

# Ms. Robles Active Chemistry and Earth Science

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krobles@troy.k12.mi.us

Active Chemistry is a course that will focus on topics in chemistry and earth science. It will be organized differently from a traditional science class. Rather than the content being presented as a collection of facts, students will discover concepts by exploring and investigating. The goal is to have the students experience real science, in which they have open-ended questions that can be answered using the scientific method. There will be a heavy emphasis on experimental analysis: connecting observations with prior knowledge. The majority of class time will be spent working in cooperative lab groups.

In each "UNIT" we will have six to seven sections that explore topics of a major theme. The chapters will culminate with a Challenge, a project that will give groups a chance to produce something that demonstrates their understanding of the topics in the chapter. Tests will be given at the end of chapters.

## Grading:

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For this class your grades will come from three places. Your grades are figured out by total points. Additional policies can be found in the student handbook.

- **Activity Packets**
  - These make up the BULK of your grade. Each time you hand in a packet, you will receive usually FIVE grades:
    - Lab Participation
    - Investigate - Lab Write-Up
    - Chem Talk/Notes
    - Packet- Includes WDYS/WDYT and Chem questions at the end
    - Quiz – You will have an OPEN NOTE quiz at the end of each activity
- **Unit Tests and Challenges** - At the end of each unit we will have some LARGE grade.
- **Other** – Along the way we will have "other" activities that will go into the grade book.

## Final Exam Policy:

In this class you will have a mid-term and a final that will count towards 10% of your semester grade. It will be OPEN NOTE!

## Grading Scale:

12	A	6	C
11	A-	5	C-
10	B+	4	D+
9	B	3	D
8	B-	2	D-
7	C+	1	E
		0	No Credit

## Materials:

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- Your **Active Chemistry Binder**. This will be your most essential tool, please make sure you have it every day.
- Something to write with.

## **Class Outline:**

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### **UNIT**

#### 1. Matter

- Lab Safety
- Matter
- Physical and Chemical Properties
- Physical and Chemical Changes
- Solutions, Suspensions and Colloids
- Compounds and Elements
- Solutions (Supersaturated, Unsaturated and Saturated)

#### 2. Atoms

- The Periodic Table
- Properties of Elements
- Metals vs. Non Metals
- Atomic Structure
- Bonding
- Naming and Writing Formulas
- Electron Configurations

#### 3. Chemistry of Art

- Durability of Materials
- Metals (Alloys)
- Clay (Hydrates)
- Paints (Ionic Bonding)
- Dyes (Chemical Interactions)

#### 4. Chemistry of Food

- Cooking Safety and Fires (Combustion)
- Boiling and Freezing Water
- Types of Cooking Fuels
- Water
- Types of Cookware (Metals/Specific Heat)
- Cooking Food (Energy Transformations)
- Browning in Foods
- Cooking an Egg (Proteins)

#### 5. Chemistry of Soap

- How soap works (Polarity)
- Making Soap
- The Structure of Soap
- Type of soap
- Cleaning Dirty Laundry (Solvents)

#### 6. Severe Weather

- Clouds and Storms
- Tornadoes
- Hurricanes
- Flooding
- Extreme Heat

#### 7. Climate Change

- **The Carbon Cycle**
- **Remote Sensing**
- **Intro to Flying Remote Sensing Kites**
- **Climate Change**
- **The Effect on the Environment**
- **Analyzing Remote Sensing Data**