C

Feedback-		
Fishbowl		

7/	4- Proficient	3- Progressing	2- Developing	1- Needs Improvement
Overall effectiveness of ad	The ad is very effective. It includes a catchy phrase or jingle.	The ad is effective. It includes a catchy phrase or jingle.	The ad is somewhat effective, but it needs to be reworked in order to grab the listener and get him or to pay attention. No jingle or only a somewhat catchy phrase.	The ad needs to be reworked in order to grab the listener and get him or to pay attention. Is missing a catchy phrase or jingle.
Originality	Radio ad shows considerable originality and creativity. The content and ideas are presented in a unique and interesting way.	Radio ad shows originality and creativity. The content and ideas are presented in an interesting way.	Radio ad shows some originality and creativity.	Radio ad shows limited originality and creativity. It is a copy of other people's ideas.
Content - Accuracy	All content throughout the radio ad is accurate. There are no factual errors.	Most of the content is accurate but there is one piece of information that might be inaccurate.	The content is generally accurate, but some information is clearly flawed or inaccurate.	Content is confusing or contains several factual errors.
Use of sound	The commercial effectively uses sound and music to make an impact and helps the message of the ad.	The commercial uses sound and music to make an impact.	The commercial uses sound and music to make an impact, but does not help the message quite as much.	There is very little or effective use of sound and music in the commercial. Needs more to make it stand out from other advertisements.

Template for Letter to Parents

PBLWOrks

TEMPLATE FOR LETTER TO PARENTS

Dear Parent or Guardian:

I am writing to tell you about an exciting project we are about to do in our class.

As you might know, in our school we use the teaching method of Project Based Learning, or PBL, to help students learn better. A project motivates students to gain knowledge, and they remember it longer. Projects give students the chance to apply the skills they learn in school to personally relevant and real-world situations. Your child also learns skills in PBL such as how to think critically, solve problems, work in teams, and make presentations. These skills will help students succeed in the future, both in school and in today's work world.

Our project is called [*name of project*] and it will last about [*duration*]. Students will learn about [*content*, *topics, standards information*]. The project's driving question, which focuses our work, is [*driving question*]. Students will be involved in [*researching on the Internet, interviewing community members, preparing a presentation, creating a video, using technology, etc.*]. Your child will work in a team, guided by me. We will be working with [*other teachers, schools, organizations, experts, etc.*]. We will be going outside the classroom to [*do field work at, meet with, etc.*].

At the end of the project students will share their work publicly with [*audience*]. This event will take place in [*location*] and is scheduled for [*date*] at [*time*]. We hope you will be able to attend.

Students will be assessed individually in the project, based on the knowledge they gain and the skills they

Student Self Reflection Guide

My T	bough	bts Al	bout th	be Pro	ject
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Think about what you did in this project, and how well the project went. Write your comments in the right column.

Student Name:	
Project Name:	
Driving Question:	
About Yourself:	
What is the most important thing you learned in this project:	
What do you wish you had spent more time on or done differently:	
What part of the project did you do your best work on:	
About the Project:	
What was the most enjoyable part of this project:	
What was the least enjoyable part of this project:	
How could your teacher(s) change this project to make it better next time:	





PBL Resources Edutopia Project Based Learning

PBLWorks

PBL Toolkit Videos, Ideas, Samples, Rubrics

Google Drive Folder of Resources

Paul's Resources Lesson Plans & Resources

Boxlight Webinar Series

You can find us at:



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Transforming Learning in the Classroom





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