

Blue Valley High School

Honors Biology Requirements

THE NATURE OF HONORS

Completing all of the regular course requirements at the 90% level or higher is not honors work. That is “A” work. All students can receive an “A” for accomplishing this. Certainly this is commendable but it is not honors work. **To qualify for the designation, “honors”, a student must distinguish himself/herself from the other students.** Honors students set themselves apart by their exceptional vigor, quality and quantity of work, and constant striving for excellence. Students in Honors don’t just, “get by”, they exhibit a genuine excitement about learning. It is hoped that honors students may view science as a vocation or an avocation, as opposed to merely fulfilling a graduation requirement.

There are three major areas of emphasis that are essential to developing a strong background in biology:

- Keeping current
- Research in the field
- Sharing of knowledge and experiences

As a student in honors biology, you will develop skills and abilities in each of these areas. The ultimate goal of this honors biology course is to encourage you to view science as a potential vocation and not just a requirement for graduation.

Additional Honors Requirements: 20% of Semester Grade (200 points per semester)

These Requirements fall into 2 categories: “Honors Work” and “Research Project”

Honor’s Work Options: 100 points per semester (50 points per option).

- 2 of the following options must be completed per semester.
 - An option **can not** be used twice in the same semester.
1. Keeping Current
 - Science Journal Article Reviews- must be completed Fall Semester
 - Career Exploration
 2. Research in the Field
 - Community Service
 - Environmental Club Participation
 3. Sharing of Knowledge and Experiences
 - Teach a Lesson
 - Pamphlet or Website Creation
 - Book Report
 - Presentation of Research- Spring Semester option only
 - Utilize a Mentor for your Research Project- Spring Semester option only

Research Project: 100 points per semester.

- Fall Semester = Students will prepare a research proposal.
- Spring Semester = Students will write a research paper outlining the research they conducted and their findings.

For more specifics regarding all of these requirements, see the descriptions and rubrics contained in this packet.

Fall Semester

DUE DATES

Research Topic (requires parent signature)	_____
Honors Work #1*	_____
Honors Work #2*	_____
Research Proposal (rough draft)	_____
Research Proposal (FINAL draft)	_____

* You must choose “SCIENCE JOURNAL ARTICLE REVIEW” for ONE of the Fall Semester Honors Work options!

Spring Semester

Honors Work #3	_____
Honors Work #4	_____
Final Research Paper (FINAL draft)	_____

These are considered “long term” projects. This means that they must be turned in **ON OR BEFORE the due date in order to receive full credit... regardless of an absence on or before the due date.

HONORS WORK SPECIFICS

Science Journal Article Review

Articles should come from science journals that use peer review in their selection process. Some examples of peer-reviewed journals include: Scientific American, Discover, Bioscience, The Quarterly Review of Biology, Journal of the American Medical Association (JAMA), etc. Blue Valley has a good selection of periodicals; the Linda Hall Library at UMKC and the Archie R. Dykes Library at the KU Medical Center also have excellent collections. The report must contain summary and the critique of the science contained in the article as well as a personal reaction to the article. **This is worth 25 points per article up to a maximum of 50 points for the semester. IF YOU WANT TO RECEIVE FULL CREDIT YOU MUST DO 2 JOURNAL ARTICLE REVIEW.**

The selected articles must be no less than 5 pages in length and have been published AFTER 2006. All articles must be pre-approved by the teacher, as students MAY NOT USE the same article as another student in the class.

Career Exploration

For this project, students should identify a person in the community who is engaged in a science or science-related field. Examples of professions include geneticists, botanists, animal specialists at the zoo, researchers, lab specialists, and medical doctors. The only stipulation is that the chosen person CANNOT live in the same house as you. Contact the person and make an appointment for an interview, schedule a job shadow, or have the person make a presentation to our class. You should use the “Career Interview Sheet” provided by the instructor as guide to this experience. Following the experience, you will write a 2-3 page summary, which includes a personal reaction and a letter of confirmation from the professional being interviewed, shadowed, etc. The confirmation letter is 20% of the grade for this assignment, so DO NOT forget to obtain this! A parent signature CANNOT be used in place of the professional.

Community Service

Honors biology students are required to actively participate in a community service project that is related to the biological sciences to complete this option. This can include environmental or health volunteering as well. Students must devote a **MINIMUM OF 4 HOURS** to community service. A summary of the experience, including a personal reaction, should be turned in on the due date. This summary must be at least 1 double-spaced page in length and no more than 2 pages in length. **A written verification (including dates and activities) from the sponsor is required and must be attached to the written report! A parent signature CANNOT take place of a sponsor signature!**

Places to volunteer:

- Carolyn Ball Blair Wilderness Science Center (<http://wsc.bluevalleyk12.org/volunteer.cfm>)
- Overland Park Arboretum
(<http://www.opkansas.org/Things-to-See-And-Do/Arboretum-Volunteer-Opportunities>)
- Overland Park Recycling Center
(<http://www.opkansas.org/Resident-Resources/Drop-Off-Recycling-Center>)
- Deanna Rose Children's Farmstead
(<http://www.opkansas.org/Things-to-See-And-Do/Farmstead-Volunteer-Opportunities>)
- Hospitals/Healthcare clinics
- Veterinarian clinics/animal shelters

Environmental Club Participation

Join the Environmental club. You can receive 5 points per hour of participation in the club up to maximum of 50 points per semester. The sponsor of the club (adult) must verify these hours and sign off on them.

Teach a Lesson

Construct and implement one learning activity for a class topic that will be done by the entire class. This may be done in pairs. Prior approval and scheduling of the activity must be coordinated with the teacher.

The activity must:

- Aid in learning the scheduled class topic
- Involve everyone actively
- Effectively utilize the time contracted for with the teacher
- Demonstrate that time and effort was spent planning. To ensure this, the lesson must be reviewed with the teacher at least three days before it is scheduled.
- Involve the honors biology students in studying the class topic. The activity must end with a review of the topic involved in the activity. The honors biology students should expect to answer questions about the topic.
- This activity can be worth up to 50 points

Create a Biological Website

You may create a web site that contains biological data. You will need to demonstrate the site for the class. You will earn a maximum of 50 points per semester.

Create a Pamphlet or 10-15 Minute Infomercial

Share this with the class. The topic should be arranged with the teacher, i.e.- AIDS, Biotechnology, STD's, etc. This activity may be done for up to 50 points as approved by your teacher.

Book Report

One book report may be done each semester. The report may be written or an oral presentation may be made to the class or both. The book must relate to biology and must qualify as non-fiction. The teacher must approve the book. The report must contain a summary and critique of the science contained in the book as well as a personal reaction to the authors ideas and style of writing. A recommendation on whether or not to read the book will be required. *This may be done for up to 50 points as approved by the teacher.*

Presentation of Research- 2nd Semester option only

At the end of the year, students will have the option to present their research topic and findings to the class. The presentation must be 3-4 minutes long and should include the problem statement, hypothesis, a description of the procedure, data, and the conclusion. A VISUAL AID IS REQUIRED. At the end of the presentation, classmates are encouraged to ask questions regarding research design, results, etc. Grading will focus on organization, responsiveness to questioning, and speaking skills.

Utilize a Mentor for your Research Project

You may enlist the help of a mentor who has experience in the field in which you are conducting your research. You will be required to meet with the mentor regularly to discuss your research. The mentor should act as a guide in developing the procedures for your research, reviewing your progress, assisting in data analysis of your findings, and helping proof the formal report. This partnership will be time intensive for both yourself and your mentor. You will need to partner with your mentor 1st semester, but since the partnership will not be complete until 2nd semester, this option can only be used for points in the spring.

Make sure you and your mentor read the letter entitled “Mentoring an Honors Biology Student” so you both understand the expectations.

Other Approved Activity

You may complete any other appropriate activity which receives the approval of your teacher.

You must discuss the option (including the requirements and how it will be assessed) with your teacher at least 2 weeks prior to the due date.

This activity may be done for up to 50 points as approved by your teacher.

The Research Project information is detailed in an additional packet.

Name: _____ Period: _____

Science Journal Article Review

Each Journal Article Review is worth 25 points. To earn the 50 points for the assignment, you must complete 2 Article Reviews!

Appropriate Format (3 pts)

- _____ Double-spaced
- _____ 12 pt. font
- _____ Logically organized and easy to read
- _____ 2-3 TYPED pages in length
- _____ A copy of the article is attached

Grammar (2 pts)

- _____ Correct spelling (1/2 pt deduction per mistake)
- _____ Proper grammar usage (1/2 pt deduction per mistake)

Content

- _____ Appropriate article selection **(5 pts)**
 - At least 5 pages in length
 - Pertains to biology
 - Article selected is current (2006 to present)
- _____ Summary of article, including: **(5 pts)**
 - What organism/idea/procedure was the topic or focus of the research?
 - Why is this research important?
 - How did the scientists conduct the research? What were the variables?
 - What were the results of the research?
 - What conclusion did the scientists reach after they were finished conducting their research?
- _____ Your *critique* of the article **(5 pts)**
 - Were the people well-trained to conduct the research?
 - Did they appear to have sufficient background knowledge?
 - Was the article clear and easy to understand?
- _____ Your *personal reaction* to the research **(5 pts)**
 - What new ideas/concepts did you learn?
 - What surprised you about the results?
 - How do the results of the research affect your everyday life?

Comments:

Point Total: _____ / 25

Name: _____ Period: _____

Career Exploration

Appropriate Format (8 pts)

- _____ Double-spaced
- _____ 12 pt. font
- _____ Logically organized and easy to read
- _____ 2-3 pages in length
- _____ Copy of interview questions included

Grammar (2 pts)

- _____ Correct spelling (1/2 pt deduction per mistake)
- _____ Proper grammar usage (1/2 pt deduction per mistake)

Content

- _____ Appropriate professional selected **(5 pts)**
 - Works in the field of science
 - Does not live in the same household as you
- _____ Summary of the experience **(15 pts)**
 - What is a typical day like at this person's job?
 - Is this job in demand right now? Why or why not?
 - What type of training does a person need to do this kind of job?
 - What biology/science concepts does this person use on a daily basis?
- _____ Personal reaction to the experience **(5 pts)**
 - What was the most interesting part of this experience?
 - What did you learn during this experience that was unexpected or surprised you?
 - Is this a profession you would consider going into? Why or why not?
- _____ *Confirmation signature from professional (15 pts)*

Comments:

Point Total: _____ / 50

Career Exploration Interview

1. Why did you choose your career?
2. Which science courses did you need in high school and college to adequately prepare you for this profession?
3. Which non-science courses helped you prepare for this profession?
4. What is the most difficult or challenging part of your job?
5. What ideals that you originally held about your profession have turned out to be different from the reality you now know?
6. What original ideals turned out to be true?
7. Are there any aspects of this job that could lead you to change careers in the future?
8. What is the average earning potential for this profession?
9. What type of time commitment does your job require?
10. How much autonomy do you have in your profession?
11. Describe a typical day on the job.
12. If you could change anything about your job, what would it be?
13. What is the value of your profession to our society?
14. What types of “continuing education” do you have to do to maintain your license or continue in this profession?
15. What types of personality traits compliment this profession?
16. What personality types could have difficulty with this profession?
17. IS your job in demand in today’s society? Will it be in demand in the future?
18. Which science concepts do you use on a daily basis?
19. What constraints does your profession place on your personal/family life?
20. Is gender, ethnicity, and racial equity problem in your profession?
21. If I were interested in following your professional footsteps, what advice would you give me?

***You must create at least 4 additional questions for the interview. ***

*****Remember, you MUST obtain a letter of confirmation signed by the professional you interviewed in order to receive full credit! *****

Name: _____ Period: _____

Community Service Project

Service Project: _____

Appropriate Format (5 pts)

- _____ Double-spaced
- _____ 12 pt. font
- _____ One inch margins
- _____ Logically organized and easy to read
- _____ 1-2 TYPED pages in length

Grammar (2 pts)

- _____ Correct spelling (1/2 pt deduction per mistake)
- _____ Proper grammar usage (1/2 pt deduction per mistake)

Content

- _____ Appropriate activity selected **(3 pts)**
 - Must be related to biology
 - Must be focused on improving the local community
 - Must not earn any form of monetary compensation for activity

_____ Minimum amount of time spent (4 hrs) **(5 pts)**

- _____ Summary of the experience **(10 pts)**
 - Where did you go?
 - What did you do? (Be specific!)
 - How did your work improve the community?

- _____ Personal reaction to the experience **(10 pts)**
 - Would you volunteer at this organization? Why or why not?
 - Would you recommend this organization to another person as a volunteering experience? Why or why not?

_____ **Confirmation signature from sponsor (15 pts)**

**If you organize your own project, you must get a parental signature AND take pictures documenting the project*

Comments:

Point Total: _____ / 50

TEACH A LESSON GRADE SHEET

Lesson Title: _____

Date of Lesson: _____

“TEACHERS” _____

The following items need to be typed (Double Spaced, 12 point font) and returned with this grade sheet.

5 points

- Objective of the Lesson):
- Materials Needed to Teach the Lesson:
- Time Needed for the Lesson:

5 Points

- Preview Date for the Instructor : _____ (Initialed by teacher) _____

10 points

- Notes to be used for Classroom Instruction (copied and attached to this paper

5 points

- Describe the Activity the class will be a participant in

15 Points

- Present the Lesson: Teacher Notes- _____

5 Points

- Reflection on how well you taught the topic. If you were to make any changes to your lesson what would they be?

If working with a partner, each person must write THEIR OWN REFLECTION.

Due 2 class periods after you present your lesson

Biological Website Grade Sheet

Web Address (5 points): _____
WRITE LEGIBLY

Requirements: (15 points) Colorful, Creative, Easy to Search Within:

- The final product should be appealing and PROFESSIONAL in appearance and operation.

Useful Data for Biology Students: 15 Points

- SOURCES MUST BE CITED.
- At least 3 Sources Required.
- 2 Sources must be NONWEB BASED (Journal articles etc.)

Includes Other useful sites for studying Biology content- MINIMUM of 7 (15 points)

- This should NOT be simply a list of other sites.
- Indicate what information can be found on each site. Why is it useful?

ENVIRONMENTAL OR PUBLIC HEALTH ISSUE: Infomercial or Pamphlet (50 points)

You are working for the EPA (Environmental Protection Agency) or the Johnson County Health Department and have been asked to produce a pamphlet or infomercial on an environmental issue or on a public health issue. In the pamphlet/infomercial you are to include the following information:

- Background/Historical Information on the topic.
- Detailed problem description of the issue.
- Present Legislation on this issue (laws in effect or proposed)
- What needs to be done to solve this issue or keep it from happening?
- What are some of the ways citizens can help in regard to this issue?

If choosing the pamphlet option:
It must be done colorfully and creatively, with correct spelling and grammar.
It needs to be typed with a font no greater than 12 point.

If choosing the infomercial: It needs to be appropriate and also captivating to your audience.

3 reference sites must accompany this pamphlet/infomercial.
AT LEAST 2 MUST BE NONWEB BASED (Journal Articles, etc)

All topics must be cleared with your teacher 1st!

Suggestions below are some possible options, you may do something not on this list as well with approval of your teacher).

Suggestions for Environmental Issues:

PCB's	Global Warming	Pollution
Species Extinction	Clean Water	Global Population
Human Rights	Protect National Forest	Responsible Trade
Urban Sprawl	Wilderness Campaign	Clean Air
Factory Farms	Genetic Engineering	Nuclear Waste
Species Protection	Habitat Protection	Marine Protection
Wildlife Protection	Oil Spills	Wetlands
Toxic Waste	Landfills	Mining
Oil Reserves	Corporate Accountability	Other Issues

Suggestions for Public Health Issues:

Hepatitis	Bioterrorism	Strokes
STD's	Alcohol	Diabetes
AIDs	Drug Abuse	Breast Cancer
Asthma	Smoking	Nutrition
Depression	Cancer	Other Issues
Osteoporosis	Heart Disease	

Name: _____

ENVIRONMENTAL OR PUBLIC HEALTH ISSUE

Pamphlet/Infomercial Rubric

Background/Historical Information on the Topic: 5 points

Detailed problem description of the issue: 5 points

Present Legislation on this issue: 5 Points

What needs to be done to solve this issue or keep it from happening? 10 Points

What are some of the ways citizens can help in regards to this issue? 10 points

Quality of Work: Must look professional in nature. 10 points

Pamphlet: Needs to be done colorfully and creatively with correct spelling and grammar.
Needs to be typed with a font no greater than 12.

Infomercial: Should be APPROPRIATE and CAPTIVATING to your audience.

3 References must be cited in the project: 5 points

- AT LEAST 2 MUST BE NONWEB BASED (Journal Articles, etc)

Total points possible: 50 points

_____ points earned

Name: _____ Period: _____

Book Report

Appropriate Format (5 pts)

- _____ Double-spaced
- _____ 12 pt. font
- _____ One inch margins
- _____ Logically organized and easy to read
- _____ 2-3 TYPED pages in length

Grammar (10 pts)

- _____ Correct spelling (1/2 pt deduction per mistake)
- _____ Proper grammar usage (1/2 pt deduction per mistake)

Content (35 pts)

_____ Appropriate book selected (5 pts)

- At least 120 pages in length
- Pertains to Biology

_____ Includes the author, title, year the book was published, and a picture of the book (5 pts)

_____ Summary of book, including: (5 pts)

- What organism/idea/procedure was the topic or focus of the book?
- What main ideas was the author trying to convey to readers?

_____ Your *critique* of the book (5 pts)

- Were the people qualified to write the book?
- Did they appear to have sufficient background knowledge?
- Was the book clear and easy to understand?

_____ Your *personal reaction* to the book (15 pts)

- What new ideas/concepts did you learn?
- What surprised you about the book?
- Give three specific examples of topics/sections in the book that you found interesting (do not simply provide a list – be specific and give details!)

Comments:

Point Total: _____ / 50

Name: _____ Period: _____

Presentation of Research

Appropriate Format (10 pts)

- _____ 4-5 minutes in length
- _____ Speaker makes eye contact with audience (does not simply read information off a slide or poster)
- _____ Speaker's body language does not distract from their presentation

Content (25 pts)

- _____ Statement of problem and hypothesis
- _____ Brief description of background information
- _____ Materials needed
- _____ Description of procedure
- _____ Interpretation of data and results
- _____ Conclusion and ideas for further research

Visual Aid (15 pts)

- _____ Contains at least 3 pictures related to research
- _____ Shows data table and graphs

Comments:

Point Total: _____ / 50