

# PERFORMANCE DESCRIPTORS FOR MASTERY

## 12TH GRADE SCIENCE/CHEMISTRY

### Nature and Application of Science:

#### SC.PD.12.1

##### Mastery

Chemistry students at mastery level in the nature and applications of science:

implement safe practices as they design, conduct, and revise experiments and base conclusions on observations and experimental evidence, and

relate science-technology-societal issues while using a variety of sources to construct and defend their solutions.

### Students will:

- Demonstrate an understanding of history and nature of science as a human endeavor encompassing the contributions of diverse cultures and scientists.
- Demonstrate the ability to use the inquiry process to solve problems.
- Relate science-technology-societal issues while using a variety of sources to construct and defend their solutions



### Content of Science:

#### SC.PD.12.2

##### Mastery

Chemistry students at mastery level:

classify pure substances by their chemical and physical properties;

relate scientific explanations based on historical observations and experimental evidence to explain atomic theory, bonding, structure and periodic trend;

generate the correct formula and/or name ionic or molecular compounds;

write and classify balanced chemical reactions;

perform the following 'mole' calculations: molarity, percentage composition, empirical and molecular formula, formulas of hydrates and theoretical yield;

determine experimentally the effects of temperature and concentration on solution properties;

perform calculations using the combined gas laws; compare methods of measuring pH while conducting a neutralization experiment;

apply the appropriate oxidation numbers to balance redox reactions, and identify oxidation numbers to determine electron movement.

### Students will:

- Demonstrate knowledge, understanding and applications of scientific facts, concepts, principles, theories and models as delineated in the objectives.
- Demonstrate an understanding of the interrelationships among physics, chemistry, biology, earth/environmental science and astronomy.
- Apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences.



## 12TH GRADE SOCIAL STUDIES

### Geography:

#### Performance Descriptors

##### Mastery

Twelfth grade students at mastery level in geography:

evaluate stages of development and analyze sustainable development that balance healthy economic growth with environmental protection;

research, debate and evaluate demographic data on a variety of local and global issues; and

research different types GIS systems to determine the most effective technology for various purposes.

### Civics:

#### Performance Descriptors

##### Mastery

Twelfth grade students at mastery level in civics:

explain the protection of personal, political and economic rights of citizens as the purpose of American constitutional government;

interpret the different roles of citizens in politics and government;

outline the different levels and forms of government and evaluate how political, religious and economic climates influence decision making;

research and analyze the impact of the media, special interest groups and political parties on political issues and public policy;

examine the influence of the United States on global issues;

explain the factors which influenced the foundational documents;

summarize the Supreme Court interpretations of the Constitution; and

work with others to seek consensus, compromise and manage conflict.

### Literacy:

#### Performance Descriptors

##### Mastery

Eleventh and twelfth grade students at mastery level in literacy:

cite textual evidence; summarize the relationships; evaluate explanations acknowledging where the text leaves matters uncertain;

determine how the meaning of a key term is refined over the course of a text; evaluate differing points of view;

evaluate multiple sources presented in diverse formats and media; evaluate author's premises, claims, and evidence; integrate information, noting discrepancies among sources;

read and comprehend history/social studies texts in the grades 11-CCR text complexity band independently and proficiently;

compose arguments and informative/explanatory texts; develop the topic with significant details to create a unified whole;

use technology to develop, strengthen, publish and present clear and coherent writing and update in response to ongoing feedback, including new arguments or information;

conduct short and sustained research projects synthesizing multiple sources; assess the strengths and limitations of each source; avoid plagiarism and overreliance on any one source; and write over extended time frames for research-based projects and shorter time frames for a range of discipline-specific tasks, purposes and audiences.

### Economics/Personal Finance:

#### Performance Descriptors

##### Mastery

Twelfth grade students at mastery level in finance:

evaluate how career choice influences personal economic future;

apply basic economic concepts to personal financial literacy;

examine the rights and responsibilities of informed consumers and producers; and

research various banking, credit, investment, and spending activities to evaluate sound financial decisions.

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# RESA

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