

## Zumbro (Biology/Honors Biology) (2020 - 2021)

### Course Outline/Map:

#### 1<sup>st</sup> 9 weeks

##### **Unit 0: Think Like a Scientist**

- *Scientific Inquiry*
- *Lab Safety*

##### **Unit 1: Cell Structures & Transport**

- *Cell Structures & Organelles*
- *Macromolecules*
- *Technology*
- *Enzymes*
- *Cellular Transport*

#### 2<sup>nd</sup> 9 weeks

##### **Unit 2: Cellular Processes**

- *Photosynthesis & Cellular Respiration*
- *Mitosis*
- *Cell Cycle*
- *Cancer*

##### **Unit 3: DNA/RNA & Protein Synthesis**

- *DNA Structure*
- *Replication*
- *Synthesizing Proteins*
- *Effects of Gene Mutations*

#### 3<sup>rd</sup> 9 weeks

##### **Unit 4: Cellular Processes**

- *Sexual Reproduction*
- *Meiosis*
- *Mendel's Laws/Non-Mendelian*
- *Chromosome Mutations/Karyotypes*
- *Mono/Dihybrid Crosses*

##### **Unit 5: Classification**

- *Endosymbiosis*
- *Kingdom to Clades*
- *Cladograms*
- *Phylogenetic trees*

#### 4<sup>th</sup> 9 weeks

##### **Unit 6: Evolution**

- *Natural selection*
- *Evidences of Evolution*
- *Genetic Drift*
- *Speciation*
- *Patterns of Evolution*
- *Antibiotic resistance*

##### **Unit 7: Ecology**

- *Energy flow*
- *Cycling of matter*
- *Ecosystems*
- *Environmental stability*
- *Biodiversity (pop. size, carrying capacity, limiting factors, etc.)*
- **REVIEW and Standardized Testing (EOC)**

### Course Description:

Biology examines life's organization at all levels from cells to the biosphere. Energy as it is transformed from one form to another as it flows through organisms and ecosystems. The growth and reproduction of organisms to ensure species survival. Finally, the survival and stability required by living things by maintaining a biological balance at all levels.

### Instructional Philosophy:

The instructional themes will be presented in a way that students will realize the importance of biology in future courses as well as in everyday life. Students are expected to be engaged in course work as well as discussions. Formative assessments will be imbedded throughout each unit to check on student knowledge and to adjust (when needed) instruction to better assist students and their needs. Assessments (Summative) will be administered after content/chapters/standards are mastered by students. This will be achieved through individual and group activities including labs.

### Major Course Goals:

Major course goals are the Georgia Standards (GSEs) that will give a student the ability to use reasoning and thinking skills to learn and understand the standards/objectives for each 9 weeks in Biology as well as other curriculum objectives. Mastering standards/objectives will not only prepare students for the EOC but also in life and the work place.

### Major Course Projects & Instructional Activities:

The main portion of student work shall be exhibited through individual notebooks, tests, quizzes, labs, and major projects like reports/essays (written and oral). These assessments shall be gauged at various levels (challenges) according to student ability! Not only will these assessments reflect knowledge of the standards and elements, but also how it applies to the real world.

**Course Assessment Plan:**

	<u>Categories</u>
<u>Tests/Projects</u> -----	<b>40%</b>
<u>Labs</u> -----	<b>20%</b>
<u>Quizzes, CW/Discussion, DIN/TOTD</u> -----	<b>35%</b>
<u>HW/Tutoring</u> -----	<b>5% (Extra help)</b>

- ❖ The EOC @ the end of the year will make up 20% of the final grade!! (Biology)  
*(Students will be given ample time to make up any missing work with in a week of initial assignment/assessment. Any exception will be at the discretion of the teacher!)*

**Grading Policy**

Students will be awarded grades based on the Richmond County Board of Education policy. Grades will be earned on a 9-week system and progress reports will be sent once during each of the nine weeks. All make-up work should be discussed with the teacher on the first day that the student returns to school following any absence and is the **sole responsibility of the student**. Students will be given one week to complete missed assignments due to **excused absences**. **Late work** will result in points being deducted from the grade.

**Classroom Expectations:** The Richmond County Board of Education discipline policy will be strictly followed. The overriding **classroom rule** is: **Respect is the rule. The rule is respect.** Additional rules are as follows: **Bring all books and material to class, come to class on time, do not bring candy, gum, drinks or food into classroom, ALL technology, especially CELL PHONES, will only be used for instructional practices when allowed!!** Each class will establish their own additional rules if needed. The first violation will result in documentation and a warning. The second violation will result in the student being assigned detention and a parent or guardian will be contacted. The third violation will be referred to the administration.

**Supplies and materials needed:** three-pronged binder for notebook w/ dividers, pen or pencil, paper(notebook), textbook (bring to class everyday unless authorized differently), and lab supplies will be supplied by teacher.

**Homework policy and grading scale:** homework will be given approx. 2 nights a week and will be collected at the beginning of class the next day.

**Extra help:** any student can consult the teacher for extra help to master any standard he/she may be having difficulty with!

*\*(Students may come after school for tutoring at a prearranged date between 2:30 and 4:00 pm. (After school))*

**Parents can reach me on my planning period between 9:30 am and 10:10 am, M – F @ (706)868-4030 or at my email address – [zumbrjo@boe.richmond.k12.ga.us](mailto:zumbrjo@boe.richmond.k12.ga.us)**

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**I have read the above class outline/syllabus for biology and understand. If so, please sign and date in the appropriate space.**

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Student's signature

Date

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Parent's signature

Date