**Biology**

**Instructor:** Mrs. Audrey Holland

Pleasant Valley High School, Room 142

**Email:** hollandaudrey@pleasval.org

**Office Phone:** 563-332-5151 (ext5142)

Virtual Office Hours: TBD

**Preferred Method of Communication:** Email - I will respond within 24 hours

# **Course Description, Course Prerequisites and Learning Objectives**

This full-year college-preparatory course is designed to give the student a basic understanding of living organisms. The areas of basic life processes, chemistry of life, cell biology, genetics and evolution will be covered, along with an introduction to the microscope and laboratory techniques.

# **Expectations**

* Participation (Both online and in class)
* Responsibilities (Both online and in class)
	+ Individual
	+ Group
* Discussion Boards (Both online and in class)

## **Time Commitment**

In-class 45 minute class periods every day **plus** daily HW when enrolled in 6 courses (total time per week = 28hrs for 7th grade to 32.5 hrs for 12th grade)

* + - 70 minutes for 7th grade
		- 80 minutes for 8th grade
		- 90 minutes for 9th grade
		- 100 minutes for 10th grade
		- 110 minute for 11th grade
		- 120 minutes for 12th grade

Online 45 minute class periods every day that **includes** daily HW

\*\*avg total time per week = 22.5hrs

In-class: 4 hrs 40 mins for JH and 5 hrs 25 mins for HS per week (min to max)

Online: 3 hours, 45 mins per week

# **Student Learning Outcomes**

|  |  |
| --- | --- |
| **Student Skill (Bloom’s Taxonomy)** | **Depth of Knowledge** |
| Remember | Level 1: Recall, observe & recognize facts, principals, properties Identify parts of models/processes, read measurementsLevel 2: Make number conversions |
| Understand | Level 1: Select an appropriate word for an intended meaning, represent relationships with words/pictures/symbols, give examples, identify a hypothesis, make observations, locate missing parts on a model Level 2: Explain steps in a procedure, summarize results, explain using models, make next-step inferences/predictions, explain cause/effect relationships, recognize conceptsLevel 3: Connect & explain ideas using supportive evidence, explain phenomena using scientific languageLevel 4: Relate science concepts to quantitative data, apply scientific ideas/results to a new problem (from a previous investigation) |
| Apply | Level 1: Follow simple procedures, measure, convert, calculate, use formulas when necessary, use tools to collect dataLevel 2: Select an appropriate procedure (teacher lead), connect data from various sources, construct and use models to explain ideas, translate information between data/tables/graphsLevel 3: Design and conduct an investigation (student lead) to solve a problem or answer a question, explain using planning, reasoning and evidence Level 4: Select/devise the best approach to solve a problem, revise experimental design, conduct an open-inquiry investigation |
| Analyze | Level 1: Retrieve information/data from a table/graph to answer a question, identify patterns/trends in table/graphLevel 2: Categorize/classify observations/data, organize observations/data, compare/contrast observations/data, select an appropriate way to display observations/data, extend patterns of observations/data, connect data to the claim, use data/observations to solve a problemLevel 3: Compare information within/across data sets, analyze & draw conclusions citing evidence, generalize a pattern, interpret data, analyze similarities/differences between procedures & solutions, generalize patternsLevel 4: Analyze multiple sources of evidence, analyze complex/abstract themes, gather/analyze/evaluate information |
| Evaluate | Level 2: Evaluate a simple hypothesis, evaluate information to construct a conclusion, draw conclusions from data, evaluate complex/abstract explanations, connect data to claimLevel 3: Develop an argument citing evidence, evaluate information from multiple sources, identify the best hypothesis/data/conclusion, verify reasonableness of resultsLevel 4: Gather/analyze/evaluate information to draw conclusions, apply an argument/justification for methods/solutions, apply solutions to a new situation |
| Create | Level 1: Brainstorm ideas/concepts/perspectives for a topicLevel 2: Generate hypothesis based on prior knowledge/experiences, create an original modelLevel 3: Generate a hypothesis for an original problem, design an independent investigation, develop an original model for a complex scenarioLevel 4: Synthesize information cross multiple text/data sets, design a practical model to solve a complex/abstract situation |

# **Required Materials and Organization**

**Class Materials Needed:** 3 Ring Binder (½ or 1 inch), loose-leaf paper, pens/pencils, Chromebook

**Textbook Used:** Miller & Levin “Biology” (Pearson, 2019)

**Online Textbook:** [Biology Textbook Online Link](https://sso.rumba.pk12ls.com/sso/login?additionalAttributes=Domains&k12int=true&profile=eb&service=https://cat.easybridge.pk12ls.com/ca/dashboard.htm&additionalAttributes=Domains&k12int=true&profile=eb)

* + Username: pv(last name)(first name)
	+ Passwords: (last initial)( first initial) student number

[**Develop Organizational Checks**](https://docs.google.com/document/d/1G-eF3X8oWthGSvWnkK8gDMM4oKdDH9P1hGUFDpEwCA4/edit)

Practices, projects, investigations, tests, and anything relevant that is assigned will have a reminder set in Google Calendar.

Information also on my website: [Mrs. Holland’s Science Website Link](http://hollandscience.weebly.com/)

# **Technology Information and Requirements**

## **Technology Requirements**

Chromebook and internet connection

## **Technical Support**

PVJH and PVHS - begin with the instructor (onsite and online)

PVJH and PVHS - Kevin Pennekamp (online)**A**

## **Course Assignments**

Here should be a listing of required assignments for the grade.

* Assessments / Tests at the end of each unit - roughly 40 points each
* Graded homework assignments
* Several projects throughout the year
* Investigations / Labs in each unit

## **Summary Description of Course Assignments**

* Practices
* Assignments - to show skill and knowledge of information
* Investigations/Labs - to show skill and application of information
* Projects
* Formative Assessments - to show progress of learning
* Assessments/Tests - one at the end of each unit

**Submission of Assignments**

Practices, assignments, investigations/labs, projects will be handed in using Google classroom. Student work for each unit can be handed in until the day that the unit summative assessment (test) is taken.

**Access and Use of Rubrics**

Students will have access to rubrics on Google Classroom or paper copy when applicable.

**Course Grading**

List your specific grading scales, category percentages, semester test, etc. **Course PLCs are required to have the same listings**.

**Final Course Grade Determination**

PV General Grading Scale

92 = A

90 = A-

87 = B+

83 = B

80 = B-

77 = C+

73 = C

70 = C-

67 = D+

63 = D

60 = D-

Below = F

# **Resources**

1. Website:[www.hollandscience.weebly.com](http://www.hollandscience.weebly.com)
2. Quizlet:[**www.quizlet.com**](http://www.quizlet.com) **“**hollandscience”
3. Textbook: [Biology (Pearson 2019)](https://sso.rumba.pk12ls.com/sso/login?additionalAttributes=Domains&k12int=true&profile=eb&service=https://cat.easybridge.pk12ls.com/ca/dashboard.htm&additionalAttributes=Domains&k12int=true&profile=eb)
	* Username: pv(last name)(first name)
	* Passwords: (last initial)( first initial) student number
4. Before School: 7:30am every morning.
5. 8th Period: Please utilize this time to seek additional help if you need it.
6. REMIND 101: Classroom reminders may occasionally be sent via text message.
	* To receive these text message reminders, simply text the message **@biorockspv** to **(81010)**.
	* You may choose to opt out at any time by texting **unsubscribe @biorockspv**to the number above.
7. Synchronous Learning Sessions: Announced in Advance Weekly

# **Tentative Course Schedule**

A linear listing of topics, assignment due dates, and examination dates. TBD

|  |  |
| --- | --- |
| Unit | Topics Covered |
| Investigative Processes | spontaneous generation, characteristics of life, scientists |
| Biochemistry  | CHNOPS, atoms, water, pH |
| Macromolecules & Enzymes  | carbs, proteins, lipids, nucleic acids, enzymes |
| Cells | organelles & functions, cell membrane & transport, feedback loops |
| DNA Replication, Mitosis & Meiosis  | Copying DNA, copying identical body cells, making different reproduction cells |
| SEMESTER EXAM | Investigative Processes, Biochemistry, Macromolecules and Enzymes, Cells, and DNA Replication, Mitosis, and Meiosis.  |
| Genetics | Mendel, Punnett Squares, patterns of inheritance |
| Heredity  | pedigrees, polygenic inheritance, x-linked, dihybrid crosses |
| Protein Synthesis | protein synthesis process, karyotypes, mutations |
| Biotechnology  | selective breeding, cloning, GMO, DNA fingerprinting, gene editing |
| Evolution | Darwin, lines of evidence, natural selection, survival of the fittest |
| Ecology | food webs, trophic levels, matter & energy transfer, abiotic cycles, cellular respiration, photosynthesis, populations, behaviors |
| SEMESTER EXAM | Genetics, Heredity, Protein Synthesis, Biotechnology, Evolution, and Ecology. |

# **Attendance Policy**

Reference Parent/Student Handbook

[PVJH](https://docs.google.com/document/d/1IUzSnx-ZWwU1h6HFZXdm0RLBVE8u4N9bG1d59h4sHAw/edit) page 11

[PVHS](https://docs.google.com/document/d/1BsIB9-rlzu_Ci-mBDZaYTDh5L5Z-IPR1HkSHhMTG0Jw/edit) page 10

How will students make up work? Synchronous lessons/discussions should be recorded and posted in the classroom so students can watch and refer back to on their own time.

# **Classroom Behavior Policies**

1. Class time is academic time, hallway passing time is cell phone time
	1. Place cell phones in your pocket or bag.
	2. Phones should not be used during class time without permission.
2. Chromebooks - the instructor will verbally tell students when it is time to get laptops out and use them for class. Please keep laptops put away until that time.
3. Respect & Responsibility
	1. Treat others how they should be treated - be mindful of ourselves and others.
	2. Self-Responsibility - when mistakes are made, we will talk through them and solve any issues that we can.

\*\*Any issues that are not able to be resolved in the classroom will be directed to administration in the office for further discussion

# **Plagiarism/Cheating Policy**

Reference Parent/Student Handbook

[PVJH](https://docs.google.com/document/d/1IUzSnx-ZWwU1h6HFZXdm0RLBVE8u4N9bG1d59h4sHAw/edit) page 17

[PVHS](https://docs.google.com/document/d/1BsIB9-rlzu_Ci-mBDZaYTDh5L5Z-IPR1HkSHhMTG0Jw/edit)page 21

# **Other Information**

Website Frequently Used:

* Explorelearning.com (Gizmo)
* Phet.com
* Learn.genetics.utah.com
* Flipgrid.com
* Quizlet.com
* Kahoot.it