



Course resumes showcase the technical skills students obtain in each PLTW course. Each resume outlines the computational skills, analytical skills, and knowledge acquired in the course. Course Resumes also detail student experience with tools, software, lab work, and engineering design. The detailed skills listed within course resumes illustrate the immediate, applicable contributions that students can make within a workplace.

Laboratory Skills

- Micropipetting
- DNA gel electrophoresis

Clinical Skills

- EMG analysis
- Spirometry
- Visual perception testing
- Urinalysis
- Ankle Brachial Index
- Blood typing

Equipment and Software Proficiencies

- Microsoft Office (Excel, Word, PowerPoint)
- Vernier probes and sensors
- Data Acquisition Software (Vernier Logger Pro)
- Microscope
- Goniometer

Scientific Experimentation Skills

- Design and conduct reliable scientific experiments
- Analyze and interpret laboratory data
- Construct graphs (by hand and using graphing software)
- Interpolate and extrapolate data from a graph
- Draw conclusions based on experimental data
- Thoroughly and clearly communicate results and conclusions both orally and in writing

Professional Skills

- Group collaboration
- Planning and organizing
- Time management
- Problem-solving
- Technical writing
- Verbal and written communication
- Decision-making
- Creative thinking



Course Knowledge

- Over-arching Themes
 - Homeostasis
 - Biomedical science careers
 - Interrelationship between body systems and health/disease
- Identity
 - Directional and regional terms
 - Histology
 - Forensic anthropology
 - Restriction Fragment Length Polymorphisms (RFLP) analysis
 - Biometrics
- Communication
 - Brain anatomy and physiology
 - Nerve impulse propagation
 - Response time for reflex and voluntary action
 - Endocrinology
 - Positive and negative feedback mechanisms
 - Eye anatomy and physiology
- Power
 - Digestive system anatomy and physiology
 - Enzyme/substrate interaction
 - Metabolism and ATP
 - Respiratory system anatomy and physiology
 - Diagnosis, monitoring, and treatment of asthma
 - Basic pharmacology
 - Urinary system anatomy and physiology
 - Nephron action
- Movement
 - Joint structure and function and range of motion
 - Physiology of muscle contraction
 - Cardiovascular system anatomy and physiology
 - Peripheral vascular disease
 - Exercise physiology
 - Skin anatomy and physiology
- Protection
 - Structure of bone
 - Bone fractures and bone remodeling
 - Lymphatic and immune system anatomy and physiology
 - Antigen/antibody interaction
 - Pedigree construction/analysis



Course Knowledge (cont.)

- Relationship between DNA, mutations, protein structure, and disease or dysfunction
- Relationship between genes, chromosomes, and DNA
- Restriction fragment length polymorphisms (RFLP) analysis
- Structure of DNA

Engagement Experiences

- Laboratory investigations
- Case studies
- Instant challenges
- Simulations
- Role playing
- Digital design: podcasts, videos, etc.
- Thought experiments
- Design thinking