

PLTW GUIDANCE - BIOMEDICAL SCIENCE

This document has been prepared by a former Project Lead The Way Master Teacher to support high school Biomedical Science teachers in implementing the STEM Week Challenge with their students.

Why this Challenge?

The PLTW Biomedical Science curriculum exposes students to careers that are connected to students' work. The STEM Week Challenge allows students to go deeper into a career that interests them while having the opportunity to actually interact with a professional in that field, deepening their interest and understanding while helping them build networking skills that are crucial to accessing opportunities post-high school.

PLTW Pacing Guidance

The following are PLTW activities and projects that could be shortened or cut if you need to build in time for the STEM Week Challenge.

Course	Potential Activities to Skip (est. time)
Principles of Biomedical Science	<ul style="list-style-type: none"> Lesson 1.3 (~4 days)
Human Body Systems	<ul style="list-style-type: none"> Activity 1.3.2 (~1 day) Project 1.3.3 (complete steps 1-4 but skip the presentation) (~3 days)
Medical Interventions	<ul style="list-style-type: none"> Optional Problem 1.1.4 (~3 days) Optional Activity 1.2.2 (~2 days)
Biomedical Innovations	<i>N/A Given that this is a capstone course, build in the STEM Week Challenge as a career exploration and skill-building project for your upperclassmen</i>

Modified STEM Week Schedule

If you have limited time in your Biomedical Science class(s), you may want to find opportunities to reduce the instructional time spent on the STEM Week Challenge. The following calendar provides one an approach for streamlining the first five days of the project, encouraging students to choose a biomedical science career to explore (see list below).

Key: Red = cut activity blue = add activity yellow = do as homework

Project Day	Day 1 Project Launch	Day 2 Career Exploration and Research	Day 3 Focus on Networking	Day 4 Making Industry Contacts	Day 5 Product Review
Modified Day	Day 1	Day 2		Day 3	Day 4
Modified Activities	Gallery Walk And need-to-Know List Project Information Sheet	Career Coach Survey Career Sprint Shorter career sprint to choose from pre-set list (below) Networking video Network Mapping Team Formation and agreement Teachers pre-set groups in advance		Draft, Revise, and Send Industry Contact Emails	Industry Interview Prep Product Review Team Work Time

Implement Days 6-10 as written in the STEM Week Challenge materials. Note for Medical Interventions: Consider embedding STEM Week Challenge work time into classes while students are waiting on portions of a lab to run/finish

Related Careers

Principles of Biomedical Science	Human Body Systems	Medical Interventions
<ul style="list-style-type: none"> • App Developer (3.3.1) • Astronaut Physician (4.2.3) • Athletic Trainer (1.2.4) • Biomedical Engineer (4.1.3) • Biomedical Scientist (1.1.1) • Blood Spatter Analyst (1.1.4) • Cytogeneticist (2.2.4) • Cytopathologist (2.2.1) • Dermatologist (2.1.3) • Digital Forensics Investigator (1.1.3) • Emergency Medicine Physician (3.2.1) • Emergency Response Team Members (3.2) • Epidemiologist (3.1.1) • Fields of Nursing (LPN, RN, NP) (2.1.2) • Flight Paramedic (3.2.1) • Forensic Technician (1.1.6) • Forensic Toxicologist (1.2.3) • Forensic Scientists (1.1.6) • Geneticist (2.2.2) • Hematologist (2.1.4) • Histologist (1.2.4) • Marine Biologist (4.2.2) • Medical Examiner (1.2.1) • Microbiologist (3.1.5) • Molecular Biologist (2.2.6) • Music Therapist (2.2.5) • Patient Liaison (2.1.7) • Pharmaceutical Scientist (4.1.5) • Phlebotomist (2.1.4) • Physician Assistant (2.1.3) • Polygraph Examiner (1.1.2) • Preventive Medicine Specialist (4.1.4) • Primary Care Physician (2.1.1) • R&D Scientist and Software Engineer (4.1.2) • Triage Nurse (3.2.4) 	<ul style="list-style-type: none"> • Anesthesiologist (5.1.2) • Athletic Trainer (4.4.4) • Burn Care Nurse (5.1.2) • Dietician (3.2.5) • DNA Analyst (1.3.2) • Forensic Anthropologist (1.2.3) • Medical Technologist (3.4.5) • Neurologist (2.2.5) • Nutritionist (3.2.5) • Occupational Therapist (5.1.2) • Ophthalmologist (2.4.4) • Optician (2.4.4) • Optometrist (2.4.4) • Pharmacy Technician (3.3.3) • Physical Therapist (4.4.1) • Psychologist (5.1.2 it) • Radiological Technician (5.2.2) • Radiology and Software Engineer (5.2.2) • Reconstructive Surgeon (5.1.2) • Respiratory Therapist (3.3.4) • Social Worker (5.1.2) • Sports Medicine Physician (4.4.4) 	<ul style="list-style-type: none"> • Andrologist (2.2.2) • Anesthesiologist (4.3.5) • Audiologist (1.3.1) • Bioinformatician (1.1.3) • Biomedical engineer (4.1.5) • Chemist (4.1.5) • Clinical Laboratory Scientist (2.1.3) • CT Radiographer (3.1.2) • Data Scientist (1.1.6) • Embryologist (2.2.2) • FDA Researcher (4.1.5) • Genetic Counselor (2.1.1) • Laboratory Technician (4.1.5) • Marketing Agent (4.1.5) • Mechanical Engineer (4.4.3) • MRI Radiographer (3.1.2) • Occupational Therapist (3.3.4) • Orthotist (3.3.3) • Otolaryngologist (1.3.2) • Package Designer (4.1.5) • Perioperative Nurse (4.3.5) • Pharmaceutical Sales Rep (4.1.5) • Pharmaceutical Scientist (1.2.4) • Pharmacist (4.3.5) • Physical Therapist (3.3.4) • Process Engineer (4.1.5) • Quality Assurance/Quality Control Officer (4.1.5) • Reproductive Endocrinologist (2.2.2) • Research Associate (1.2.1) • Research Scientist (4.1.1) • Safety Officer (4.1.5) • Transplant Surgeon (4.3.5) • Virologist (3.2.4)

Note: for Biomedical Innovations, consider using the full list or directing students to choose from a career they remember exploring through earlier courses

General Curriculum Connections

In order to connect the career exploration students will do in the STEM Week Challenge more closely with their Biomedical Science Courses, consider the following strategies:

- ✓ Utilize the following **Professional Practices** (located in General Student Resources) to supplement aspects of the STEM Week Challenge project for students who need more help: Providing Peer Feedback (could replace the Tuning on Day 8), Project Management, Collaboration, Building Effective Presentations, Active Listening.
- ✓ Direct students to supplement their research with **PLTW's Career Profiles**, in-depth profiles of individuals in related fields that are linked in the Career Connections sections of PLTW's student materials.