

New Manchester High School Honors Biology Summer Assignment 2017-2018

Welcome to 9th Grade and Honors Biology! In order to be accepted into this course the coming year you must complete this packet and turn it in on your first day of Biology class. You will need to do your best work and follow all instructions completely. Failure to follow instructions or turn in assignment will **disqualify you from participating in the honors course next year.**

Honors Biology is an introductory science course taught at the Honors level. This course will prepare students for the critical thinking and problem solving skills required in higher-level high school and college courses. We will study everything from the microscopic organelles of a cell to the complexity of living organisms! The summer assignment will introduce you to many of the topics that we will visit this year and give you a much needed head-start that will ensure your success in the course.

The purpose of this assignment is to give students an opportunity to show that they are proactive and, therefore, do not need constant supervision to do quality work on time. What you get out of this class will be based solely on what you are willing to put into class. The students who have performed most successful in this class and on the End of Course (EOC) exams are those students who are willing to work steadily throughout the summer, the school year and are willing to work independently. As your teacher, I expect my Honors students to be prepared and well-behaved during class that way I can concentrate on teaching and help you get the most out of this course. If you come to class eager to learn, focused and prepared, I can promise that you will learn a great deal about Biology and have a good time in the process.

To complete this assignment, you may use ANY resources that you wish. You may even collaborate with each other, but I absolutely do not want to see identical work from any students! Students with plagiarized or copied work from each other will **automatically be denied entry into the Honors course** as well. It is called an Honors course for a reason. If you are copying work, that is not very honorable. The best way to contact me is at my school email: qiana.worlds@douglas.k12.ga.us. Feel free to contact me over the summer with ANY QUESTIONS about this assignment, but please don't worry if I don't respond immediately because I may not check my email every day. I can promise you that I will check my email multiple times a week, so if you don't hear back from me, just be patient and I will respond soon.

Make sure that you complete all parts of the summer assignment. If your assignment is incomplete or not turned in, you will be removed from the Honors Biology course. The best advice is **DO NOT** wait until the end of summer to start working!

I look forward to seeing you next school year!

Ms. Worlds

What is an Honor Student?

Honors Biology

These are the qualities that I believe define an Honor student. I believe that these qualities are all equally important so this is not a ranked list.

- **Intelligence**

This quality is not just about being 'smart.' It is being 'smart' enough to *identify* what you do not know or *understand* and then actively seeking sources of help.

- **Self-Motivation**

This quality describes your attitude. Enrollment in this 'honor' level class is voluntary. **Your desire to learn the material should be your chief motivation.** *You understand that the teacher will not plead or beg an honors level student to do the assigned work. You are willing to go the extra mile when necessary to succeed.*

- **Integrity / Character**

This quality is about doing the right thing in all situations. If you have integrity, you do not cheat on any assignment, whether a test, quiz, project or homework. You do your own work. If you have integrity it means you do not help others to cheat either, be it *providing* homework for someone to copy or *providing* the questions/answers for a test or quiz in class or for another class.

- **Work Ethic / Industriousness**

This quality means that the work you turn in is of your highest quality. **You show complete and organized work on all assignments** (tests, quizzes, homework, projects) clearly identifying how you arrived at the solutions. Showing just answers does not show any work ethic at all and is *unacceptable*.

Industriousness means that you use all available time to learn and improve. This could simply be starting your homework if there is time left in class. It could mean asking questions about a concept of which you are unsure. When given an extended problem / project / assignment, industriousness means that **you start on the assignment promptly and not wait until the night before the test or due date**

(KEEP THIS IN MIND FOR THIS PROJECT!) This quality means *you do not do work for another class or play games on your phones during class time.*

- **Safety**

Honor students treat the lab and lab materials with respect. While they may not yet know all the safety regulations, they do know that horsing around or misbehaving in the lab can potentially cause injury or worse to themselves and their peers. Honor students do not need to be told how to behave properly in a lab, or when to appropriately observe safe and correct lab techniques. Honor students ensure the lab is cleaner than when they found it once they are finished using the lab.

- **Inquisitiveness**

This quality means that if you have a question, you ask the question as soon as possible. An honor student does not just sit there and take notes; they think: “Did I understand?” “Does it make sense?” “What if?” Being shy *is not a valid excuse in an honors class*. Do not make the mistake of assuming that a concept you do not understand now in class will all make sense later on. Being inquisitive also means taking advantage of all opportunities to help yourself including:

- Your teacher in class
- Your teacher out of class
- Your textbook
- Other teachers of the same subject
- Other students who may have a grasp of the concept

- **Ingenuity**

This quality is about applying knowledge, not just memorization. An honor student is able to devise solutions to problems that have never seen before. They are able to take what they have cumulatively learned in the class and all of *their current and previous* classes and apply it *toward* the solution of a new problem.

I have read and understand the qualities and expectations of an Honors level student as stated above and realize my performance will be judged, and, ultimately, my grade will be determined using these criteria. I agree to perform as an Honors level student at all times and work to my highest level.

Student Printed Name

Student Signature

Parent/Guardian Printed Name

Parent/Guardian Signature

Parent Email Address

Date

Assignment:

Your assignment consists of four (4) sections. The assignment is worth a total of 362 points in the Major Project section of your grade.

The Grade Breakdown (Grading Rubric) is as follows:

1. Vocabulary Flash Cards – 100 points

50 Flash Cards @ 2 Points each Total = 100 points

2. Prefix/Suffix Chart – 100 points

30 Prefix @ 2 points* each = 60 points

20 Suffix @ 2 points* each = 40 points Total
= 100 points

*1 point for Meaning & 1 point for Example

3. Hypothesis & Variable Statements – 102 points

6 Statements @ 17 points each Total = 102 points

Breakdown of Points:

- Each Hypothesis – 9 points
- Each Independent Variable – 4 points
- Each Dependent Variable – 4 points

Total = 17 points

4. Element & Macromolecule Chart – 60 points

4 Macromolecules with 3 Blanks each – 12 Blanks

Each Blank – 5 Points Total
= 60 Points

This assignment is due on the first day of class. 20 points will be deducted for each class period that it is late until the 3rd class period. No summer assignments will be accepted after the 3rd class period, and failure to submit a summer assignment will result in removal from the Honors Biology course.

Section 1: Biology Vocabulary

Create flash cards of the definitions for the following terms:

ABIOTIC FACTORS	PARASITE	MUTUALISM
BIOTIC FACTORS	HOST	COMMENSALISM
ADAPTATION	HERBIVORE	BIOMASS
POLARITY	CARNIVORE	CELL WALL
BIODIVERSITY	OMNIVORE	MONOSACCHARIDE
SUCCESSION	SCAVENGER	RADIATION
PRODUCER	DECOMPOSER	CILIA
NICHE	AEROBIC	PROTIST
PHOTOSYNTHESIS	ANAEROBIC	PROTEIN
CELLULAR RESPIRATION	CHEMOSYNTHESIS	ENZYME
MITOCHONDRIA	CARBOHYDRATE	NUCLEIC ACIDS
CHLOROPLAST	EUKARYOTE	NUCLEUS
CELLULOSE	PROKARYOTE	BINARY FISSION
HOMEOSTASIS	FLAGELLA	BUDDING
DIFFUSION	LIPID	MEIOSIS
OSMOSIS	RIBOSOME	MITOSIS
CELL MEMBRANE	MUTATION	

Section 2: Biology Prefixes and Suffixes

Learning science vocabulary can feel like learning a different language, mainly because it is! The roots of most of these words are either Latin or Greek. By breaking them down and learning the meaning of their prefixes and suffixes we can begin to "speak scientist!"

Look up the meaning of each prefix and suffix below and give an example of how they are used.

**** Optional ADDITIONAL DAILY Grade for Prefix & Suffix Flash Cards (100 pts)****

Prefix	Meaning	Example Using Prefix/Suffix
Ab-		
Anti-		
Auto-		
Bi-		
Cyto-		
Di-		
Macro-		
Meta-		
Micro-		
Mono-		
Hemi-		
Hetero-		

Homo-		
Hydro-		
Hyper-		
Hypo-		
Inter-		
Intra-		
Iso-		
Neuro-		
Path-		
Poly-		
Photo-		
Pseudo-		
Sub-		
Therm-		
Trans-		
Tri-		
Un-		
Zoo-		

Suffix	Meaning	Example Using Prefix/Suffix
-asis		
-blast		
-emia		
-genic		
-gram		
-graph		
-ism		
-ist		
-itis		
-kinesis		
-lysis		
-meter		
-oma		
-osis		
-otomy		
-ous		
-phyll		
-philic		
-phobic		
-scope		

Section 3: Elements and Macromolecules

The following Elements and Macromolecules are essential to our studies this year and must be mastered prior to the beginning of class. Fill out the table correctly, completely and know their content.

MACRO-MOLECULE	STRUCTURE	FUNCTION	HOW DOES THE BODY ACQUIRE IT?
Carbohydrates			
Proteins			
Lipids			
Nucleic Acids			

Section 4: Hypothesis & Variable Statements

A hypothesis is usually written a particular way. Hypothesis are written as an "If this, then that" statement. In the following statements, create a hypothesis and identify the independent variable and then the dependent variable. (Research these terms if you do not know what they mean.)

1. Will loud music affect the height of corn plants?

- Hypothesis: _____

- Independent Variable: _____
- Dependent Variable: _____

2. Will nicotine affect mold growth?

- Hypothesis: _____

- Independent Variable: _____
- Dependent Variable: _____

3. Will growing tomato plants in water affect mass size?

- Hypothesis: _____

- Independent Variable: _____
- Dependent Variable: _____

4. Will salt in water affect the breathing rate of a goldfish?

- Hypothesis: _____

- Independent Variable: _____
- Dependent Variable: _____

5. Will the use of bug spray attract fewer mosquitoes?

- Hypothesis: _____

- Independent Variable: _____
- Dependent Variable: _____

6. Will eating cake every day increase a person's health?

- Hypothesis: _____

- Independent Variable: _____
- Dependent Variable: _____