**Course Description**:

***What is it like to be a scientist? What makes me ALIVE? What am I made of? What makes me, me? How does my body work? What keeps me going? What must I do to keep healthy? How do my organs work together to keep me going?***

In this course, you will be asking these and many more questions. We will be making observations, developing and testing hypotheses, and asking even more questions about living organisms, our surroundings and the world beyond.

* Unit 1: What is it like to be a scientist?
* Objectives: How do scientists observe, collect and communicate information? How do scientists accurately measure quantity? The metric system is a way scientists communicate around the world. As such, knowing the importance of prefixes is important in denoting the size and quantity of materials when reporting data. Precision and accuracy are important when measuring liquids and solids. Science experiments must be driven by a question and must include an IV, DV and control. Gathered data can be depicted in various forms and they must learn to select the most appropriate one for their results
  + Major Assessments: Chocolate lab, Saving Fred, Measuring Liquids, Metric Mini Lab
* Unit 2: Living vs Nonliving; Cells
* Objectives: What are we made of?What characteristics does an object need to be considered as living? Nonliving?How important is the structure of a cell? How does the interrelationship between structure and function enable an organism to survive?
  + Major Assessments: Tenebrio exhibition, Onion and cheek lab, Cell Membrane Simulation lab
* Unit 3: Genetics
* Objectives: How does the structure of DNA enable it to do its job?How is the information encoded by DNA expressed? How can we use Punnett Squares to determine the probability of a trait being passed on? How has technology helped in our understanding of DNA?
  + Major Assessments: Strawberry Extraction Lab, Super Hero Genetics, Ethics Debate/position paper
* Unit 4: Nutrition:
* Objectives: Are you what you eat?Has America become a fast food nation?How have cuts in school budgets led to the obesity rates?Why do Americans ignore dietary guidelines despite health repercussions?
  + Major Assessments: Fats vs Carbohydrates lab, Calorie Mini Exhibition, Snack Challenge
* Unit 5: Cardiovascular System
* Objectives: What is the structure and function of the cardiovascular system? How does the heart respond to varying requirements for oxygen? What are diseases/conditions associated with the cardiovascular system? How are the parts of the cardiovascular system interdependent on each other?
  + Major Assessments: Ba Bump, Heart Dissection, Ernie’s Exit, Circulatory System Game
* Unit 6: Nervous System
* Objectives: How does the structure of a neuron help it do its job? How do the parts of the brain work together to help run our body? How does what we do every day affect the brain? How do injuries affect the brain’s function?
  + Major Assessments: How Fast Can You React? Lab, Independent research projects on neurological diseases/disorders
* Unit 7: Experimental Design
* Objectives: What steps must be taken in order to create and conduct a scientific experiment? How can data be collected? What does the data MEAN? How can we use the analysis of the data to suggest future experiments?
  + Major Assessments: 8th Grade PBAT (research project)
* Unit 8: How do I prepare for the State Exam
* Objectives: How do I use prior knowledge to do well on a state exam? How do I use test taking techniques to improve my grade on the science state exam?
  + Major Assessments: NYS 8th Grade Practical Exam, NYS 8th Grade Written Science Exam

**Grading Policy:**

Achievement Grade Components Work Habits Components

Exhibitions 30% Homework 25%

Tests 25% Participation 20%

Labs 20% Binder/Notebook 20%

Quizzes 15% Attendance 20%

Scientific Writing 10 % Punctuality of assignments 15%

**Making up Major Tests, Labs and Exhibitions:**

**Students are given at least a week’s notice before a unit test or quiz is administered. ONLY students that are absent are allowed to make up a test provided that they have a parent’s note or a doctor’s note. Students who receive a failing mark are NOT allowed to retake tests.**

**Exhibitions and Labs can be made up during after school or breakfast study. Exhibitions and Labs will be accepted up to 7 calendar days after the due date during Semester 1; during Semester 2, only 3 days will be given. However, the grade will be adjusted accordingly due to lateness. Exhibitions and Labs can be revised to receive partial credit. Students will have up to 3 days in which to resubmit work that is being revised.**

**Midterm:**

**A midterm will be given in January. It will cover the units from September to January. The midterm will have 100 multiple choice and short answer questions and will be given over a period of 2 days.**

**Roundtables:**

**Students are expected to participate in Roundtables in January and in June.**

**PBAT:**

**All students are required to complete a PBAT in order to pass 8th grade science. The PBAT (Performance Based Assessment Task) is a 6-8 week project where students will have to conduct research to write a 3-4 page paper, create and administer a lab, create a PowerPoint and present their work in front of East Side’s science teachers.**

**State Exams:**

**There are two state exams in 8th grade science. One is given in late May and is comprised of 3 fifteen minute labs and the other is given in early June. The June exam tests the student’s scientific knowledge in a variety of topics. The exam has multiple choice as well as short answers.**