

STEAMS Breast Cancer Awareness Project-Based Lesson Plan (Grades 7-12)

Objective: The objective of this interdisciplinary lesson plan is to raise awareness about breast cancer and its societal impact. Students will explore the basics of cancer research, early detection, and simple technological tools that help in treatment. Through a STEAMS (Science, Technology, Engineering, Arts, Mathematics, and Social Studies) approach, students will complete easy-to-understand activities highlighting awareness, prevention, and the basics of breast cancer research and technology.

Key Components

Science (S): The Basics of Breast Cancer

- ❖ **Topic:**
Understand what cancer is, how breast cancer starts, and why it's important to catch it early.
- ❖ **Projects:**
 - Breast Cancer Basics Chart:**
Create a simple chart that explains the difference between healthy cells and cancer cells. Use simple terms to explain what happens when cells grow abnormally.
 - Health and Prevention Poster:**
Make a poster listing easy ways to help prevent breast cancer, such as regular check-ups and healthy lifestyle choices.

<p>Technology (T): Simple Detection Tools</p>	<ul style="list-style-type: none"> ❖ Topic: Learn about simple tools used for detecting breast cancer, such as mammograms and self-exams. ❖ Projects: <p>Breast Cancer Detection Poster: Create a poster that shows the importance of mammograms and self-exams. Include easy-to-understand facts about how these tools help catch cancer early.</p> <p>Tech App Brainstorm: Create a prototype app that can remind people to do regular self-exams, schedule mammograms or other preventative measures.</p>
<p>Engineering (E): Medical Devices and Prosthetics</p>	<ul style="list-style-type: none"> ❖ Topic: Explore how devices like mammogram machines or simple prosthetics help people with breast cancer. ❖ Project: <p>Prosthetic Design: Create an infographic of the evolution of breast prosthetics and create a design that enhances comfort and functionality for breast cancer survivors.</p>
<p>Arts (A): Breast Cancer Awareness and Advocacy</p>	<ul style="list-style-type: none"> ❖ Topic: Explore the role of art in raising awareness about breast cancer, examining how visual art and illustration campaigns have been used to advocate for research and support. ❖ Projects: <p>Awareness Poster: Design a poster to raise awareness about breast cancer, focusing on the importance of early detection and support for survivors. Use symbolism</p>

	<p>and impactful messaging to inspire hope and action.</p> <p>Advocacy Campaign: Create an art campaign or mural proposal regarding Breast Cancer Awareness Month. Highlight the importance of self-exams, early screenings, and supporting those affected by breast cancer.</p>
<p>Math (M): Analyzing Breast Cancer Statistics</p>	<ul style="list-style-type: none"> ❖ Topic: Use mathematical tools to analyze data related to breast cancer incidence rates, survival rates, and the effectiveness of different treatments across various demographics. ❖ Projects: <p>Data Visualization: Analyze breast cancer statistics from sources such as the American Cancer Society. Create a dynamic graph comparing survival rates, age group distribution, and risk factors over the past decade.</p> <p>Statistical Analysis: Calculate the percentage increase in survival rates over the last 20 years. Create a mock panel discussion with Q&A that discusses how advancements in early detection and treatment have contributed to these improvements.</p>

Social Studies (SS): The Social Impact of Breast Cancer

- ❖ **Topic:**
Examine the historical and cultural impact of breast cancer advocacy movements, including the Pink Ribbon campaign, and the role of nonprofit organizations in promoting breast cancer awareness and research.
- ❖ **Projects:**
 - History of Breast Cancer Advocacy:**
Create a timeline that traces the history of breast cancer advocacy, from the inception of the Pink Ribbon campaign to major breakthroughs in breast cancer research and awareness.
 - Community Outreach:**
Plan a mock community outreach event for Breast Cancer Awareness Month. Students will outline activities, partnerships with local organizations, and awareness-raising initiatives.

Assessment Criteria

Assessment will be guided by the 8-Step PBLP Framework, ensuring students meet the project objectives through collaboration and reflection. Students will begin by discussing the impact of breast cancer on society (Round Table) and reflecting on their understanding of the disciplinary topic (Reflection Point). They will learn each project topic and demonstrate their knowledge by completing project-based learning activities (Knowledge Setting). Students will then create their own research project based on breast cancer, which leads to community involvement (Community Involvement) and stakeholder review (Assessment). Feedback from peers and the community will refine their understanding (Feedback Loop), culminating in a final product that ties together all components. Students are encouraged to translate what they've completed into project experience on their resumes.