

PBL Introduction: “Cure for Cancer? You’re it.”

Goal:

Your task is to choose from different types of cancer and propose a cure based on current or newly developed treatment options. This task will help you to understand cancer as it relates to cellular reproduction and how it affects the body. You will learn how living things are organized and how it develops into different tissues. As your group conducts its **research** on treatments you will identify: (1) what the target of the treatment is, (2) how it well it works, and (3) any possible side-effects the treatment(s) may have. Lastly, each group will **collaborate to solve problems** taking on different roles and supporting one another towards the common solution: a cure for cancer.



Role:

You are representing a local hospital (Griffin, Yale, Mid-State, Norwalk, Stamford, St. Vincent’s) that is showcasing their treatment options and your expertise on your kind of cancer. You will play the roles of oncologists which is a specialty in medicine that treats cancer. As an oncology team each person will **research** different aspects of the project including but not limited to drug research and interactions, cancer statistics, human anatomy, and cellular reproduction.

Audience:

Your prospective audience will be a medical conference with different local hospitals presenting their findings. By sharing work with other researchers’ ideas there will be a deeper understanding of cancer. The hope is that your group can provide insight to managing or curing this common disease.

Situation:

Each hospital group will be researching a particular type of cancer. Why is cancer so common? How does it affect the body? How is this type of cancer different from other types? Your team of researchers will become experts.

Product/Performance and Purpose:

• You will create a [slideshow](#) in order to **communicate your knowledge of your cancer and prospective treatments as it relates to cellular reproduction.**

Standards & Criteria for Success:

- Your performance needs to demonstrate your expertise, be able to provide valuable feedback to other groups and consider feedback from other groups to enhance your own slides and presentation.
- *Your work will be judged by* both peers (informally before the mock conference as well as formally afterward) and by the instructors using a [final product rubric](#).
- Your product must meet the following standards: student constructed slides will adequately show diligence and comprehensive work toward (1) cellular hierarchy, (2) Mitosis and cell division processes, (3) cell structure and gene concept, (4) target of cancer treatment in body/cell, (5) how cancer works/spreads, (6) how effective is cancer treatment, and how is it theoretically supposed to work, and (7) Side-effects of cancer treatment and why they occur.
- A successful result will demonstrate competency in the following two areas: 1.4 Research and Inquiry & 3.1 Causality
- Vision of the Graduate Connections: Researcher, Problem Solver, Communicator

9-12.Sci.1.4

Science Research and Inquiry: Graduation

By myself and with others, I can actively engage in scientific investigation and argument, construct explanations and design solutions based on observational and experimental evidence to a defined problem.

Performance Indicator	Not Yet		Progressing			Competency		Mastery	
Score →	.5	1	1.5	2	2.5	3	3.5	4	
Construct and revise an explanation or argument based on valid and reliable evidence from a variety of sources, including students' own investigations and application of scientific principles.	I can:		I can:			I can:		I can:	
	<input type="checkbox"/>	construct an explanation or argument	<input type="checkbox"/>	construct and revise an explanation or argument	<input type="checkbox"/>	construct and revise an explanation or argument	<input type="checkbox"/>	construct and revise an explanation or argument	
	<input type="checkbox"/>	make an explanation based upon evidence	<input type="checkbox"/>	revise based upon valid and reliable evidence	<input type="checkbox"/>	revise based upon valid and reliable evidence	<input type="checkbox"/>	revise based upon valid and reliable evidence	
	<input type="checkbox"/>	use provided sources	<input type="checkbox"/>	use a minimum of one source in addition to my own data	<input type="checkbox"/>	use a minimum of two sources in addition to my own data	<input type="checkbox"/>	use a minimum of two sources in addition to my own data	
						<input type="checkbox"/>	make an explanation or argument that is connected to a relevant (related) scientific topic	<input type="checkbox"/>	make an explanation or argument that is connected to a relevant (related) scientific topic
								<input type="checkbox"/>	use my explanation or argument to make predictions when variables are manipulated

9-12.Sci.3.1

Science Causality: Graduation

By myself and with others, I can analyze relationships and use computational thinking to make predictions about complex natural and manmade systems, construct explanations of applicable cause and effect relationships to scientific phenomena at varying scale, and distinguish between scientific and nonscientific causal claims.

Performance Indicator	Not Yet		Progressing			Competency		Mastery	
Score →	.5	1	1.5	2	2.5	3	3.5	4	
Analyze and evaluate causal claims with empirical evidence that differentiates between cause and correlation in order to draw conclusions about their scientific validity and veracity.	I can:		I can:			I can:		I can:	
	<input type="checkbox"/>	identify scientific claims	<input type="checkbox"/>	use empirical evidence to analyze and evaluate scientific claims	<input type="checkbox"/>	use empirical evidence to analyze and evaluate scientific claims	<input type="checkbox"/>	use empirical evidence to analyze and evaluate scientific claims	
	<input type="checkbox"/>	recognize the difference between cause and effect relationships and correlation	<input type="checkbox"/>	differentiate between cause and effect relationships and correlation	<input type="checkbox"/>	differentiate between cause and effect relationships and correlation	<input type="checkbox"/>	differentiate between cause and effect relationships and correlation	
			<input type="checkbox"/>	make observations about the scientific validity and accuracy of the claims	<input type="checkbox"/>	draw conclusions, using my analysis, about the scientific validity and accuracy of the claims	<input type="checkbox"/>	draw conclusions, using my analysis, about the scientific validity and accuracy of the claims	
						<input type="checkbox"/>	develop logical arguments to support my conclusions	<input type="checkbox"/>	develop and defend logical arguments to justify and to support my conclusions
								<input type="checkbox"/>	disprove opposing claims