**Roanoke Valley Governor’s School for Science and Technology**

**Environmental Research**

**Syllabus 2023-2024**

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1. **Course Information**
   1. **Course Description**

Environmental Research explores environmental quality issues caused by human activity locally, regionally, and globally. The major themes include air, water, and soil quality, the soil/water interface, biota, biogeochemical cycling, and resource use. Each student conducts an experimental research project. All students will write a scientific paper using VJAS format describing their research projects.

* 1. **Gifted education strategies**

Technology use is integrated throughout the course, including the use of Vernier probes and sensors and Minitab in the laboratory. Collaborative learning, Socratic seminars, lab meetings, and field experiences will enhance the learning environment of this course.

* 1. **Text, Printed Resources, and Media Resources**

Students will read selected research papers relating to the atmosphere, water, and land and correspond with researchers in such areas as environmental engineering, chemistry, biology, and biotechnology. Extensive use of online journal articles, news articles, and case studies are used in this course.

1. **Grading Policy**
   1. **Grading Scale** 100-90% **A** 89-80% **B**

79-70% **C**

69-60% **D**

59-0% **F**

* 1. **Types of Evaluations**
     1. **Homework:** A summer assignment will be given in the spring.Students will be asked to complete short homework assignments during the fall semester focused on the research process, the development of personal research, and labs completed in class.
     2. **Research Process:**
        1. **Class Labs:** Lab experiments will be conducted as a class on two ofthe long elective days in the fall semester. Students will be introduced

to some of the environmental issues being encountered globally through these labs.

* 1. **Pre-Intersession Work on Project:** Development of a research topic,a research plan, experimental design, and completion of ISEF forms will be completed during the fall semester. Students will communicate regularly with their teacher about the details of their project, contact experts outside of RVGS, and begin their lab notebook. Some students will begin experimentation, also.
  2. **Intersession Work on Project:** Grades will be determined based onquality of work, maintaining an updated lab notebook, lab safety, teacher and self-assessment. Rubrics and deadlines will be provided, and all deadlines will be published on the Environmental Research calendar.

1. **Research Paper:** Students will write a paper, following the guidelines ofVJAS. The paper will be edited and rewritten until it meets the standards of a well-written paper. For second semester, the final, edited paper will comprise 50% of the research paper category grade. Failure to upload the final paper to the Canvas site by the school-wide deadline will result in a zero for the assignment and an overall “F” average for the research paper grading category.
2. **Research Presentation:**
   1. **PowerPoint Presentation:** Students will prepare and present aPowerPoint presentation according to the standards established by VJAS. Presentations will be revised based on teacher and peer review.
   2. **Project Forum Day:** All students are expected to be in attendance andon time for all events related to project forum.
   3. **Other Science Fairs and Symposia:** All students in weightedelectives are expected to participate in all science fairs and symposia available to them. Failure to attend a science fair without prior approval from the teacher will result in a grade penalty.
3. **Semester Grade Determination**

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| **1st Semester Grade Determination** | | **2nd Semester Grade Determination** | |
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| Research Paper | 30% | Research Paper | 30% |
| Research Process | 40% | Research Process | 25% |
| Homework | 30% | Research Presentation | 45% |

**d. Final Grade Determination**

The final grade is the average of the 2 semester grades.

1. **Class Policies and Procedures**
   1. **Absences and tardies:** The policy in the RVGS student handbook will be followed.
   2. **Make-up Work:** It is the responsibility of the student to determine missed classwork,homework, and labs during absences. Arrangements should be made immediately upon the return to school to make up any work before or after school.
   3. **Late-work penalty:** Assignments that are turned in late will be reduced 10% for each day the work is late. If you have extenuating circumstances, you must contact the teacher at least one day before the assignment is due to be considered for an extension.
   4. **Cheating:** The procedure in the RVGS student handbook will be followed.
   5. **Technology Policy:** The RCPS Acceptable Use Policy and the RVGS studenthandbook policy will be followed.
   6. **Extra help:** It is important for you to quickly obtain help whenever you are havingdifficulty. To ensure availability, send an email to set an appointment.
   7. **Online Grade Access:** Grades are available at all times through ParentVUE and StudentVUE. When viewing your grades, understand that:
      1. A blank in the grade book means that the assignment has not yet been graded. Teachers will have all assignments graded within 5 school days of the due date (with the exception of very long assignments, which will be graded within 10 school days). You may have a blank because the teacher has not graded the class set or because your assignment was turned in after the due date. Blanks do not count as zeros in your average.
      2. A zero in the grade book means that you have earned a zero on the assignment. Cases in which this might occur include submitting incorrect answers to an assignment or submitting an assignment past the due date.
      3. An excused (EX) in the grade book means that you are excused from the assignment without penalty.
   8. **Interim Reports:** The interim report is a snapshot of the current class average. Please feel free to discuss your report with your instructor.
   9. **Student Performance Strategy:** Interventions will be implemented at the teacher’sdiscretion or if the student's grade falls below an 80.
   10. **SEC Notification:** Per Virginia Code (§ 22.1-16.8), parents must be aware of the use of any instructional materials with explicit content.  No explicit materials are used in this course.