Welcome to Principles of Biomedical Science (PBS) Class! Wheaton High School is the only school in Montgomery County to be partnered with Project Lead the Way to offer this class. The equipment that you work with this year has been specially purchased so that we can experiment, research, and build scientific models together. You are among some of the selected students across the country to take this course and experience science at this level. This course provides an introduction to the biomedical sciences through exciting hands-on projects and problems. Students investigate concepts of biology and medicine as they explore health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases. They will determine the factors that led to the death of a fictional woman as they sequentially piece together evidence found in her medical history and her autopsy report. Students will investigate lifestyle choices and medical treatments that might have prolonged the woman’s life and demonstrate how the development of disease is related to changes in human body systems. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes and allow students to design experiments to solve problems. Key biological concepts including maintenance of homeostasis in the body, metabolism, inheritance of traits, and defense against disease are embedded in the curriculum. This course is designed to provide an overview of all the courses in the biomedical sciences program and lay the scientific foundation for subsequent courses. These are the policies that I have created to make the most of the time that we have together and ensure our SUCCESS.

**Responsibilities – What are my responsibilities as a student in Ms. Sobieszczyk’s class?**

1. Always bring your binder, notebook and pencil to class. You will not be allowed to go to your locker after the tardy bell rings to get these things. Upon occasion a calculator will be needed, so have one available.

2. Tardy by definition in this class is simply not being in your assigned seat when the tardy bell rings. You are to be seated before the tardy bell rings. This specifically means personal business should be tended to such as sharpening pencils prior to the tardy bell. Three tardies will result in one unexcused absence. If you should arrive tardy, simply sign in on the tardy sheet near the front door. Your tardy will be logged into the computer. If you have an excused pass, then place it on my desk.

3. Dismissal will be by the teacher not by the bell. Always remain seated until you are dismissed; never stand by the door waiting for the bell.

4. Food or drink is NOT permitted in classroom/laboratory spaces. Sinks are not to be used to dispose of trash, including glass cover slips, paper towels, or anything else. Broken glass should be brought to my attention for proper disposal.

5. If you missed notes, labs, or an exam due to an absence it is your responsibility to get the missing information and schedule a completion time. Excused absences will be allowed the same amount of time you missed to make-up work before it is considered to be late. Failure to complete any assignment in a timely manner is recorded as a zero.

6. Hats, cell phones, and other electronic devises are to out of sight. Cell phones are to be turned off all during the school day. Electronic devises are to be turned off during class time. Violation of this school wide policy could result in the confiscation of your property. If this should occur you will have to deal with an administrator to retrieve your property.

7. Integrity and honesty are expected. Copied work, either from a peer, the Internet, or other text is not allowed. Students should understand the need for processing one’s own ideas and recording sentences is an individual responsibility.
A weekly agenda will be provided to you at the beginning of each week. Each class period will follow the format outlined below.

- **Warm-up** question/activities will start every class period to engage students in the content of class.
- **Homework check** occurs when students are working on the warm-up. Students are required to have the assignment and homework sheet on the desk when they come into class.
- Review previous homework assignment. Explain new homework assignment and refer to weekly agenda.
- There will be Mini-lessons on content and the power points will be posted to edline and/or the hand-out folders.
- **Work period**: Project Work in small groups, laboratory Investigations, or oral presentations.
- **Exit-tickets** will summarize the content that was addressed during class & how it will relate to what is being done the following day.

### Materials – What should I bring to PBS class?

- The following will be provided and will remain in the classroom: Scientific Science Notebook, 1.5" binder and 7 dividers
  - Label dividers References, Opportunities, Unit 1, Unit 2, Unit 3, Unit 4, Unit 5, Unit 6
- Keep handy to bring-in for projects and homework: Ruler, calculator, glue stick, and colored pencils
- Bring a couple of pencils and pens (blue or black only) and loose leaf paper EACH DAY!!!
- Keep a folder labeled PBS to bring homework back and forth from home.
- Purchase: a marbled composition notebook AND loose leaf paper.

### Assessment – How will I be graded in PBS?

1. Each assignment will have a due date and a deadline date. Any student, who turns in his/her work after the due date, will be penalized one letter grade. Assignments will not be accepted after the deadline date.
2. Cheating will not be tolerated. Plagiarism is cheating! Students will receive a score of zero for any assignment in which the student has cheated.
3. All tests will be announced. Quizzes may be announced or unannounced. Some quizzes may be re-taken once a student has shown that he/she has mastered the indicator. Unit exams or final exams will never be retaken.
4. Grades are posted on the web. Progress reports will be issued at three week intervals. Students are expected to keep all returned papers. In case of a grade discrepancy, the burden of proof rests entirely on the student! Keep all papers!
5. Students who fulfill the requirements of an assignment or exam will not receive any grade lower than 50%. However, students who do not complete the assignment will receive a zero and may not have the opportunity for a re-take or re-assessment.
6. **Make-up Policy**: If you are absent, it is up to you to get the work and the assignments you have missed during lunch or after school. The weeklies for each class and handouts are located in the crate labeled PBS. For excused absences, you will have as many days to make up this work as the days that you missed.

#### Grading Scale

- **100 - 90 = A**
- **89 - 80 = B**
- **79 - 70 = C**
- **69 - 60 = D**
- **59-0 = E**

**Summative Assessments**
- Tests
- Projects and Laboratory Analyses
- Oral Presentations

**Formative Assessments**
- Career Journal
- Assignments
- Notebooks

**Homework**
- 10%
<table>
<thead>
<tr>
<th>PBS Topics</th>
<th>Activities/ Labs/ Projects</th>
<th>Month</th>
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| Unit One: The Mystery (23 days) | **Lesson 1.1: Investigating the Scene (10 days)**  
Activity 1.1.1: A Mysterious Death  
Activity 1.1.2: The Evidence  
Project 1.1.3: Blood Spatter Analysis | September October |
| | **Lesson 1.2: DNA Analysis (8 days)**  
Activity 1.2.1: What is DNA?  
Activity 1.2.2: Structure of DNA  
Activity 1.2.3: DNA Analysis | |
| | **Lesson 1.3: The Findings (5 days)**  
Activity 1.3.1: The Autopsy  
Activity 1.3.2: Was It a Crime? | |
| Unit Two: Diabetes (39 days) | **Lesson 2.1: What Is Diabetes? (10 days)**  
Activity 2.1.1: Diagnosing Diabetes  
Project 2.2.2: The Insulin Glucose Connection  
Activity 2.1.3: Feedback | October November |
| | **Lesson 2.2: The Science of Food (13 days)**  
Project 2.2.1: Food Testing  
Activity 2.2.2: Food Labels  
Activity 2.2.3: The Biochemistry of Food  
Activity 2.2.4: Energy in Food | |
| | **Lesson 2.3: Life With Diabetes (16 days)**  
Activity 2.3.1: A Day in the Life of a Diabetic  
Project 2.3.2: Diabetic Emergency!  
Activity 2.3.3: Complications of Diabetes  
Problem 2.3.4: The Future of Diabetes Management&Treatment | |
| Unit Three: Sickle Cell Disease (33 days) | **Lesson 3.1: The Disease (6 days)**  
Activity 3.1.1: Blood Detectives  
Activity 3.1.2: Sickle Cell Diaries | December January |
| | **Lesson 3.2: It's In the Genes (9 days)**  
Activity 3.2.1: Protein Synthesis  
Activity 3.2.2: The Genetic Code  
Activity 3.2.3: Does Changing One Nucleotide Make a Big Difference? | |
| | **Lesson 3.3: Chromosomes (12 days)**  
Activity 3.3.1: How is DNA Passed Through the Generations  
Activity 3.3.2: Chromosomes – A Closer Look  
Activity 3.3.3: The Immortal Cells  
Activity 3.3.4: Confidentiality | |
| | **Lesson 3.4: Inheritance (6 days)**  
Activity 3.4.1: Family Inheritance  
Activity 3.4.2: What’s the Probability?  
Activity 3.4.3: World Distribution of Sickle Cell Disease | |
| Unit 4: Heart Disease (39 days) | **Lesson 4.1: Heart Structure (7 days)**  
Activity 4.1.1: Path of Blood in the Heart  
Activity 4.1.2: Anatomy of the Heart | February  
March |
| | **Lesson 4.2: The Heart at Work (11 days)**  
Project 4.2.1: Heart Rate  
Project 4.2.2: Blood Pressure  
Activity 4.2.3: EKG | |
| | **Lesson 4.3: Heart Dysfunction (12 days)**  
Project 4.3.1: What is Cholesterol?  
Activity 4.3.2: Hypercholesterolemia  
Problem 4.3.3: The Heart as a Pump | |
| | **Lesson 4.4: Heart Intervention (9 days)**  
Project 4.4.1: Unblocking the Vessels  
Project 4.4.2: Heart Disease Intervention | |
| **Unit 5: Infectious Disease (20 days)** | **Lesson 5.1: Infection (20 days)**  
Activity 5.1.1: Contagious  
Activity 5.1.2: Infectious Disease Agents  
Activity 5.1.3: Isolating Bacteria  
Activity 5.1.4: Gram Staining  
Activity 5.1.5: Bacterial Identification  
Project 5.1.6: Lines of Defense | April  
May |
| **Unit 6: Post Mortem (8 days)** | **Lesson 6.1: Analyzing Anna (8 days)**  
Project 6.1.1: How Do the Parts Make a Whole?  
Activity 6.1.2: How Did She Die? | May  
June |
| EOC | The PLTW End of Course Exam (40 MC and several essays) | June |