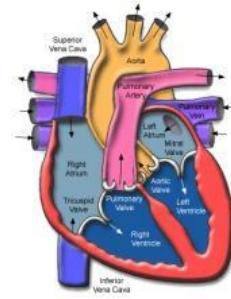


## Mrs. Hoffman PLTW Human Body Systems

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Room: 3052

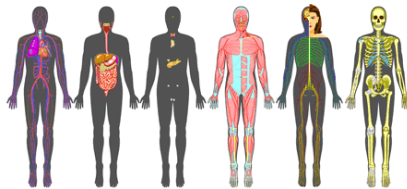
2019 – 2020



See Upcoming Assignments, Test/Quiz Review Websites, and Helpful Study Resources at

<http://www.hoffmanheartshbs.com>

Welcome to Human Body Systems (HBS)! This course provides a “hands on” approach to the human body through case studies, projects, and activities. HBS is the second of a four-course series and is an honors level course. This year you will investigate the interactions of body systems and discover the effects of a system failing to function and the resultant impact on homeostasis and examine how medical professionals solve real-world case studies. The activities and projects will investigate identity, communication, power and movement. It will also allow you to design experiments to solve problems and explore how the body systems interact to maintain a balance. You will use data acquisition software to monitor body functions such as muscle movement, respiration, reflex, and voluntary action. Throughout the year you will be constructing organs and muscles that will be incorporated into a skeletal Manikin.



### UNITS OF STUDY

Unit	Summary
1: Identity	Systems function together to maintain homeostasis; Identify and analyze bones of the human skeletal system; Research health care professional careers; Evaluate current technology to protect identity
2: Communication	Create a map of regions of the brain; Build a model of the endocrine system; Complete dissections; Evaluate visual perceptions and diagram the eye
3: Power	Compare the roles of food, water and oxygen in the human body and describe the body systems associated; Outline and build the digestive, endocrine, respiratory and urinary systems; Analyze a diet comparing energy input and outputs; Research structure and function of ATP
4: Movement	Identify joints, muscles, and blood flow diagrams; Measure range of motion; Test muscle tissue and analyze muscle fatigue and exercise; Compare arteries, veins and capillaries
5: Protection	Build and design tissue layers and research how burns affect the body; Dissect and compare sections of bone; Identify bone fractures and diagram stages of bone healing after injury; Describe the role of the immune system in protecting the body
6: Homeostasis	Design an innovative medical intervention or invention to protect the body in extreme external conditions; Research etiology, diagnosis and treatment of a disease/disorder



## CLASSROOM EXPECTATIONS:

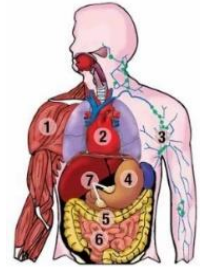
- **Be prepared. Be on time.** Bring your binder, notebook, assignments, pens/pencils with you to class every day. Do your best to be on time every day. Three tardies count as an unexcused absence. Students who arrive without a pass will be considered tardy.
- **Be respectful.** Show respect to classmates, teachers, guests, and personal and school property.
- **Be responsible.** You are always responsible for your own actions. Never play with equipment or fool around in class. Follow safety protocol in the lab.
- **Be productive and do your OWN work!!** Cheating and plagiarism will result in an automatic zero. Be involved in class discussions and activities.
- **Clean up your area.** Class will not be dismissed until the room is clean and materials are put away.
- **Ask Questions!** If you don't ask, you'll never know!

## REQUIRED:

- Lab Binder and Notebook: Students are required to keep and maintain a notebook for this class. The three ring binder should have dividers with the following sections: Warm Ups, Resources, Units 1 - 6, Graphic Organizers

## GRADING POLICY:

- Grading scale for this class:
  - A: (89.5% - 100%)
  - B: (79.5% - 89.4%)      **\*\*Late work will be deducted 10% up until the deadline\*\***
  - C: (69.5% - 79.4%)
  - D: (59.5% - 69.4%)      **\*\*Work not turned in by the deadline date will be recorded as a zero\*\***
  - E: (0% - 59%)
- Types of assessments:
  - Quizzes – every 2 - 3 weeks
  - Lab Investigations – 2 - 3 times a week
  - Homework – 4 - 5 times a week
  - Projects – at least one per quarter
- Weighting of Tasks and Assessments



Labs	40%
<b>Summative Assessments:</b> Tests/Quizzes and Projects	30%
<b>Formative Assessments:</b> Homework, Online Surveys, and Models	20%
Career Journals	10%

## MAJOR ASSIGNMENTS:

- All assignments will be posted on the class website and updated on a regular basis. All due dates and information will be listed on the homepage under “Upcoming Due Dates” as well as in the “Weekly Blog.” All hand outs and rubrics will also be posted as attachments.

## ACADEMIC DISHONESTY:

- I have **ZERO** tolerance for cheating, copying, or unapproved collaboration of any kind. It is assumed that you will strictly abide by the Academic Honor Code. Make sure that you cite all references (in APA format), including internet sites, in all submitted work. Any work found to be plagiarized either from a source or copied directly from another student will result in a **ZERO, NO EXCEPTIONS!**



## HOMEWORK:

- Homework will be related to the curriculum and will be assigned to strengthen skills, reinforce concepts, and/or prepare for a lesson, unit, or activity.
- In this course, homework will be (A) check only for completion OR (B) evaluated for learning.
- In accordance to MCPS policy, no additional assignments for extra credit will be considered.

## LATE WORK AND/OR MISSING WORK:

- Each assignment will have a due date. This is the date by which you are expected to submit the assignment. Your grade will drop one letter grade if it is not turned in by the due date.
- The deadline is the last day an assignment will be accepted for a grade. Work not turned in by the deadline will be recorded in the grade book as a zero. While students may receive feedback on the task, they generally will not earn credit after the deadline has passed. **The deadline is a week after the section quiz or unit test.**
- If a student is absent from class, that student is responsible for making up missed work.
- **A student who knows they will be absent from class on a particular date (due to sports, vacations, academic activities, etc.) is still expected to hand in any work that was assigned to be due for that day. You may hand in work the day before it is due, or the morning of, but any work handed in later than the assigned class time will be counted as late. A PICTURE OF THE COMPLETED WORK SENT IN AN EMAIL WILL COUNT AS ON TIME!!!**

## RE-TEACHING AND REASSESSMENT

- Re-teaching occurs when teacher or student determines that the student is not meeting learning goals.
- Reassessment opportunities are identified by the teacher before the original task/assessment and will occur within an instructional unit.
- Assessments or tasks that provide measures of student progress within an instructional unit may be reassessed. The following cannot be reassessed: End of course or semester exams, assessments that end an instructional unit or period of study, final research papers, reports or essays that were plagiarized; culminating projects or performances.
- When tasks are reassessed, they may be reassessments partially, entirely, or in a different format and the reassessment grade replaces the original grade.

## COMMUNICATION

- Student Handbook/Planner
- Progress Reports/Interims/Report Cards
- myMCPS
- Email
- PLTW HBS website ([hoffmanheartshbs.com](http://hoffmanheartshbs.com))

### Please note codes that may appear in the gradebook:

- **X** stands for Exempt. This means the assignment does not count towards the student's grade, and the student does not need to make-up this assignment.
- **Z** stands for a Zero. This is used when an assignment has not been turned in by the Due Date, but can still be turned in, for partial credit, before the Deadline. If the assignment is not turned in by the Deadline, the teacher must convert the grade to a numeric zero (0) immediately after the deadline has passed.
- **o** stands for Zero. This is used when an assignment has not been submitted by the Deadline or less than 25% was received on an assignment.

I hope that you find this class exciting and educational. It will be a lot of hard work but I am here to help each and every one of you succeed and reach your highest potential. I am available outside of class time for extra help but it is best to schedule a meeting in advance. I look forward to a great year!



-Mrs. Hoffman-



# DID YOU KNOW?



- Nerve impulses to and from the brain travel as fast as 170 miles per hour.
- The brain operates on the same amount of power as 10-watt light bulb.
- The human brain cell can hold five times as much information as the Encyclopedia Britannica.
- Your brain uses 20% of the oxygen that enters your bloodstream.
- The brain is much more active at night than during the day.
- 80% of the brain is water.
- Every day the average person loses 60-100 strands of hair.
- The fastest growing nail is on the middle finger.
- The acid in your stomach is strong enough to dissolve razorblades.
- The human body is estimated to have 60,000 miles of blood vessels.
- You get a new stomach lining every three to four days.
- The surface area of a human lung is equal to a tennis court.
- Scientists have counted over 500 different liver functions.
- The aorta is nearly the diameter of a garden hose.
- Your left lung is smaller than your right lung to make room for your heart.
- Sneezes regularly exceed 100 mph.
- Coughs clock in at about 60 mph.
- A full bladder is roughly the size of a soft ball.
- Feet have 500,000 sweat glands and can produce more than a pint of sweat a day.
- During your lifetime, you will produce enough saliva to fill two swimming pools.
- The average person expels flatulence 14 times each day.
- Your teeth start growing 6 months before you are born.
- Babies are always born with blue eyes.
- A fetus acquires fingerprints at the age of three months. Every human spent about half an hour as a single cell.
- After eating too much, your hearing is less sharp.
- About one third of the human race has 20-20 vision.
- If saliva cannot dissolve something, you cannot taste it.
- Your nose can remember 50,000 different scents.
- A human head remains conscious for about 15 to 20 seconds after it is been decapitated.
- It takes 17 muscles to smile and 43 to frown.
- Babies are born with 300 bones, but by adulthood the number is reduced to 206.
- We are about 1 cm taller in the morning than in the evening.
- The strongest muscle in the human body is the tongue.
- The hardest bone in the human body is the jawbone. if
- You use 200 muscles to take one step.
- The feet account for one quarter of all the human body's bones.
- About 32 million bacteria call every inch of your skin home.
- Humans shed and regrow outer skin cells about every 27 days.
- Three hundred million cells die in the human body every minute.
- Humans shed about 600,000 particles of skin every hour.
- Every day an adult body produces 300 billion new cells.
- Your body has enough iron in it to make a nail 3 inches long.
- The most common blood type in the world is Type O.
- The indentation in the middle of the area between the nose and the upper lip has a name. It is called the philtrum.
- There are 206 bones in the adult human body and there are 300 in children (some of the bones fuse together).
- It takes approximately 12 hours for food to entirely digest.
- The human eye blinks an average of 4,200,000 times a year.
- Human jaw muscles can generate a force of 200 pounds (90.8 kilograms) on the molars.
- In your lifetime, you'll shed over 40 pounds of skin.

