

# Pacing Guide\_Self Contained Science\_year 1-Physical Science-Chemistry

Content Area: **Science**  
Course(s):  
Time Period: **Full Year**  
Length: **Type Length of Unit**  
Status: **Published**

## **General Overview, Course Description or Course Philosophy**

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*Science and engineering—significant parts of human culture that represent some of the pinnacles of human achievement—are not only major intellectual enterprises but also can improve people’s lives in fundamental ways. Although the intrinsic beauty of science and a fascination with how the world works have driven exploration and discovery for centuries, many of the challenges that face humanity now and in the future—related, for example, to the environment, energy, and health—require social, political, and economic solutions that must be informed deeply by knowledge of the underlying science and engineering.*

## **OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS**

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Learning Set 1: How Does an Odor Get from the Source to My Nose?

How can one explain the structure, properties, and interactions of matter? How do particles combine to form the variety of matter one observes? How do organisms live, grow, respond to their environment, and reproduce? How do the structures of organisms enable life’s functions?

Learning Set 2: What Makes One Odor Different from Another?

How can one explain the structure, properties, and interactions of matter? How do particles combine to form the variety of matter one observes? How do organisms live, grow, respond to their environment, and reproduce? How do the structures of organisms enable life’s functions?

Learning Set 3: How Can a Material Change so You Can Smell It?

How can one explain the structure, properties, and interactions of matter? How do particles combine to form the variety of matter one observes?

Learning Set 4: How Can a Material Change so You Can Smell It?

How can one explain the structure, properties, and interactions of matter? How do particles combine to form the variety of matter one observes?

## **CONTENT AREA STANDARDS**

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SCI.MS-LS1-8

Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

SCI.MS-PS1-1	Develop models to describe the atomic composition of simple molecules and extended structures.
SCI.MS-PS1-4	Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

## **RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)**

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MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.4	Model with mathematics.
MA.6.RP.A.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
LA.RH.6-8.7	Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.
LA.RH.6-8.8	Distinguish among fact, opinion, and reasoned judgment in a text.

## **EVIDENCE OF LEARNING**

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### **Formative Assessments**

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MS-LS1-8: Introduction to Chemistry 1: Activity 1.1: Can You Smell What I Smell?, Reading 1.1: Can You Smell What I Smell?, Reading 1.2: How Can Models Help Me Understand Odors?, Reading 6.1: In What Ways Do People Use Detectors?

MS-PS1-1: Introduction to Chemistry 1: Reading 6.2, Reading 8.1, Activity 8.2, Activity 8.3, Reading 8.3, Activity 9.1, Reading 9.1, Activity 10.1, Reading 10.1, Activity 16.1

MS-PS1-4: Introduction to Chemistry 1: Activity 1.2: Developing an Initial Model, Activity 2.1: Can Something Have Mass Even if I Cannot Feel It?, Reading 2.1: Can Something Have Mass Even if I Cannot Feel It?, Activity 2.2: Measuring Volume, Activity 2.3: What Happens to My Lungs When I Breathe in Air?, Reading 2.3: What Happens to My Lungs When I Breathe in Air?, Homework 2.3: Mass and Volume, Activity 3.1: Investigating Matter, Reading 3.1: Three Forms of Matter: Solid, Liquid, Gas, Homework 3.1: Classifying Forms of Matter, Activity 3.2: Why Does Water Have many Names?, Reading 3.2: What Needs to Happen to a Material so that I Can Smell It?, Activity 4.1: How Can I Model the Things Gases Do?, Reading 4.1: How Can I Model the Things Gases Do?

### **Summative Assessments**

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1. CER
2. Lab Checks

3. IQWST End of Unit Assessment (performance based & written)

## **RESOURCES (Instructional, Supplemental, Intervention Materials)**

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IQWST Unit Materials for Chemical Science 1 Learning Set 1-4

*A Framework For K-12 Science Education*

*Online Resources provided by IQWST not included in the program (to be used as support/reinforcement/enrichment): [https://docs.google.com/spreadsheets/d/1VpyFCL4\\_50\\_-1w2NhcGpdNNZ2jj6aJJegcIUNCy\\_uzQ/pubhtml](https://docs.google.com/spreadsheets/d/1VpyFCL4_50_-1w2NhcGpdNNZ2jj6aJJegcIUNCy_uzQ/pubhtml)*

## **INTERDISCIPLINARY CONNECTIONS**

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Collaboration with Math and Language Arts teachers is an essential part of the IQWST curriculum.

Information Writing

Current Events

Topography

Data collection/analysis

Computations

Statistics

Engineering

## **ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS**

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See link to Accommodations & Modifications document in course folder.

IQWST provides audio recording for all readings in student workbook-available through teacher portal online

Reading differentiation strategies are embedded in the IQWST program and all students prepare for reading through a 'Getting Reading' section which begins each reading.

The sections are designed to engage students, generate interest, activate prior knowledge and provide a purpose for reading. Teachers use advance organizers for desired readings and to encourage students to plan and annotate the passages.

A word wall is developed through vocabulary acquisition in the program. Students develop the word wall as words are learned in context and through experience in class. This helps to build meaning and understanding which support students when reading text.

Students are encouraged to ask questions and post them to the Driving Question Board. This DQB helps students develop a greater level of understanding and encourages students to work together to solve problems in and outside of class.

Support will be provided to students when writing in the student manual and use of the computer, printing, and pasting into the manual is acceptable if there is a present need.