



8th Grade Science

Course Description

8th graders will be focusing on collaborative problem solving throughout the curriculum and using evidence to support their claims. Throughout the year, students will use engineering to build various contraptions as it relates to the curriculum. The year will be divided into four units and driving questions:

Unit 1: Chemistry

How can matter, its properties, and interactions be both detrimental and beneficial to you?

Unit 2: Forces and Interactions

How do forces affect the world around you?

Unit 3: Energy

How does energy cause change?

Unit 4: Waves and their Applications in Technologies for information Transfer

How does modern technology benefit from waves and their interactions.

Instructor:

Mr. Matt Bilen

Classroom # 57

Email: matt.bilen@central301.net

Phone: 847-464-6000

Course Materials Required:

- Folder / Pen / Pencil
- Chromebook

Learning Activities

- Lab activities and written responses
- Projects
- Data analysis
- STEM (Science Technology Engineering and Mathematics) activities
- Reading nonfiction texts
- Drawing conclusions from different resources
- Supporting claims with evidence

Learning Outcomes

The NGSS physical science standards can be found on the following link: [Standards](#)



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Course Outline

Unit	Approximate Dates	Topics	Larger Student Activities
Unit 1: Chemistry	Quarter 1	Atoms, Elements, Molecules Physical and Chemical Changes Bonding (compounds and molecules) Balancing reaction equations Energy with Solids, Liquids, and Gases Conservation of matter	Mystery Mixture Top Secret Periodic Table Growing Crystals Superhero Project Super Bubble Lab Iron in Cereal Glue Lab and Test Drops on a Penny
Unit 2: Forces and Interactions	Quarter 2	Gravity Magnetic and Electric Forces Newton's 3 Laws of Motion Types of Friction Pressure Forces Bernoulli's, Pascal's, Archimedes' Principles	Running and Data Collection Catapult Build Matchbox Car Lab Friction Lab Egg Safety Vehicle Paper Airplane Design Electromagnetic Lab Sphero Robot Lab Rocket Build and Launch
Unit 3: Energy	Quarter 3	Kinetic and Potential Thermal Chemical Mechanical Acoustical Nuclear Electrical Electromagnetic Conservation and Transfer of Energy	Calories in a Almond Insulated House Project Energy City Rube Goldberg Build Stop Motion Project Solar Oven Rollercoaster online lab
Unit 4: Waves and Technology	Quarter 4	Electromagnetic Spectrum Parts of a Waves Types of Waves (Light and Sound) Interactions of Waves Digital vs Analog	Design a Speaker Design an HD Antenna



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Major Course Assignments/Assessments

- Bolded above in student activities indicate major projects
- Students will have 20-25 point assessments about every two weeks during each unit.

Grading Procedures:

- Grades will be based on a weighted system.

Grades will be determined by the following category weights:

Category	Percentage
Labs/Projects	35%
Daily Work	30%
Assessments	35%

Grading Scale:

Letter Grade	Range
A	100-90
B	89.99-80
C	79.99-70
D	69.99-60
F	59.99-below

Absences/Make-up Work:

Students who are absent from school will be allowed to make up work for equivalent academic credit. The time allowed to makeup work will generally be one school day for every school day missed, starting with the first day the student returns to school. In extenuating circumstances a student may ask his/her teacher for additional time to make up work. It is the responsibility of the student (and his/her parent/guardian), not the teachers, to get the assignments, complete them, and turn them in, and to arrange a time with the teacher to make up any missed quizzes or tests. Incomplete work or failure to do the work may result in a lowering of grades.



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Timeframe for makeup work:

1. Work that is due the day the student is absent is due the day the student returns
2. For work assigned while the student is absent (including class notes or work), the student will have one day for every day they were absent to complete the assignments. (ex. Sick two days, the student will have two days from the time the student returns to turn in the work the student was assigned when absent)

Procedure to follow to receive and submit makeup work:

1. Physical copies, if there are any, can be found in the absent folder. Or they can speak directly with me.
2. It is the student's responsibility to submit absent work (canvas or to your teacher) on the appropriate day it is now due for the student.

Technology Policy

The District's electronic networks, including the Internet, are part of the District's instructional program and serve to promote educational excellence by facilitating resource sharing, innovation, and communication. Use of all electronic devices allowed as part of the District's Bring Your Own Device ("BYOD") program and the District issued Chromebook must be consistent with District policies and procedures. Such electronic devices may be used during instructional time only for educational purposes as approved by the Administration or teacher. Personal devices may be used by students during non-instructional time, such as during passing periods, and before or after school. Students may not place or receive phone calls during school day hours (6:20am to 2:46pm). Use is a privilege, not a right. Students and staff members have no expectation of privacy in any material that is stored, transmitted, accessed via the District's electronic networks. The District's rules for behavior and communications apply when using the electronic networks. Refer to the Chromebook Handbook issued by the district.

- The use of cell phones while in the Science classroom is strictly prohibited without teacher permission.

Academic Integrity:

Students engaging in academic dishonesty, including cheating, intentionally plagiarizing, wrongfully giving or receiving help during an academic examination, altering report cards, and wrongfully obtaining test copies or scores will be held to the standards of the 17-18 CMS Plagiarism Policy.



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Plagiarism/Cheating

Using someone else's ideas, phrasing or words and representing those as your own, either on purpose or through carelessness, is plagiarism. This is the same as "copying" the ideas of someone else. This includes, but is not limited to: copying from the Internet, copying from a reference source, copying from a friend, etc. Plagiarism can encompass an entire paper, a paragraph, a sentence, or even just one word. Any work that is turned in and is found to have been plagiarized will be disciplined as follows:

- All daily work, classwork, homework, and quizzes will result in a zero
- For large/unit assessments and projects:
 - 1st offense-Conference with the teacher with the option to redo the project/assessment for 50% off
 - 2nd offense- Conference with the teacher, parental contact, and a zero on the project/assessment

All subsequent offenses will result in a mandatory conference with the student, teacher, principal or student service coordinator. Consequences will be handled on a case by case basis.

Resources:

- Skyward
 - *Skyward is the official gradebook for science and will contain students' most accurate grade. Homework will be posted to the gradebook calendar, which can be accessed by students and parents.*
- Canvas
 - *Canvas is an all around management tool that will include some (but not all) content, assignments, and assessments.*
- Textbook online: <https://pearsonsuccessnet.com> (login information TBD)