

# Genetics

Two Rivers High School

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**Office Hours: 7:40 AM – 4:00 PM**

**Course Description:** This is the study of human heredity and Mendelian genetics. The student will gain a better understanding of why “you are you” both physically and chemically. Human genetics is lab oriented and involves extraction, separation of DNA fragments by electrophoresis, and statistical analysis of genetic traits in populations. The recent advances in genetic engineering are covered as well as the ethical and legal problems they create.

## Major Subjects Covered

Mendelian Genetics	Transcription/Translation	Genomics, Application and Ethics
Extensions of Mendel	Gene Mutation	Chromosome Mapping
DNA Structure & Replication	Recombinant DNA	Population Genetics

**Goal:** Students should be able to discuss the topics covered in class and use that information to make informed choices in their lives.

## **Syllabus**

Week 1 – Introduction, DNA Extraction, Mendelian terms	Week 10 - Conditions, Test
Week 2 – Genetic Problems, Reebops, Corn Statistics	Week 11 – Genetic Engineering, pGlo Lab
Week 3 – Test, Genetic Terms and Problems	Week 12 - Gene Therapy, Test
Week 4 – Pedigrees, Bear Genetics	Week 13 – Population Genetics, DNA Fingerprinting
Week 5 – Test, Genetics of Sex, QTL Study	Week 14 – Human Genome Project, Test
Week 6 – Test, DNA Structure	Week 15 – Cloning, Evolution
Week 7 – Replication, Transcription, Translation	Week 16 – Cladograms
Week 8 – Review, Test	Week 17 – Test, Cell Cycle, Cancer
Week 9 – Mutations, Chromosomes, Genetic Testing	Week 18 – Semester Exam

**Text: *Human Genetics, Concepts and Applications/ Ricki Lewis***

## Class Materials

- 1. Notebook**– Lecture information is to be written down and will provide a good study source.
- 2. Textbook** – Cover it and take care of it. You are responsible for returning the same book and must pay for any damages or for the replacement of the book if lost.
- 3. Writing Utensils** – You will be expected to take notes, record data during class, and take tests.
- 4. Folder and/or 3-ring binder** – You will need a place to store handouts for future use.

## Expectations and Class Policies

**Class Activities** – All students are expected to participate in class activities: discussions, individual and group labs, cooperative projects, etc. You can expect to work with different members of your class.

**Absentees** - It is **your responsibility** to get and make up work missed on absent days. All previous and future days activities are located on my website. Ask me to get worksheets. Notes are also online.

**Tardy** – Repeated tardiness will require you to serve a detention with me.

**Bathroom** – During down time, students may go to the bathroom. Down time includes working in small groups or individually, when it is not a whole class activity.

**Locker**– Please remember to bring your materials. Once class is started, you are to be here.

**Lab Rules** will be discussed during lab sessions. Students are to use appropriate behavior during labs and take proper care with the equipment. Students will pay for any broken equipment due to carelessness.

**School Rules** – All school rules will apply in this class.

Cell phones, **Food, Drink**, and any other items deemed distracting are not allowed in class. **Only colorless water in a clear water bottle is allowed to be consumed.**

**Teacher will add or change policies throughout the year to ensure a proper learning environment.**

### Student behavior

In order to make this class a productive learning environment, disruptive behavior is not appropriate or acceptable. Students need to help make this a desirable learning environment by acting in a professional manner. Students causing a disturbance will be asked to change their behavior.

I have two main rules in my classroom that cover most all others:

- 1. Do not disrupt another student's learning.**
- 2. Do not disrupt the teacher's teaching.**

I do my best to provide a safe and meaningful environment. I try to be consistent and fair in all grading procedures. Any student or parent wanting to discuss the class or who needs to discuss the expectations should make an appointment with me. Any student with needs that I am not addressing is encouraged to bring it to my attention.

### *Assessment/Grading Policy:*

Assignments such as worksheets, projects, and lab reports will be assigned, a point value given by the characteristic of the assignment, and it will be graded. Tests will be given about every two weeks. Most (~85%) of your grade will be based on tests, quizzes, and assessment projects.

Grades will be determined by adding the total number of points earned over a quarter divided by the number possible to obtain a percentage. The letter grade will be assigned as on the right.

All assignments should be turned into the bottom basket at the front of the room.

Assignments are meant for students to practice the use of material or delve deeper into the topic. Each one of you is expected to learn and explore, so each one of you is expected to do your own work. Consequences for copying, letting copy, or plagiarizing will occur for improper work. You will be asked to do it again or an alternative assignment.

A	93 – 100 %
A-	90 – 92.99%
B+	87 – 89.99 %
B	83 - 86.99%
B-	80 – 82.99%
C+	77 – 79.99%
C	73 – 76.99 %
C-	70 – 72.99%
D+	67 – 69.99%
D	63 – 66.99%
D-	60 – 62.99 %
F	0 – 59.99 %

If due dates are not explicitly given, it is your responsibility to ask and know by when it is due and to get it in.

A semester grade will be determined by combining your cumulative work grades with a semester exam grade (worth 10%). **Students must be present to take the final exam unless an arrangement is made in advance.**