**Basic Information**



**Physical Science General/Honors**

**Cheryl Parliament**

[cheryl.parliament@elmoreco.com](mailto:cheryl.parliament@elmoreco.com)

School Number 334-567-1413

COURSE DESCRIPTION

Course Objectives:

By the end of this course, the student will:

1 ) Analyze patterns within the periodic table to construct models (e.g., molecular-level models, including drawings; computer representations) that illustrate the structure, composition, and characteristics of atoms and molecules.

2 ) Plan and carry out investigations to generate evidence supporting the claim that one pure substance can be distinguished from another based on characteristic properties.

3 ) Construct explanations based on evidence from investigations to differentiate among compounds, mixtures, and solutions.

4 ) Design and conduct an experiment to determine changes in particle motion, temperature, and state of a pure substance when thermal energy is added to or removed from a system.

5 ) Observe and analyze characteristic properties of substances (e.g., odor, density, solubility, flammability, melting point, boiling point) before and after the substances combine to determine if a chemical reaction has occurred.

6 ) Create a model, diagram, or digital simulation to describe conservation of mass in a chemical reaction and explain the resulting differences between products and reactants.

7 ) Design, construct, and test a device (e.g., glow stick, hand warmer, hot or cold pack, thermal wrap) that either releases or absorbs thermal energy by chemical reactions (e.g., dissolving ammonium chloride or calcium chloride in water) and modify the device as needed based on criteria (e.g., amount/concentration, time, temperature).

8 ) Use Newton's first law to demonstrate and explain that an object is either at rest or moves at a constant velocity unless acted upon by an external force (e.g., model car on a table remaining at rest until pushed).

9 ) Use Newton's second law to demonstrate and explain how changes in an object's motion depend on the sum of the external forces on the object and the mass of the object (e.g., billiard balls moving when hit with a cue stick).

10 ) Use Newton's third law to design a model to demonstrate and explain the resulting motion of two colliding objects (e.g., two cars bumping into each other, a hammer hitting a nail)

11 ) Plan and carry out investigations to evaluate how various factors (e.g., electric force produced between two charged objects at various positions; magnetic force produced by an electromagnet with varying number of wire turns, varying number or size of dry cells, and varying size of iron core) affect the strength of electric and magnetic forces

12 ) Construct an argument from evidence explaining that fields exist between objects exerting forces on each other (e.g., interactions of magnets, electrically charged strips of tape, electrically charged pith balls, gravitational pull of the moon creating tides) even when the objects are not in contact.

13 ) Create and analyze graphical displays of data to illustrate the relationships of kinetic energy to the mass and speed of an object (e.g., riding a bicycle at different speeds, hitting a table tennis ball versus a golf ball, rolling similar toy cars with different masses down an incline).

14 ) Use models to construct an explanation of how a system of objects may contain varying types and amounts of potential energy (e.g., observing the movement of a roller coaster cart at various inclines, changing the tension in a rubber band, varying the number of batteries connected in a series, observing a balloon with static electrical charge being brought closer to a classmate's hair).

15 ) Analyze and interpret data from experiments to determine how various factors affect energy transfer as measured by temperature (e.g., comparing final water temperatures after different masses of ice melt in the same volume of water with the same initial temperature, observing the temperature change of samples of different materials with the same mass and the same material with different masses when adding a specific amount of energy).

16 ) Apply the law of conservation of energy to develop arguments supporting the claim that when the kinetic energy of an object changes, energy is transferred to or from the object (e.g., bowling ball hitting pins, brakes being applied to a car).

17 ) Create and manipulate a model of a simple wave to predict and describe the relationships between wave properties (e.g., frequency, amplitude, wavelength) and energy.

a. Analyze and interpret data to illustrate an electromagnetic spectrum.

18 ) Use models to demonstrate how light and sound waves differ in how they are absorbed, reflected, and transmitted through different types of media.

19 ) Integrate qualitative information to explain that common communication devices (e.g., cellular telephones, radios, remote controls, Wi-Fi components, global positioning systems [GPS], wireless technology components) use electromagnetic waves to encode and transmit information.

Required Student Resources

Three composition books, colored pencils, glue sticks, scissors, blue/black pen and pencils\*.

*WISH LIST:*$ 10.00 Donation

                     Kleenex Band-Aids’

      Hand sanitize Paper towel

**Course Schedule/Outline/Calendar of Events**

**1st Semester**

General Skills

***Atoms & the Periodic Table***

Introduction to Matter

Atomic Theory

Elements

Periodic Table

Metals

Non-metals

Metalloids

***States & Properties of Matter***

States of Matter

Changes of State

Physical Properties

Density

Chemical Properties

***Chemical Bonding and Reactions***

Chemical Bonding

Ionic Bonding

Covalent Bonding

Compounds

Polymers

Introduction to Chemical Reactions

Describing Chemical Reactions

Balancing Chemical Reactions

Types of Chemical Reactions

**2nd Semester**

***Motion***

Introduction to Motion

Speed and Velocity

Acceleration

***Forces***

Introduction to Forces

Gravity

Newton’s Law of Motion

Momentum

Energy

Introduction to Energy

Potential and Kinetic Energy

Energy Transformation

Temperature and Thermal Energy

Heat

***Waves, Sound & Light***

Introduction to Waves

Properties of Waves

Wave Interactions

Sound Waves

Using Sound

The Electromagnetic Spectrum

Properties of Light

Reflection and Mirrors

Refraction and Lenses

Radio Waves and Applications

***Electricity and Magnetism***

Electric Charge

Electric Current

Ohm’s Law

Electric Circuits

Magnets and Magnetism

Electromagnetism

**EVALUATION PROCEDURES & GRADING CRITERIA**

Ex.  Daily Grades (Quizzes, Writing Assignments, & Bell Ringers/Exit Slips) are 50% of final grade.

       Test Grades (Tests & Projects) are 50% of final grade.

## **Homework, Bell ringers & Notes**

## It is imperative that homework is completed each night in order to be successful in this course. Homework is intended to give your student reinforcement of topics in class, or a resource for studying. Homework may include watching a video in Edgenuity. The bell ringers will be completed in Edulastic. Your student will also want to keep notes. If I write it, then you need to write it. Ask questions! Ask for help as needed, you do not want to wait until the day before a test to ask for help.

**Evaluation Procedures and Grading Criteria**

In this class you will complete hands-on activities, assignments, quizzes, and projects. Each student will have between 8-12 daily grades and 3-5 test grades each nine weeks. Students will be doing a lot of group/pair work in this class. All students are expected to contribute to the assignment and to work collaboratively with the other student(s) in the group. A rubric will be used for all group work and projects.

**Late Work Policy**

Late work will be deducted 10 points per day from original due date.

**Attendance statement**

Will follow the Wetumpka Middle School Handbook.

**Exemption policy**

Will follow the Wetumpka Middle School Handbook.

**Communication**

E-mail is the easiest way for me to connect with parents. Please allow 24-48 hours for an email response. My email address is: [cheryl.parliament@elmoreco.com](mailto:cheryl.parliament@elmoreco.com)

However, do not hesitate to call the school to speak with me or schedule a conference.

**Remind Codes**

My Remind code for General Physical Science will be @\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Test this code to 81010 to join the information group on Remind. I will send out messages often.

\*Please note: Remind Chat will be available. Please contact me via email, phone or Remind.

**Classroom Guidelines, Policies & Procedures**

Class Expectations/Rules

1. Be respectful. (of others, classroom materials & yourself)
2. Be responsible (of others, classroom materials & yourself)
3. Safety FIRST!
4. I have bathroom passes for each student. They have five (5) per nine weeks. Exceptions for emergencies and medical needs. The medical needs student must have a note on file.

**Classroom Procedures**

1. **Students will follow all rules as outlined within the Elmore County Code of Conduct section of the student handbook.**
2. Show respect for everyone, at all times.
3. Listen and follow directions.
4. Raise your hand and wait for permission to speak or leave your seat. Students are expected to be seated & quiet at the beginning of class & during class time.
5. Be on time and be prepared. (Bring charged Chromebook, notebook & paper, pencil, and calculator to class daily. Cell phones will not be used as calculators.)
6. **Keep hands, feet, and objects to yourself.**
7. Place ALL trash into the trash can! There will be no eating during instructional time. No sunflower seeds or gum, ever! (PLEASE, do not leave trash on or around your desk!)
8. The Bell does NOT release students, the teacher will release students.

**Consequences:**

1. Verbal warning.
2. Parental/Guardian contact.
3. Parental/Guardian conference
4. Referral to administration.

**-----------------------------------------------------------Cut Here and SEnd back------------------------------------------------------------------**

**\*\*Please Return The SIGNED Portion of this Page to Your CHILD’S TEACHER. Parents please keep this Syllabus. Students will need to put the Class Procedures page in their notebooks!!! return to teacher by: Friday, August 14, 2020.**

**Student:**

I have read & understand the guidelines, responsibilities, & procedures of Mrs. Parliament’s Physical Science class. I agree to follow the guidelines & procedures set forth in this packet.

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Printed Name of Student Signature of Student

**Parent/Guardian:** I have read & understand the guidelines, responsibilities, & procedures of Mrs. Parliament’s Physical Science. If I have any questions, concerns, or problems, I will contact Mrs. Parliament.

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Printed Name of Parent/Guardian Signature of Parent/Guardian

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EMAIL ADDRESS DAYTIME/CELL PHONE