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**Charter School of Philadelphia, Inc.**

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**8th Grade Science**

**2011-2012**

**Mrs. Watson**

**E-mail**: [cwatson@mcscs.org](mailto:cwatson@mcscs.org)

**Class website**: <http://websites.pdesas.org/cwatson2/>

**Small Group: EVERY** Wednesday and Friday, Room 212 (unless otherwise noted)

**Objective**

In this school year’s Science class, students will be exposed to and gain knowledge of a myriad of topics ranging from the components of an experiment to atoms to fossil fuels to force and motion. The curriculum for the year follows the Pennsylvania state standards for eligible content in 8th grade science. These are the standards and content used for creating the PSSA Science Test, which students will also be taking this school year. Instructional practices will include methods that will encourage students to think critically and analytically while preparing them for the questions they will encounter on the PSSA Test. The activities in the curriculum will include projects, mini projects, field trips, hands-on experiments, and lab reports.

**Curriculum**

The curriculum given in this syllabus is the basic content for the school year. Specific dates and timelines for each concept are not given because coverage of material will vary from class to class and also depends on students’ mastery of concepts. In other words, we don’t move on to the next topic until the current topic is mastered at an 80% level of mastery. Small group sessions, tutoring after school, and tutoring during prep periods is provided to give students as much opportunity as possible to get assistance with assignments and concepts.

UNIT 1: The Nature of Science

A. Scientific Investigations

B. Laboratory Tools & Safety

C. Experimental Design

D. Collecting Data

E. Analyze, Interpret & Communicate Data

F. Systems and Patterns

G. Models & Technological Design

H. Science & Society

UNIT 2: Physical Science

A. Physical & Chemical Properties

B. Elements, Compounds & Mixtures

C. Chemical Reactions

D. Forms of Energy

E. Energy Transformations

F. Heat Transfer

G. Force & Motion

H. Work, Simple Machines & Mechanical Advantage

UNIT 3: Earth & Environmental Sciences

A. The Dynamic Earth

B. Rocks, Fossils, and the Geologic Timescale

C. Landforms & Geological Processes

D. Soil

E. Energy Resources

F. Waste

G. Human Environmental Impact

H. The Water Cycle

I. Earth’s Water Systems

J. Weather and Climate

K. Ecosystems & Biomes

UNIT 4: Space Science

A. The Solar System

B. The The Universe

C. The Earth, Sun, and Moon

UNIT 5: Introduction to Chemistry

A. History of the Atom

B. Atomic Structure and Parts

C. The Periodic Table

D. Isotopes

E. Acids and Bases

**Classroom Expectations & Procedures**

Our class will follow the expectations put in place by the MCSCS which are posted in the front of each classroom. Students are expected to be on time for school and class (If late, have a pass) and be in complete uniform at all times. During class, we follow the rule of one voice at a time, side conversations between students, random comments and outbursts are not permitted. Students must follow all classroom procedures at all times to ensure orderliness and safety. This promotes an environment most conducive to learning and no student has the right to interrupt another student from learning. If a minor discipline issue occurs, I will speak to the student about it and this is considered a warning.  If a second discipline issue occurs, parents may receive a phone call and/or may be sent out of the class depending on the severity of disruption. The consequence for further disciplinary measures will be a referral to Mrs. Joyner and a request for a parent conference.  Severe behavior problems will result in immediate removal from class and parent contact.

**Class Materials**

For this science class students will need:

* A **notebook/s**: This can be in the form of a composition book, spiral bound, or three-ring binder with dividers. If you are using composition or spiral notebooks, you will need 2 for the year.
* A **folder**
* **Loose leaf paper**: For assignments that must be written and handed in
* Goggles: Class goggles are supplied but are shared amongst all class, students may purchase their own if they wish from the Dollar store, Home Depot, etc. Storage will not be provided.
* **Pens** and/or **Pencils**

**Homework**

Homework will be given almost every night of the week, which should not take more than a half hour to complete. It serves to reinforce what was learned that day. There are two types of homework

* Effort & Completion: This is graded based on how well a student tried to do the assignment and how much was actually completed. This type of homework is usually given after a concept has been introduced.
* Accuracy: This is graded based on how much of the assignment was answered correctly. This type of assignment is usually given after students have some substantial experience and time dealing with the concept.

**Notebooks**

Notebooks are used heavily in this class and should be brought to class each day. Please do not use the science notebook for any other class (except 3-ring binders with dividers) and vice versa, do not put any science work or notes in any notebook for another class. If a student forgets their notebook for class, they must write all work and notes on loose leaf paper and then that work must be written in the notebook at a later time. Notebooks will be checked twice per marking period. Pre-class questions and answers, notes, class work, written homework, organization and neatness will all be considered in a notebook check.

**Snap Quizzes**

In addition to regular tests and quizzes, snap quizzes will be given after a concept has been introduced, taught, experienced, and practiced. These quizzes allow students to evaluate themselves so they can determine whether they have mastered a subject before a formal quiz or test is given.

**Experiments and Lab Safety**

In order for students to fully experience Science, we will have several experiments throughout the course of the year. On these days,

* There is to be no eating or drinking in the classroom (Homeroom breakfast only)
* Long hair should be tied back
* Students must wear goggles (personal goggles may purchased and brought in)
* Students must adhere closely to lab safety procedures

**Projects and Lab Reports**

There will be at least 4 projects this year pertaining to each of the first 4 units of the curriculum. They will be assigned at the beginning of each unit and will due near the end of each unit. These projects will be graded based on rubrics that will be given to students and posted on the class website.

After each experiment a lab report will be due where the student must use the scientific method to explain the experiment and their outcome. These will also be graded based on a rubric that will be posted on the class website.

**Grading**

Grading is as follows:

Homework and Snap Quizzes: 10 points

Formal Quizzes and Lab Reports: 25 points

Formal Tests and Mini Projects: 50 points

Projects: 100 points

At the end of each term, each student’s points are added up and divided by total possible points for the marking period to get their total grade.

**Class Website**

The class website will be a useful tool where students and parents can get updates on the class, see assignments that are due, get missed class notes and find additional resources to help students learn the material for the class.

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