

PASADENA INDEPENDENT SCHOOL DISTRICT
COURSE SCOPE AND SEQUENCE

CONCEPTUAL CHEMISTRY

[Texas Essential Knowledge and Skills \(TEKS\)](#)

Important resources for entire science curriculum:

TRACK

TAKS readiness (links to lessons, activities, video, etc.)

United Streaming Video

Streaming educational video on thousands of topics

Science Materials

*Free science interactive lessons (Click on **Key Stage 3**)*

****Instructional Days**

[number]- reflects **total** number of instructional days available in each six week period minus **3** days for review and testing

(number)- reflects recommended instructional days for each instructional topic within each six week period.

Important Dates

First Semester

First Six Weeks: Aug10- Sept 15 [23] Instructional Days
Second Six Weeks: Sept 18- Oct 27 [27] Instructional Days
Third Six Weeks: Oct 30- Dec 15 [26] Instructional Days

Second Semester

Fourth Six Weeks: Jan 3- Feb 16 [29] Instructional Days
Fifth Six Weeks: Feb 19- April 5 [24] Instructional Days
Sixth Six Weeks: April 10- May 24 [33] Instructional Days

Science TAKS Test: Thursday April 19, 2007- 8th, 10th, and 11th grades

FIRST SEMESTER

[23]



Represents the total number of instructional days available in each six-week period minus 3 days for review and testing.

First Six Weeks

Laboratory Investigation and Inquiry Process are applied to all instruction, assessment and learning processes.
TEKS 1AB, 2ABCD, 3ABCDE

| TAKS | TEKS | DAYS | INSTRUCTIONAL TOPIC | RESOURCES | LABORATORY INVESTIGATIONS AND ACTIVITIES |
|------|---------------------------|------|---|--|--|
| 1 | 1A 2ABCDE 3AB 4A | | Laboratory Investigation and Inquiry Process Safety Scientific Methods <ul style="list-style-type: none"> - Experimental Design - Inference vs Observation - Data Collection and Analysis - Evaluation and Conclusion Measurement <ul style="list-style-type: none"> - Accuracy and Precision - Metric units <ul style="list-style-type: none"> Mole as a unit of conversion - unit conversions - significant figures, scientific notation | Scientific Methods Lecture Notes Lab Safety Lab Safety Carnegie Institution 40 Steps for Lab Safety Scientific Methods Notes Scientific Methods | |
| 4 | 4A 5A | | Matter and Change: Physical and Chemical Properties Physical and Chemical Changes <ul style="list-style-type: none"> - Indication of chemical reactions - Change of Color, Change of Temperature, Gas Formation, - Precipitate Density, Viscosity, Buoyancy | Chemistry Tutorial Physical and Chemical Property | |

| | | [27] | Second Six Weeks <i>Laboratory Investigation and Inquiry Process are applied to all instruction, assessment and learning processes.</i> <u>TEKS 1AB, 2ABCD, 3ABCDE</u> | | |
|------|----------------------|--------|---|--|--|
| TAKS | TEKS | **DAYS | INSTRUCTIONAL TOPIC | RESOURCES | LABORATORY INVESTIGATIONS AND ACTIVITIES |
| 4 | 4ABC 5AC 7A | | Matter and Change (cont.): States of Matter - Properties of Gases, Liquids, and Solids - Solids <ul style="list-style-type: none"> o Motion, Compressibility, o Structure, Shape, Volume o Relationship between o volume, temperature, and o pressure in gases Phase Change - Phase change diagram Heat Transfer - Specific Heat, Heat Capacity - Conduction, Convection, Radiation Classification - Elements, Compounds - Mixtures (homogeneous vs heterogeneous) <ul style="list-style-type: none"> o Colloids, Suspensions, o Alloys | States of Matter Notes States of Matter Lesson Plans Atomic Structure Notes Matter Classification Elements and Compounds Elements, Compounds and Mixtures Mixtures | |

| | | [26] | Third Six Weeks <i><u>Laboratory Investigation and Inquiry Process are applied to all instruction, assessment and learning processes. TEKS 1AB, 2ABCD, 3ABCDE</u></i> | | |
|------|----------------------|--------|---|---|--|
| TAKS | TEKS | **DAYS | INSTRUCTIONAL TOPIC | RESOURCES | LABORATORY INVESTIGATIONS AND ACTIVITIES |
| 1, 4 | 3ADE 4D 6ABC | | Elements and Atomic Structure: Subatomic Particles and Isotopes <ul style="list-style-type: none"> - Properties of Protons, Neutrons, and Electrons - History of the Atom and Atomic Theories <ul style="list-style-type: none"> o Democritus, Dalton, o Thomson, Rutherford, o Bohr Identify elements by particles <ul style="list-style-type: none"> - Atomic number, atomic mass, - isotopes Periodic Table <ul style="list-style-type: none"> - Groups, Families, Periods - Halogens, Noble Gases, - Metals, Nonmetals, Transition - Metals, Metalloids | Atomic Structure Timeline A Brief History of the Atom Mendeleev Biography Los Alamos National Laboratory Periodic Table How to Interpret Periodic Table Periodic Chart Atomic Structure Notes Atomic Structure Notes/Diagrams Covalent Compounds Covalent Bonding | |

SECOND SEMESTER

| SECOND SEMESTER | | | | | |
|-----------------|----------------------|--------|---|--|--|
| | | [29] | Fourth Six Weeks <u>Laboratory Investigation and Inquiry Process are applied to all instruction, assessment and learning processes. TEKS 1AB, 2ABCD, 3ABCDE</u> | | |
| TAKS | TEKS | **DAYS | INSTRUCTIONAL TOPIC | RESOURCES | LABORATORY INVESTIGATIONS AND ACTIVITIES |
| 1, 4 | 4D 8ABCD 11ABC | | Compounds and Bonding: Electron Configurations Formation of Cations and Anions - Oxidation numbers Properties of Ionic Compounds - Names and Formulas o Roman numerals vs o classical names - Conductivity Properties of Covalent Compounds - Names and Formulas o Prefixes | ChemTutor- Compounds Atomic Bonds Interactive Lesson and Animations on Chemical Bonding Bonding Ionic Compounds Covalent Worksheets | |
| 1, 4 | 11BC | | Chemical Reactions: Writing and Balancing Equations Law of Conservation of Mass | Balancing Reactions Conservation of Mass | |

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|------|----------------------|--|--|---|
| | [24] | <p align="center">Fifth Six Weeks</p> <p align="center"><i>Laboratory Investigation and Inquiry Process are applied to all instruction, assessment and learning processes.</i></p> <p align="center"><u>TEKS 1AB, 2ABCD, 3ABCDE</u></p> | | |
| 1, 4 | 10AB 11B | | <p>Chemical Reactions: Review Chemical Properties and Changes Indication of chemical reactions - Change of Color, Change of Temperature, Gas Formation, Precipitate Types of Reactions - Synthesis, Decomposition, Single Replacement, Double Displacement, Combustion</p> | Chemical Reactions Notes ChemTutor Reactions Chemical Reactions Balancing Chemical Reactions Chemical Reaction Interactive Slide Show |
| 4 | 12 ABC 13 AB | | <p>Water and Solutions: Properties of Water - Polarity and Hydrogen Bonding Solutions - Dilute, Concentrated, Saturated and Supersaturated - Factors Affecting Solubility o Temperature, Pressure, Nature of Solute/Solvent, Particle Size - Solubility Curves</p> | Water Structure and Behavior Oceans Online Hydrogen Bonds Water and Hydrogen Bonding |
| 4 | 2C 11BC 14ABCD | | <p>Acids and Bases: Definitions and Naming Physical and Chemical Properties pH and Indicators Neutralization Electrolytes</p> | Acids Acids and Bases ChemTutor- Acids Acids and Bases Information Acids and Bases |

| | | [33*] | Sixth Six Weeks <i>Laboratory Investigation and Inquiry Process are applied to all instruction, assessment and learning processes. TEKS 1AB, 2ABCD, 3ABCDE</i> *Please consider, that the total number of instructional days for second semester does not reflect the five days allocated for TAKS Testing nor the number of days a campus may use for TAKS review. | | |
|------|----------------------|--------|---|---|--|
| TAKS | TEKS | **DAYS | INSTRUCTIONAL TOPIC | RESOURCES | LABORATORY INVESTIGATIONS AND ACTIVITIES |
| 4, 5 | 6A 9 ABCD 11 C | | Nuclear Chemistry: Types of Reactions Symbols for alpha, beta, gamma Fusion and Fission Half Lives Environment Issues with Nuclear Materials | Fission Nuclear Structure Information Fusion vs. Fission Half-life | |
| | | | Stoichiometry: Moles Relationships between moles, molar mass, volume, and molecules in chemical reactions | Chemtutor Hints for Solving Stoichiometry Problems | |
| | | | Special Topics of Chemistry Organic, real world applications, forensics, etching, etc | | |
| | | | GENERAL SCIENCE TEACHING RESOURCES | Free Lessons and Activities- Chemfiesta | |

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