

# **Mayerthorpe Jr/Sr High School**

## **Biology 20 Course Outline 2019 - 20**

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### **COURSE DESCRIPTION**

Biology 20 is an academic program that helps students better understand and apply fundamental concepts and skills. The focus is on helping students understand the biology principles behind the natural events they experience and the technology in their daily lives. The program develops in students the attitudes, skills, and knowledge to help them become capable of committing to setting goals, making choices, and acting in ways that will help improve their own lives and life in their communities.

### **COURSE CURRICULUM OUTCOMES**

Upon completion of this course, participants will have/will be able to:

1. an understanding of the big interconnecting ideas and principles that transcend and unify the natural science disciplines.
2. an enhanced understanding of the scientific world view, inquiry, and enterprise.
3. the level of scientific awareness that is essential for all citizens in a scientifically literate society.
4. make informed decisions about studies and careers in sciences.

### **COURSE TOPICS/UNITS**

### **DATES**

<b>1.</b>	<b>The Biosphere and Matter and Energy Exchange in the Ecosystem and Photosynthesis/Cellular Respiration</b> <ul style="list-style-type: none"><li>• Students will explain the constant flow of energy through the biosphere and ecosystems.</li><li>• Students will explain the cycling of matter through the biosphere.</li><li>• Students will explain the balance of energy and matter exchange in the biosphere, as an open system, and explain how this maintains</li></ul>	<b>6 weeks</b> <ul style="list-style-type: none"><li>• unit exam</li><li>• topic quizzes</li><li>• projects/labs</li><li>• other formative assessment as required</li></ul>
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	<p>equilibrium.</p> <ul style="list-style-type: none"> <li>Students will relate photosynthesis to storage of energy in organic compounds.</li> <li>Students will explain the role of cellular respiration in releasing potential energy from organic compounds.</li> </ul>	
<b>2.</b>	<p>Cellular Matter and Energy Flows</p> <ul style="list-style-type: none"> <li>Students will explain the constant flow of energy through the biosphere and ecosystems.</li> <li>Students will explain the cycling of matter through the biosphere.</li> <li>Students will explain the balance of energy and matter exchange in the biosphere, as an open system, and explain how this maintains equilibrium.</li> </ul>	<p><b>3 weeks</b></p> <ul style="list-style-type: none"> <li>unit exam</li> <li>topic quizzes</li> <li>projects/labs</li> <li>other formative assessment as required</li> </ul>
<b>3.</b>	<p>Matter and Exchange by the Human Organism</p> <ul style="list-style-type: none"> <li>Students will explain how the human digestive and respiratory systems exchange energy and matter with the environment.</li> <li>Students will explain the role of the circulatory and defence systems in maintaining an internal equilibrium.</li> <li>Students will explain the role of the excretory system in maintaining an internal equilibrium in humans through the exchange of energy and matter with the environment.</li> <li>Students will explain the role of the motor system in the function of other body systems.</li> </ul>	<p><b>9 weeks</b></p> <ul style="list-style-type: none"> <li>unit exam</li> <li>topic quizzes</li> <li>projects/labs</li> <li>other formative assessment as required</li> </ul>

**RESOURCES/TEXTS/SUPPLIES:** Nelson Biology 20 – 30

**FEES:** none

**PREREQUISITES:** 65% or above in Science 10 recommended

## **COURSE EVALUATION**

### **STUDENT ASSESSMENT:**

**Assessment for Learning (Formative Assessment)** is a systematic process of collecting information or evidence about student learning and is not assigned a grade/mark for the report card. **Assessment of Learning (Summative Assessment)** is the judgment we make about the assessments of student learning based on established

criteria and a mark/grade is recorded for the report card. The purpose of assessment is to improve student learning. This means that judgments of student performance must be criterion-referenced so that descriptive feedback can be given that includes clearly expressed next steps for improvement. Tools of varying complexity are used by the teacher to facilitate this. For the more complex evaluations, the criteria are incorporated into a rubric where levels of performance for each criterion are stated in language that can be understood by students. Where possible, students will be engaged in their own assessment through self reflection and the construction of rubrics

Assessment is embedded within the instructional process throughout each unit rather than being an isolated event at the end. Often, the learning and assessment tasks are the same, with formative assessment provided throughout the unit. In every case, the desired demonstration of learning is articulated clearly and the learning activity is planned to make that demonstration possible. This process of beginning with the end in mind helps to keep focus on the expectations of the course curriculum outcomes. The evaluations are expressed as a percentage/mark/grade based upon levels of achievement.

### **The Final Grade:**

The evaluation for this course is based on the student's achievement of curriculum expectations and the demonstrated skills required for effective learning.

The percentage grade represents the quality of the student's overall achievement of the expectations for the course and reflects the corresponding level of achievement.

Credit is granted and recorded for this course if the student's grade is 50% or higher. The final grade for this course will be determined as follows:

- 80% of the grade will be based upon evaluations conducted throughout the course.
  - Assignments and labs – 10%
  - Quizzes – 20%
  - Unit tests – 50%
- 20% of the grade will be based on a final examination administered at the end of the course. This exam will be based on an evaluation of all units of the course.

## **GRADE DETERMINATION:**

### **Term grade determination:**

Grade will be based upon evaluations conducted throughout the course. This portion of the grade will reflect the student's most consistent level of achievement throughout the course, although special consideration will be given to more recent evidence of achievement.

### **Final grade determination:**

Grade will be based on the accumulation of term grade evidence and a final examination administered at the end of the course (this exam will be based on an evaluation of all units of the course). This grade will reflect the student's most consistent level of achievement throughout the course, although special consideration will be given to more recent evidence of achievement.

## **OPPORTUNITIES TO DEMONSTRATE LEARNING:**

When the teacher's professional judgment indicates the student is in a position to demonstrate learning on a summative assessment with greater success than the initial attempt, such an alternative or additional summative assessment will be provided at a time agreed upon by the student and the teacher.

### **Classroom Expectations:**

- Be on time for every Biology 20 class.
- Be prepared for every Biology 20 class.
- Complete all assignments and readings
- Set a goal, for example my goal is for every student to achieve 70% or better.
- Respect your space. Keep the room clean.
- Adhere to Mayerthorpe High School Code of Conduct.
- No cell phones allowed in the classroom.

Therefore:

- You are responsible for getting all notes and assignments missed due to absence.
- You are responsible for your achievement. Help is available outside class time when permitted.
- All summative assessments must be written.
- Attendance policy is in effect – see student handbook.

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Please email me at [jason.bidniak@ngps.ca](mailto:jason.bidniak@ngps.ca) if you have questions or concerns.