

Good Shepherd Catholic School
Syllabus 2008-2009
8th Grade Science

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Although eighth grade science is called Physical Science, there are earth and life science strands imbedded in the curriculum as well. In this class, we will be looking at all three strands as well as connections with other curricular areas and the students' own lives. The emphasis is on hands-on learning and research-based projects where students learn basic skills in measurement, data collection, data analysis, the scientific method and application of their learning to other problems. Every eighth grade student will be completing an individual Science Fair project.

Physical Science Strand

- Review of the Periodic Table , atomic structure, isotopes and how the structure of the atom determines chemical reactions
- Review of Physical and Chemical properties of matter and how they are determined by atomic structure
- Review Physical and Chemical changes in matter and how they are determined by atomic structure
- Density and buoyancy, what they are and how they are affected by atomic structure
- Structure of matter, how atoms make elements, elements make molecules and compounds, solutions, mixture, crystal structures and how the structure of the atom can determine these.
- Chemical reactions including how to predict the product of a reaction based on atomic structure.
- Acids and bases, what they are, how they are measured and how they affect our lives
- Laws of Motion, how they are defined by a reference point, how they are described by speed, velocity and acceleration.
- Force of Gravity and how it applies to mass versus weight as well gravity on different planets
- Types of forces, how they relate to speed, velocity and acceleration, balanced and unbalanced forces and the cumulative affect of each.
- Types of Energy including potential and kinetic energy and transfers between them

Life Science Strand

- Review the chemistry of life, organic versus inorganic chemistry.
- Chemistry of living systems including an understanding of the unique properties of carbon, hydrogen, nitrogen, oxygen, phosphorous and sulfur and how they affect living organisms.
- Review the molecules of living organisms such as salts, carbohydrates, fats, proteins and DNA
- Chemistry of water and how it affects ecosystems and living organisms.

Earth Science Strand

- Chemistry of water and how it affects weather and climates
- Chemistry of gases and how it affects weather and climates, specifically ozone depletion and global warming.
- Review basic earth forces such as tension, compression, elasticity and friction as they relate to atomic structure.
- Structure of the universe, stars and galaxies based on chemical make-up, and physical and chemical properties.
- Measurement of time as it relates to light years and distances between the sun, stars, planets, etc.
- Solar system including general composition, size, relative position and motion of planets, moons, comets and asteroids.

Homework: Students should plan on 20-30 minutes of homework two to three times per week. Please do NOT let your student try to do all the homework in one night. Students should start the assignment the night it is assigned. Then, if they have any questions, they can come see me the next day, before the assignment is due, to get some help. I accept late work for half credit only, so keeping up with the work is critical! Homework is graded on accuracy and proper format. I have designed the homework format to be more brain compatible so students will more easily remember the information. It is important they follow the format. Students should be making flashcards of all the vocabulary words in the chapter. I will not grade these, but I will certainly know if they are studying the vocabulary or not. Homework is due at the beginning of the class on the day assigned. If a student does not turn in their homework on time, it will be accepted by the next class period for half credit. If a student has an “It’s Not Late” pass, they may attach that to the front of the paper and turn it in by the next class period for full credit. Work that is not turned in by the next class period is not accepted for any credit, but it will be counted for their notebook grade. While a student may not receive homework credit for this kind of work, it is still critical that they complete all the homework assignments since they will be tested on the material.

Grading: Grades are based on points earned in the class. The students will be keeping their own grade sheet to monitor their progress. Since I usually only enter grades once a week or so, the students know their grades before I do! Ask to see their grade sheet if you are curious about their grade in this class.

Tests and Quizzes are from 10 points to 50 points. Tests will be given at the end of each chapter. Quizzes will be given weekly and may not be announced.

Labs/Activities will be done weekly. All work should be done neatly and legibly (I have bifocals! Please spare my eyes!) Labs are graded on accuracy of information and clarity of thinking.

Projects will be assigned intermittently throughout the quarter. The purpose of a project is to demonstrate the student learning, so it is important that it be complete. I will give the students a list of the MINIMUM requirements, that is what they have to do for a “C” grade. These requirements are the things I need to see to demonstrate average competence. They will need to go above and beyond to get an “A” or “B”, and we will discuss what that means for each project.

If a student **does not have the minimum** requirements, even if they have done some extra work, the highest grade I can give them is a “C-”. A checklist will always be provided, so please help your student check their work before they turn it in.

Organization is critical, so I will be giving organization grades on their science notebooks. Notebooks need to be organized as per the grade sheet with every page numbered, titled, in order and complete. Notebooks will be graded 1-2 times per trimester.

Material Checks encourage students to bring their class materials with them every day. They can't do the job if they don't have the tools! Every week I will be giving a grade for having all of their materials with them. Material checks are not announced ahead of time.

Absences/Make-up Work: If a student is absent, I print out a copy of the class homework, agenda and notes and pin it to the back wall. The student needs to pick this up along with any papers that have been passed back the **day they return to class**. After picking up any handouts that were pinned to the board for them, **they must see me that day to set new due dates**. I will also explain any notes that were taken and reschedule any tests or labs that were given. Once the new due dates are agreed upon, they will follow the same rules as regular homework. If they are not turned in by the agreed-upon due date, the assignments are late and will be counted as half credit.

Class Rules:

- 1) **Respect** – yourself, others, their property, their rights, the classroom, the equipment, the class pets.
- 2) **Responsibility** – to be ready for class with work and materials, to be safe and appropriate with all lab equipment and chemicals, to do the right thing even when it isn't easy,

Any infractions of the rules will result in a lunch time or after school detention, a phone call home, and a possible visit to the Principals office.

I have read and understand the above information.

Student signature

Parent Signature