



12th Grade Environmental Science Syllabus

John Santos

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Dear Students, Parents, Relatives and Guardians,

I've been fortunate to call High Tech High my home for over 10 years now. It has been incredible to be part of the meaningful, relevant project based-learning that has gone on at our schools. Exploring the sciences with students is one of my strongest passions and project-based learning is fundamental to my teaching philosophy. In addition to learning from our immediate community of educators, I've had the chance to collaborate and learn from the most progressive, inspirational, inventive educators around the world during my time as an educator. I look forward to collaborative work that lies ahead...

Course Objectives

My first and main objective is to foster intellectual curiosity. I hope to foster an environment where students ask questions, think critically and develop as collaborative learners who approach problems analytically.

Through in-depth projects, students will be encouraged to apply the knowledge learned in the classroom to the outside world, making connections between past and present, school and community, classroom and our outside biological world.

Recommended Supplies

If you need assistance with any of the following supplies, please let me know.

1. A note book for note taking (at least 75 pages)
2. **Several** pens and pencils in an organizer

Classroom Supplies and Equipment

During the course of the year, you will be using various supplies and equipment provided by the school. These will include lab equipment, and laptops, among other things. Please care for any items you use and to use them properly for school related purposes

Resources

www.ted.com www.sciencenews.org www.newscientist.com www.sciencedaily.com

Tentative Course Calendar, Projects and Academic Concepts

The calendar is subject to change. Deadlines may be extended and project dates may be changed, depending on various factors. Also, curriculum and projects may change depending on student interests, for example.

Weekly Schedule: (*Subject to change*)

Week 1-2: (Fly on the Wall project to Begin)

- Characteristics of living organisms (Bringing the invisible world to life lab)
- Genetics (Inheritance and Mutation)

Week 3-4: (Fly on the Wall project Cont'd)

- Speciation
- Niche Fulfillment
- Biodiversity

Week 5-6: (Ecological assessment project to begin)

We will start to look at biological relationships as they exist in ecologies

- Ecological relationships
- Environmental systems/Biomes

Week 7-8: (Ecological assessment project cont'd)

- Plant Anatomy/Plant Ecology

Week 9-10: (Ecological assessment project cont'd)

- Population Ecology

Week 11-12: (Ecological assessment project cont'd)

- Field Biology, Local Ecology, Global Ecology, Conservation ecology
- Environmental Law

Week 13-14: (Ecological assessment project cont'd)

- Biomimicry (Engineering inspired by designs found in nature)

Week 15-16: (Ecological assessment project cont'd)

- Agro-Economy
- GMO's

Week 17-18:

- Exhibition prep and Exhibition
- Finalization of project products, POLs and Exhibition

Note on SAT Subject Tests: This course is not specifically designed to prepare students for the SAT Subject Tests. If you are interested in taking the Biology Subject Test, please talk to me about independent work you would need to complete to be successful on the test, and our honors option, which will aid in preparing for the biology SAT II

Assessment

Grading in a project based environment can be difficult. I work hard to develop authentic, content-filled projects that demonstrate the concepts of our biological world to the students. Constraining evaluation of students to 5 possible categories (A,B,C,D,F) can feel limiting. I do not place emphasis on grades; instead I concentrate on learning and critical thinking. Grades, though, are a necessary evil when considering the application process for colleges. Evaluation of my students is based on much more than quiz or test results. I include areas such project work, demonstration of understanding an presentations when evaluating grades for my students (Detailed rubrics will be provided, and posted on my DP for each project). If you have any questions or concerns in regard to your student's performance or evaluation, please feel free to call or email me at any time.

10% participation
90% projects

Grades

A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=below 60%

(At HTH, both a D and F are not considered passing.)

Behavior Guidelines

Students are expected to come to class (**ON TIME**) each day, with their school supplies, prepared and willing to be an participating contributor to our project work. Behavior and participation are 10% of the overall grade.

Dress code:

-Students must dress according to village wide dress code policy ([see HTH student handbook](#))

Eating and Drinking Policy:

Eating and drinking is allowed as long as it does not become a distraction or threaten damage to lab equipment.

Tardy Policy:

Tardiness has been a growing problem at our school. Students arriving late (or returning late from breaks) often disrupt the rhythm and flow of learning. Late students will be asked to turn in their cell phones (or similar collateral) for the remainder of the day*, to be picked up after school at 3:40pm (excused tardies being an exception). Please let me know if I can be of any help in communicating the importance of attendance to a parent driver in a carpool.

*Students can always be reached by telephoning our front desk and always have access to our school phone.

Conduct:

Students should use appropriate language for their respective professional environment and respect our neighbors, peers, and classmates.

Computer Checkout

The computers should remain in the classroom unless a team-teacher has given permission to take them elsewhere. All computers must be put away and plugged into chargers at the end of each block. See <http://www.hightechhigh.org/tech-support/aup.php> for the HTH computer use policy.

Academic Honesty

Please see the attached *HTH Code of Academic Integrity* for an explanation of plagiarism and the consequences. A breach of this code will be taken seriously and treated as such. We will be reviewing the *Code of Academic Integrity* in class.

Plagiarism is met with very clear consequences at HTH. The first offense the student receives a zero on their assignment and a call home. The second offense the student receives a zero and the parents are called in for a meeting. The third offense would result in a disciplinary review hearing.

Wish List

Parents wishing to further contribute to the Environmental Science class can consult the list below. (Contributions are not **at all** expected or required of parents or their students)

- Latex-free gloves (size Medium and Large. We are ALWAYS in need of gloves)
- Matte photo paper for printing photos (8"x11")
- Microscope slides and slide covers
- Nutrient Rich Agar (powder form 100g)
- Blue painters tape
- Clorox Wipes

Student & Parent Agreement

Learning Contract

Please complete and sign the following document and return it to John for entry into your student file.

For students:

I, _____ (*student*) fully understand the classroom expectations and agree to do my best to follow them in order to create an environment conducive to the learning of others and myself.

Signed,

_____ Date: _____

For parents/guardians:

I, _____ (*parent/guardian*) fully understand the classroom expectations and agree to do my best to support my student in following them. I also agree to communicate with John Santos if I have any questions or concerns.

Signed,

_____ Date: _____

Additional Questions, Comments or Concerns:
