



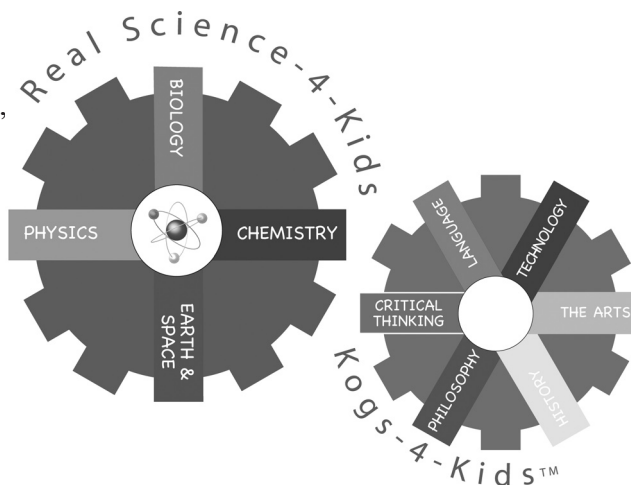
Real Science-4-Kids

Kogs-4-Kids

Lesson Plan

What is Real Science Kogs-4-Kids™ ?

Real Science Kogs-4-Kids™ is a supplementary set of six workbooks that accompany the Real Science-4-Kids textbook, laboratory workbook, and teacher's manual for Chemistry Level I A. This workbook set will allow a teacher to instruct their student using a concept-based interdisciplinary approach. Each chapter connects a general statement to a disciplinary concept and to the scientific facts presented in the chapter. By helping students see connections between disciplines, the teacher provides a framework for better student comprehension and retention of the scientific subject matter presented.



Cognitive Connections or “Kogs”

Each chapter is connected to six interdisciplinary subjects creating a “cognitive connection” or “kog.” The six subjects that create the “Kog” are history, philosophy, technology, the arts, language, and critical thinking. For each chapter the student will learn not only the scientific information, but how that information connects to different disciplines. How is scientific information developed historically? What contributions has philosophical thought played in the development of science? How does scientific information contribute to new technologies? How are science and art related? What is the language of science and what other English words use the same Latin or Greek word roots? and finally How does a scientist think critically?

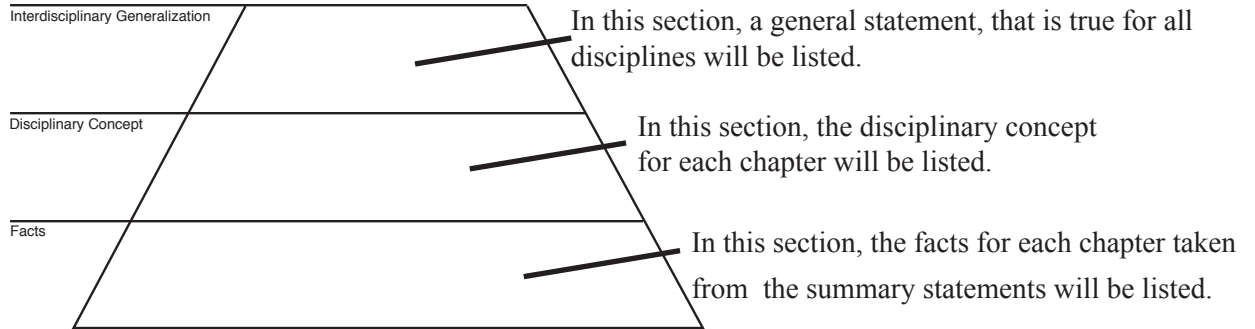
Discussion Questions and Activities

For the Philosophy Kog, the Technology Kog, The Arts Kog, and the History Kog at the end of each chapter there is a set of discussion questions or activities. *There are no right answers to these questions.* The discussion questions and activities for these Kogs are designed to allow a student to inquire about the history and philosophy of science, how art and science meet, how science creates technology, and how technology expands science.

The Critical Thinking Kog and Language Kog do not have a separate set of Discussion Questions and Activities. The student follows the instructions for each section of the chapter and they fill in the sections with the answers as they work through the workbook.

How this Lesson Plan Works

On the title page for each chapter, there is a diagram showing the disciplinary facts, the disciplinary concept, and an interdisciplinary generalization. This will help you understand how the facts presenting in each chapter are a subset of facts associated with a disciplinary concept and how that disciplinary concept is part of an interdisciplinary generalization. In this way the students can create a framework for interlizing the facts presented in the text book and learn how to expand those concepts toward a general theme.



Following the title page each chapter is divided into two-week segments. Each day of the week is shown with the materials needed for that week, a place to write the date, and the assignment for that day

Week 1	Materials	Date	Activity
Monday	ST		<ul style="list-style-type: none"> ● Have students look through the Chemistry Level I student textbook (ST). ● Have students explore the overall scope and sequence of the material.
Tuesday	LW		<ul style="list-style-type: none"> ● Have the students look through the Chemistry Level I Laboratory Workbook (LW). ● Collect the bulk items listed in the material section.
Wednesday	LKOG HKOG		<ul style="list-style-type: none"> ● Have students read the introductory chapters for the Language KOG (LKOG) and the History KOG (HKOG).
Thursday	PKOG TKOG		<ul style="list-style-type: none"> ● Have students read the introductory chapters to the Philosophy KOG (PKOG) and the Technology KOG (TKOG).
Friday	AKOG CTKOG		<ul style="list-style-type: none"> ● Have students read the introductory chapters to the Arts KOG and to the Critical Thinking KOG.

Below the daily division for each week is a table for additional reading materials. To the right of this table is a column for listing the national and/or state standards the curriculum meets.

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

Abbreviations:
LKOG : Language Kog
HKOG : History Kog
CTKOG: Critical Thinking Kog
AKOG : The Arts Kog
PKOG: Philosophy Kog
TKOG : Technology Kog
ST: Student Text
LW: Laboratory Workbook

Introduction

NOTES

Week 1	Materials	Date	Activity
Monday	ST		<ul style="list-style-type: none"> ❶ Have students look through the Chemistry Level I student textook (ST). ❷ Have students explore the overall scope and sequence of the material.
Tuesday	LW		<ul style="list-style-type: none"> ❶ Have the students look through the Chemistry Level I Laboratory Workbook (LW). ❷ Collect the bulk items listed in the material section.
Wednesday	LKOG HKOG		❶ Have students read the introductory chapters for the Language KOG (LKOG) and the History KOG (HKOG) .
Thursday	PKOG TKOG		❶ Have students read the introductory chapters to the Philosophy KOG (PKOG) and the Technology KOG (TKOG) .
Friday	AKOG CTKOG		❶ Have students read the introductory chapters to the Arts KOG and to the Critical Thinking KOG .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

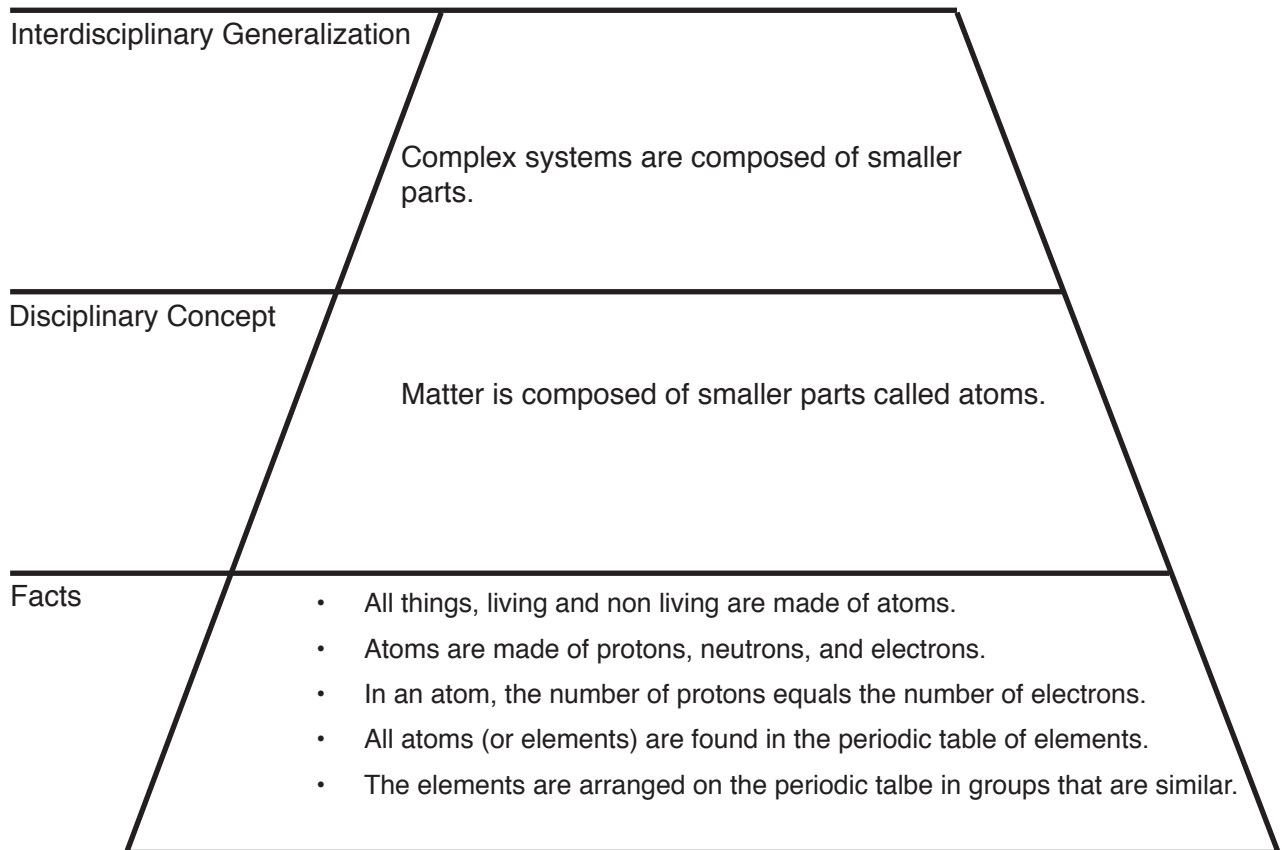
NOTES

Week 2	Materials	Date	Activity
Monday	ST		<ul style="list-style-type: none"> ❶ Have students look through the Chemistry Level I student textook (ST). ❷ Have students explore the overall scope and sequence of the material.
Tuesday	LW		<ul style="list-style-type: none"> ❶ Have the students look through the Chemistry Level I Laboratory Workbook (LW). ❷ Collect the bulk items listed in the material section.
Wednesday	LKOG HKOG		❶ Have students read the introductory chapters for the Language KOG (LKOG) and the History KOG (HKOG) .
Thursday	PKOG TKOG		❶ Have students read the introductory chapters to the Philosophy KOG (PKOG) and the Technology KOG (TKOG) .
Friday	AKOG CTKOG		❶ Have students read the introductory chapters to the Arts KOG and to the Critical Thinking KOG .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Introduction

Chapter 1: Matter



Week 3	Materials	Date	Activity
Monday	ST LW		<ol style="list-style-type: none"> ❶ Have students look through the Chemistry Level I Chapter 1 (ST) . ❷ Discuss the Summary statements on page 7 (ST) with the students. ❸ Discuss Experiment 1 with the students and gather necessary items.
Tuesday	LW		<ol style="list-style-type: none"> ❶ Have the students set up and perform Experiment 1 (LW). ❷ Review the terms and concepts on page 4 (LW).
Wednesday	LKOG		❶ Have students read and do the activities for Chapter 1 (LKOG) .
Thursday	HKOG		❶ Have students read and do the activities for Chapter 1 (HKOG) .
Friday	PKOG		❶ Have students read and do the activities for Chapter 1 (PKOG) .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

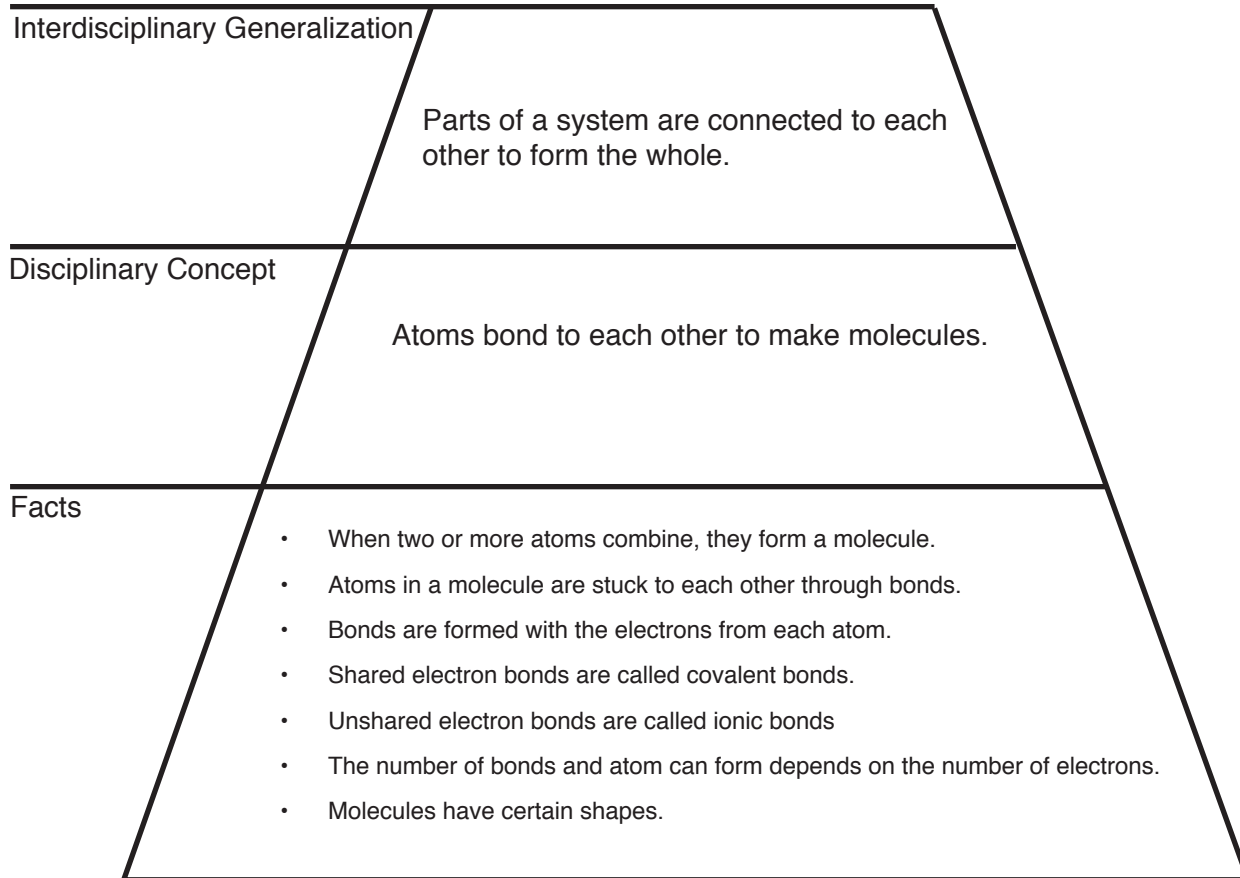
NOTES: Chapter 1

Week 4	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Discuss the conclusions the students wrote from Experiment 1. ❷ Have students think about ways to modify the experiment and have them perform any modifications they find interesting.
Tuesday	TKOG		❶ Have students read and do the activities for Chapter 1 (TKOG) .
Wednesday	AKOG		❶ Have students read and do the activities for Chapter 1 (AKOG) .
Thursday	CTKOG		❶ Have students read and do the activities for Chapter 1 (CTKOG) .
Friday	TEST		❶ Review Test Chapter 1 .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 1

Chapter 2: Molecules



Week 5	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Have students look through the Chemistry Level I Chapter 2 (ST) . ❷ Discuss the Summary statements on page 13 (ST) with the students. ❸ Discuss Experiment 2 with the students and gather necessary items.
Tuesday	LW		<ul style="list-style-type: none"> ❶ Have the students set up and perform Experiment 2 (LW). ❷ Review the terms and concepts on page 10 (LW).
Wednesday	LKOG		❶ Have students read and do the activities for Chapter 2 (LKOG) .
Thursday	HKOG		❶ Have students read and do the activities for Chapter 2 (HKOG) .
Friday	PKOG		❶ Have students read and do the activities for Chapter 2 (PKOG) .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

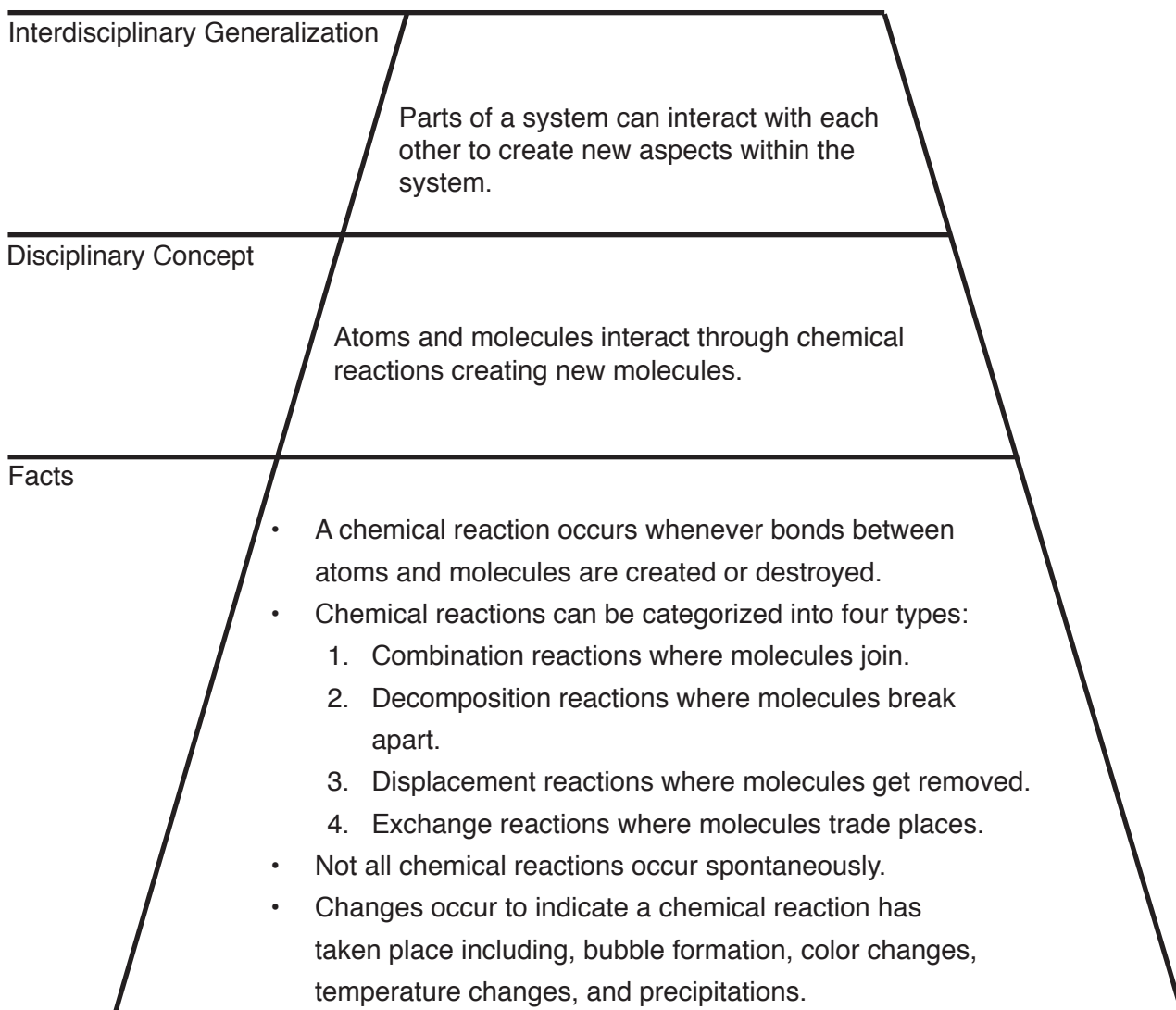
NOTES: Chapter 2

Week 5	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Discuss the conclusions the students wrote from Experiment 2. ❷ Have students think about ways to modify the experiment and have them perform any modifications they find interesting.
Tuesday	TKOG		❶ Have students read and do the activities for Chapter 2 (TKOG) .
Wednesday	AKOG		❶ Have students read and do the activities for Chapter 2 (AKOG) .
Thursday	CTKOG		❶ Have students read and do the activities for Chapter 2 (CTKOG) .
Friday	TEST		❶ Review Test Chapter 2 .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 2

Chapter 3: Chemical Reactions



Week 6	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Have students look through the Chemistry Level I Chapter 3 (ST) . ❷ Discuss the Summary statements on page 19 (ST) with the students. ❸ Discuss Experiment 3 with the students and gather necessary items.
Tuesday	LW		<ul style="list-style-type: none"> ❶ Have the students set up and perform Experiment 3 (LW). ❷ Review the terms and concepts on page 14 (LW).
Wednesday	LKOG		❶ Have students read and do the activities for Chapter 3 (LKOG) .
Thursday	HKOG		❶ Have students read and do the activities for Chapter 3 (HKOG) .
Friday	PKOG		❶ Have students read and do the activities for Chapter 3 (PKOG) .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 3

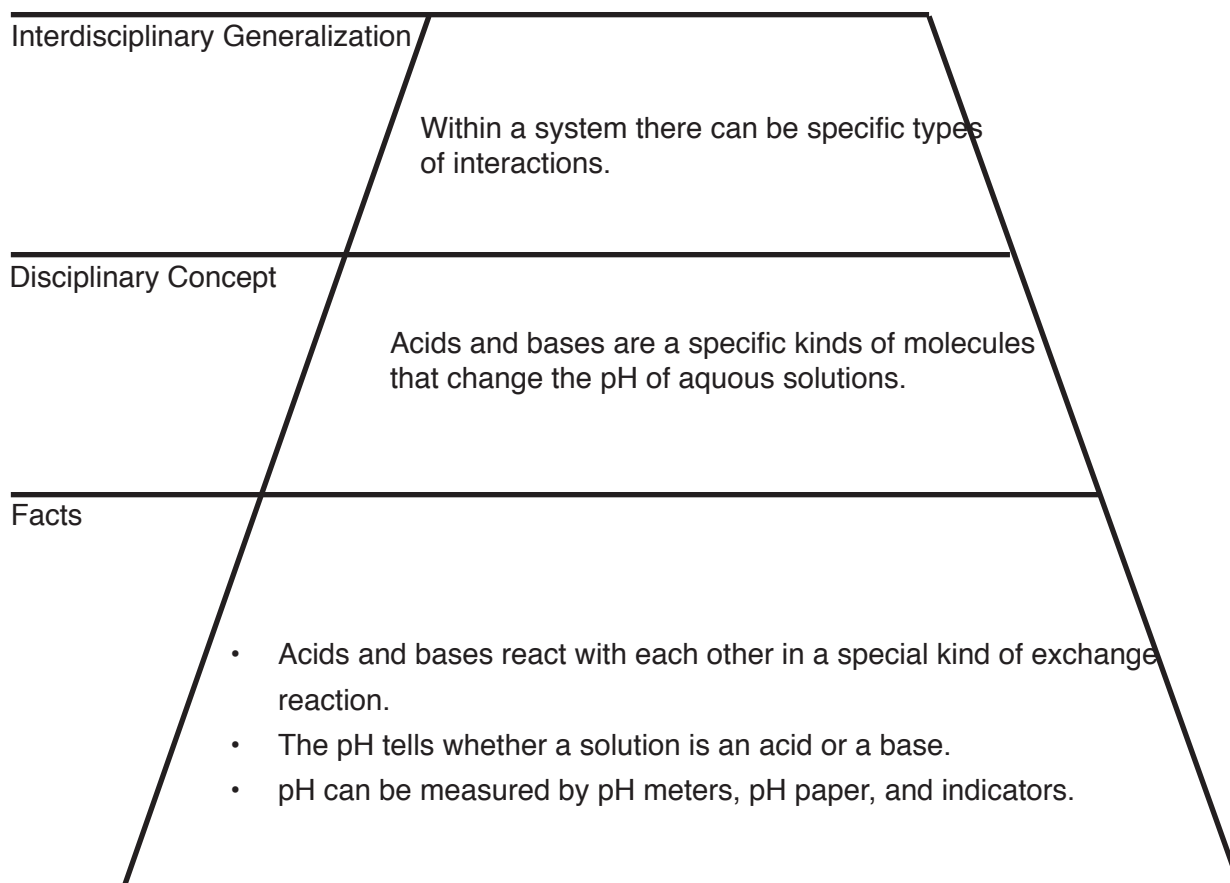
Week 7	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Discuss the conclusions the students wrote from Experiment 3. ❷ Have students think about ways to modify the experiment and have them perform any modifications they find interesting.
Tuesday	TKOG		❶ Have students read and do the activities for Chapter 3 (TKOG) .
Wednesday	AKOG		❶ Have students read and do the activities for Chapter 3 (AKOG) .
Thursday	CTKOG		❶ Have students read and do the activities for Chapter 3 (CTKOG) .
Friday	TEST 3		❶ Review Test Chapter 3 .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 3

Chapter 4:

Acids, Bases, and pH



Week 8	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Have students look through the Chemistry Level I Chapter 4 (ST) . ❷ Discuss the Summary statements on page 24 (ST) with the students. ❸ Discuss Experiment 4 with the students and gather necessary items.
Tuesday	LW		<ul style="list-style-type: none"> ❶ Have the students set up and perform Experiment 4 (LW). ❷ Review the terms and concepts on page 18 (LW).
Wednesday	LKOG		❶ Have students read and do the activities for Chapter 4 (LKOG) .
Thursday	HKOG		❶ Have students read and do the activities for Chapter 4 (HKOG) .
Friday	PKOG		❶ Have students read and do the activities for Chapter 4 (PKOG) .

Additional Reading
Math
History
Technology
Writing
Art

Standards

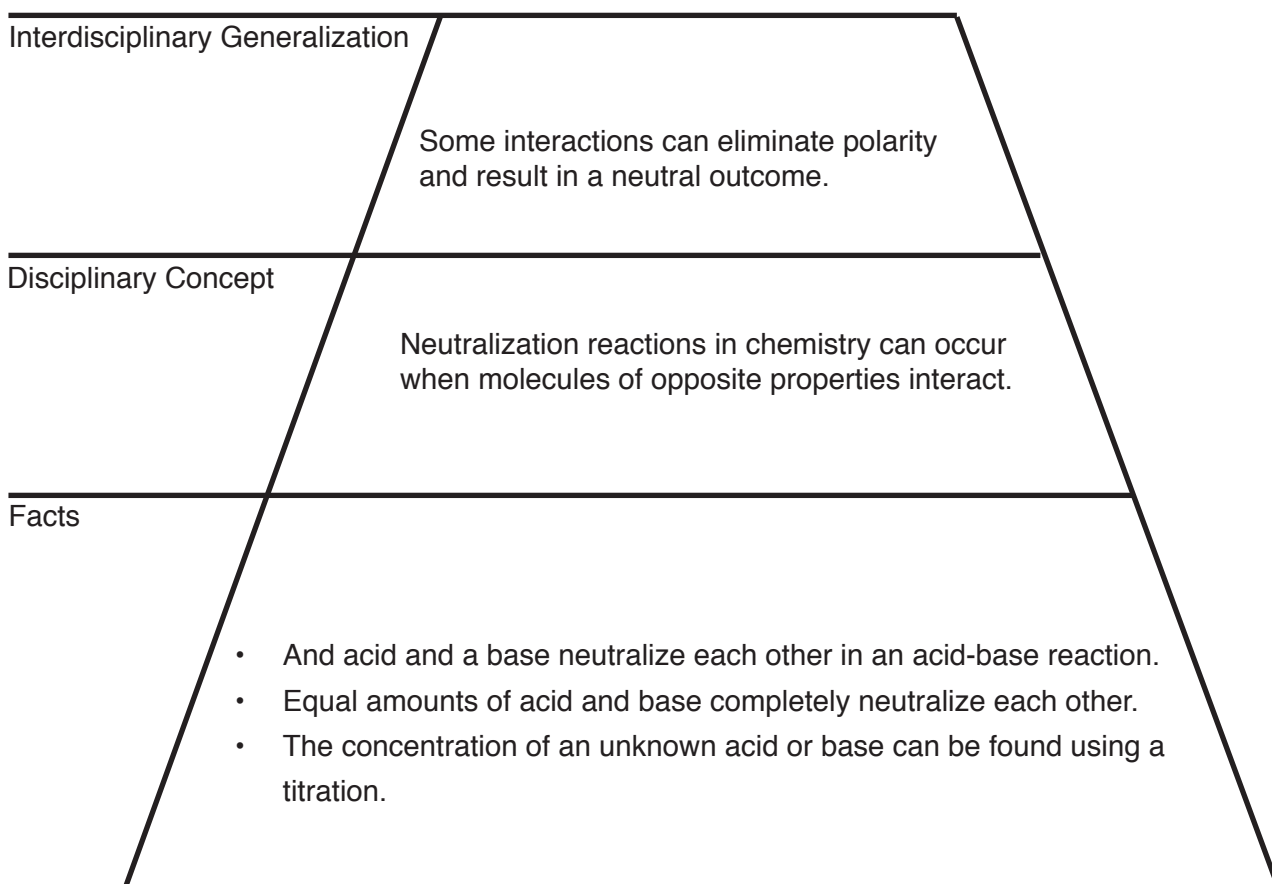
NOTES: Chapter 4

Week 9	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Discuss the conclusions the students wrote from Experiment 4. ❷ Have students think about ways to modify the experiment and have them perform any modifications they find interesting.
Tuesday	TKOG		❶ Have students read and do the activities for Chapter 4 (TKOG) .
Wednesday	AKOG		❶ Have students read and do the activities for Chapter 4 (AKOG) .
Thursday	CTKOG		❶ Have students read and do the activities for Chapter 4 (CTKOG) .
Friday	TEST 4		❶ Review Test Chapter 4 .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 4

Chapter 5: Acid-Base Neutralization



Week 10	Materials	Date	Activity
Monday	ST LW		<ol style="list-style-type: none"> ❶ Have students look through the Chemistry Level I Chapter 5 (ST) . ❷ Discuss the Summary statements on page 31 (ST) with the students. ❸ Discuss Experiment 5 with the students and gather necessary items.
Tuesday	LW		<ol style="list-style-type: none"> ❶ Have the students set up and perform Experiment 5 (LW). ❷ Review the terms and concepts on page 24 (LW).
Wednesday	LKOG		❶ Have students read and do the activities for Chapter 5 (LKOG) .
Thursday	HKOG		❶ Have students read and do the activities for Chapter 5 (HKOG) .
Friday	PKOG		❶ Have students read and do the activities for Chapter 5 (PKOG) .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

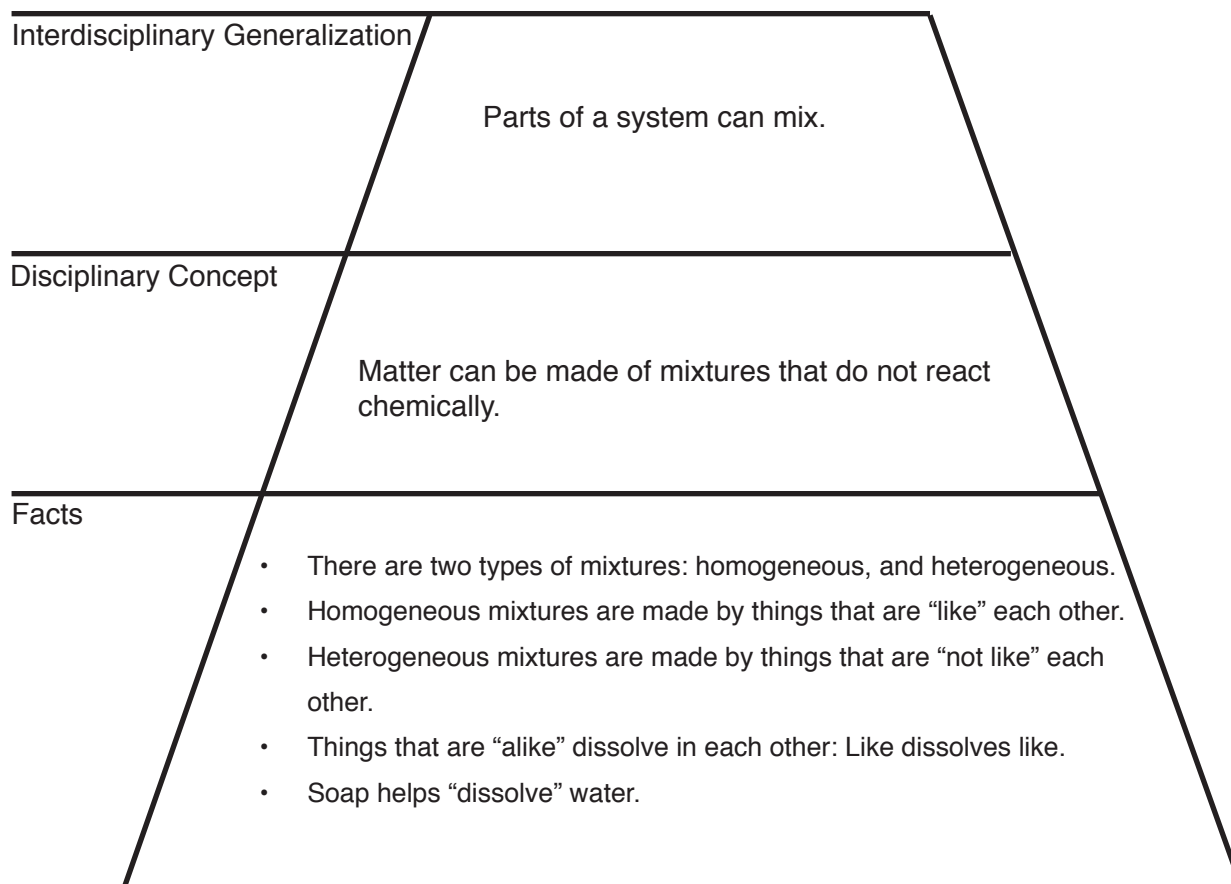
NOTES: Chapter 5

Week 11	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Discuss the conclusions the students wrote from Experiment 5. ❷ Have students think about ways to modify the experiment and have them perform any modifications they find interesting.
Tuesday	TKOG		❶ Have students read and do the activities for Chapter 5 (TKOG) .
Wednesday	AKOG		❶ Have students read and do the activities for Chapter 5 (AKOG) .
Thursday	CTKOG		❶ Have students read and do the activities for Chapter 5 (CTKOG) .
Friday	TEST 5		❶ Review Test Chapter 5 .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 5

Chapter 6: Mixtures



Week 12	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Have students look through the Chemistry Level I Chapter 6 (ST) . ❷ Discuss the Summary statements on page 39 (ST) with the students. ❸ Discuss Experiment 6 with the students and gather necessary items.
Tuesday	LW		<ul style="list-style-type: none"> ❶ Have the students set up and perform Experiment 6 (LW). ❷ Review the terms and concepts on page 29 (LW).
Wednesday	LKOG		❶ Have students read and do the activities for Chapter 6 (LKOG) .
Thursday	HKOG		❶ Have students read and do the activities for Chapter 6 (HKOG) .
Friday	PKOG		❶ Have students read and do the activities for Chapter 6 (PKOG) .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

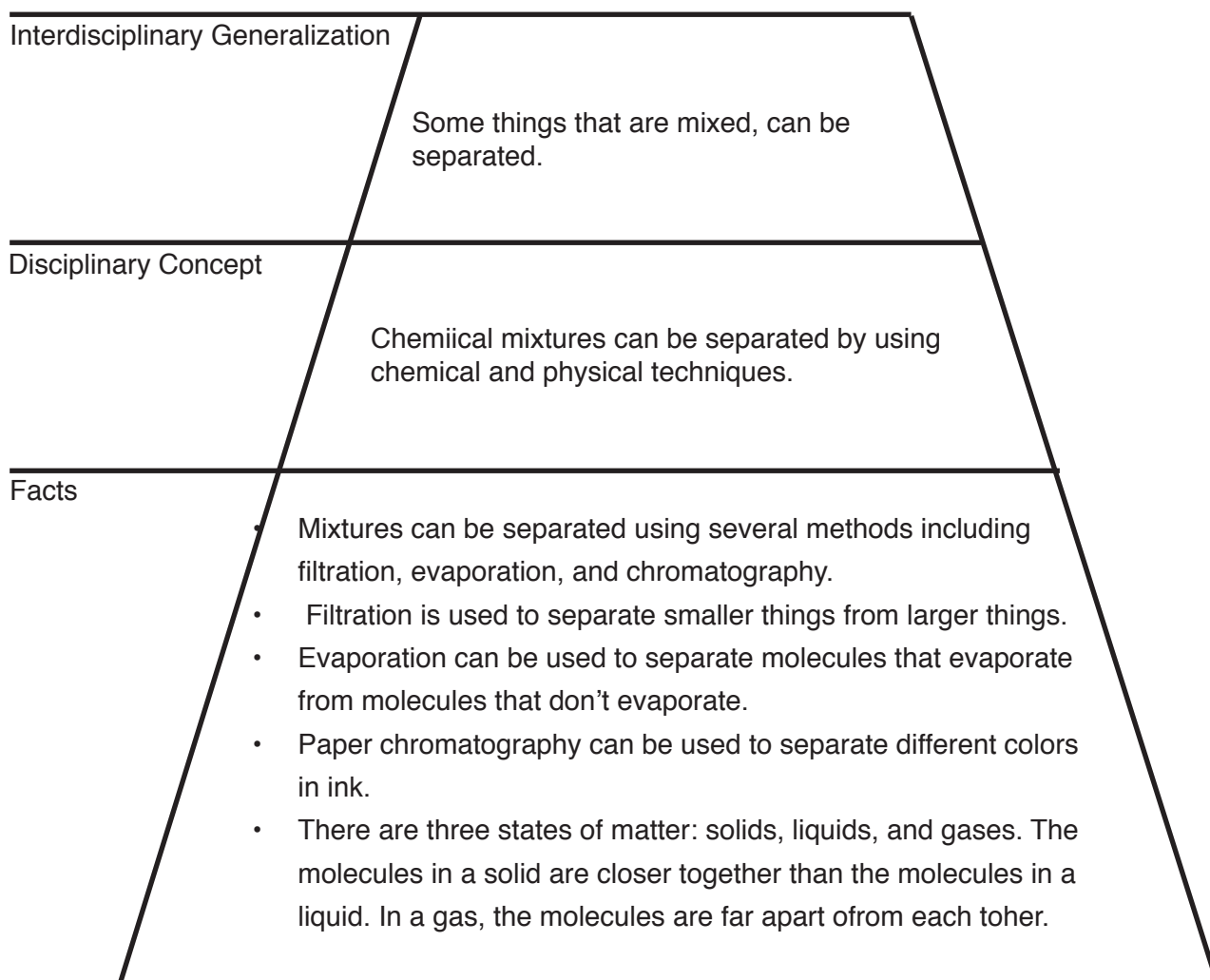
NOTES: Chapter 6

Week 13	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Discuss the conclusions the students wrote from Experiment 6. ❷ Have students think about ways to modify the experiment and have them perform any modifications they find interesting.
Tuesday	TKOG		❶ Have students read and do the activities for Chapter 6 (TKOG) .
Wednesday	AKOG		❶ Have students read and do the activities for Chapter 6 (AKOG) .
Thursday	CTKOG		❶ Have students read and do the activities for Chapter 6 (CTKOG) .
Friday	TEST 6		❶ Review Test Chapter 6 .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 6

Chapter 7: Separating Mixtures



Week 14	Materials	Date	Activity
Monday	ST LW		<ol style="list-style-type: none"> ❶ Have students look through the Chemistry Level I Chapter 7 (ST) . ❷ Discuss the Summary statements on page 24 (ST) with the students. ❸ Discuss Experiment 7 with the students and gather necessary items.
Tuesday	LW		<ol style="list-style-type: none"> ❶ Have the students set up and perform Experiment 7 (LW). ❷ Review the terms and concepts on page 18 (LW).
Wednesday	LKOG		❶ Have students read and do the activities for Chapter 7 (LKOG) .
Thursday	HKOG		❶ Have students read and do the activities for Chapter 7 (HKOG) .
Friday	PKOG		❶ Have students read and do the activities for Chapter 7 (PKOG) .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

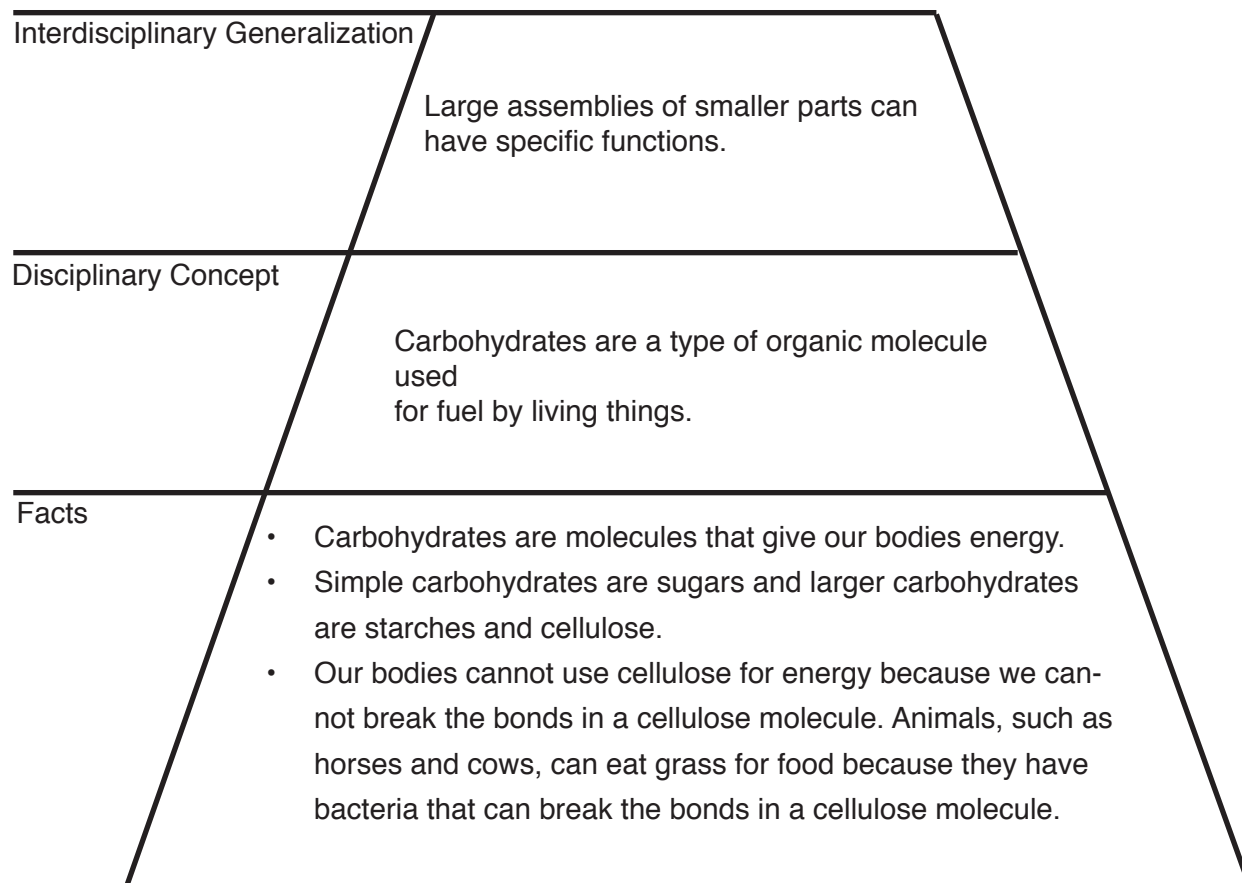
NOTES: Chapter 7

Week 15	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Discuss the conclusions the students wrote from Experiment 7. ❷ Have students think about ways to modify the experiment and have them perform any modifications they find interesting.
Tuesday	TKOG		❶ Have students read and do the activities for Chapter 7 (TKOG) .
Wednesday	AKOG		❶ Have students read and do the activities for Chapter 7 (AKOG) .
Thursday	CTKOG		❶ Have students read and do the activities for Chapter 7 (CTKOG) .
Friday	TEST 7		❶ Review Test Chapter 7 .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 7

Chapter 8: Energy Molecules



Week 16	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Have students look through the Chemistry Level I Chapter 8 (ST) . ❷ Discuss the Summary statements on page 50 (ST) with the students. ❸ Discuss Experiment 8 with the students and gather necessary items.
Tuesday	LW		<ul style="list-style-type: none"> ❶ Have the students set up and perform Experiment 8 (LW). ❷ Review the terms and concepts on page 40 (LW).
Wednesday	LKOG		❶ Have students read and do the activities for Chapter 8 (LKOG) .
Thursday	HKOG		❶ Have students read and do the activities for Chapter 8 (HKOG) .
Friday	PKOG		❶ Have students read and do the activities for Chapter 8 (PKOG) .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

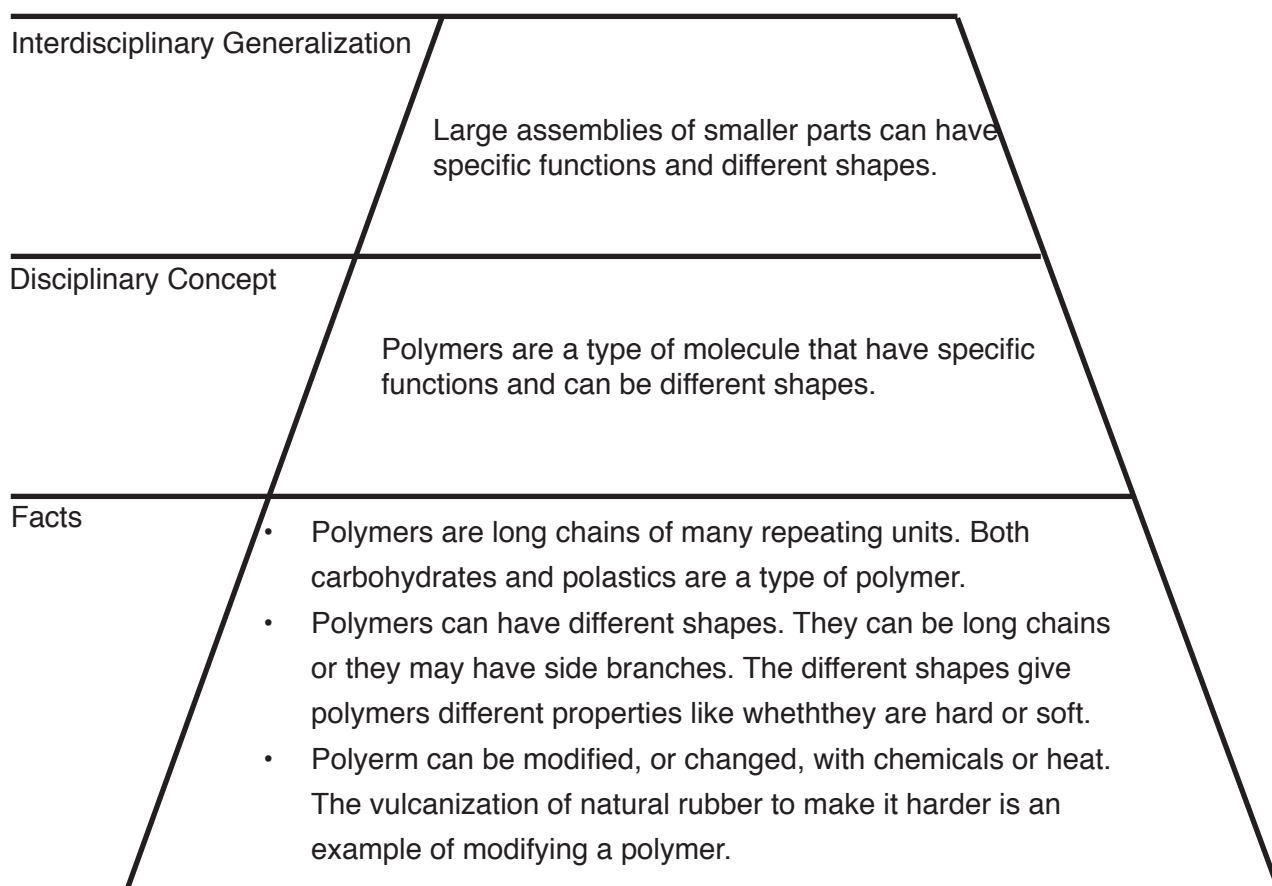
NOTES: Chapter 8

Week 17	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Discuss the conclusions the students wrote from Experiment 8. ❷ Have students think about ways to modify the experiment and have them perform any modifications they find interesting.
Tuesday	TKOG		❶ Have students read and do the activities for Chapter 8 (TKOG) .
Wednesday	AKOG		❶ Have students read and do the activities for Chapter 8 (AKOG) .
Thursday	CTKOG		❶ Have students read and do the activities for Chapter 8 (CTKOG) .
Friday	TEST 8		❶ Review Test Chapter 8 .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 8

Chapter 9: Polymers



Week 18	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Have students look through the Chemistry Level I Chapter 9 (ST) . ❷ Discuss the Summary statements on page 55 (ST) with the students. ❸ Discuss Experiment 9 with the students and gather necessary items.
Tuesday	LW		<ul style="list-style-type: none"> ❶ Have the students set up and perform Experiment 9 (LW). ❷ Review the terms and concepts on page 45 (LW).
Wednesday	LKOG		❶ Have students read and do the activities for Chapter 9 (LKOG) .
Thursday	HKOG		❶ Have students read and do the activities for Chapter 9 (HKOG) .
Friday	PKOG		❶ Have students read and do the activities for Chapter 9 (PKOG) .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

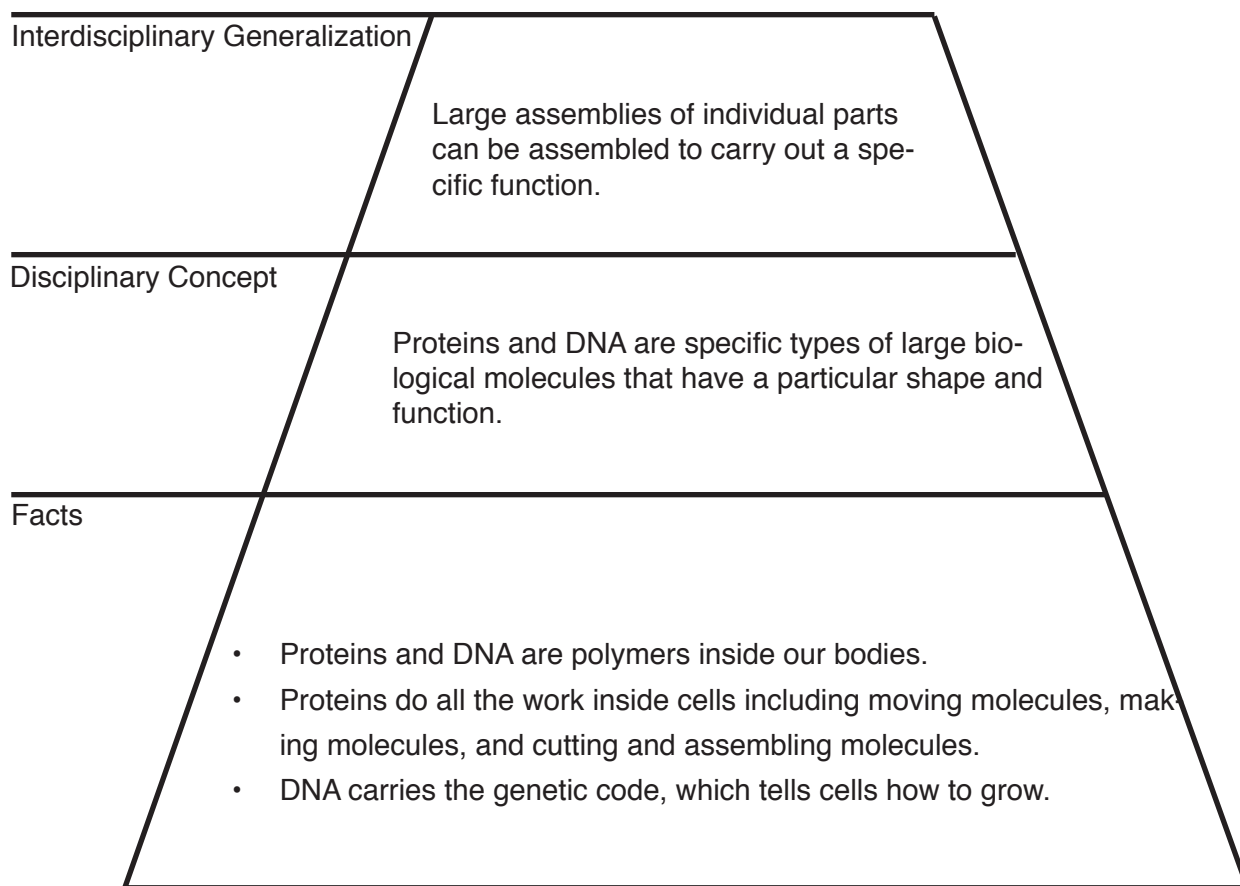
NOTES: Chapter 9

Week 19	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Discuss the conclusions the students wrote from Experiment 9. ❷ Have students think about ways to modify the experiment and have them perform any modifications they find interesting.
Tuesday	TKOG		❶ Have students read and do the activities for Chapter 9 (TKOG) .
Wednesday	AKOG		❶ Have students read and do the activities for Chapter 9 (AKOG) .
Thursday	CTKOG		❶ Have students read and do the activities for Chapter 9 (CTKOG) .
Friday	TEST 9		❶ Review Test Chapter 9 .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 9

Chapter 10: Biological Polymers



Week 20	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Have students look through the Chemistry Level I Chapter 10 (ST) . ❷ Discuss the Summary statements on page 64 (ST) with the students. ❸ Discuss Experiment 10 with the students and gather necessary items.
Tuesday	LW		<ul style="list-style-type: none"> ❶ Have the students set up and perform Experiment 10 (LW). ❷ Review the terms and concepts on page 49 (LW).
Wednesday	LKOG		❶ Have students read and do the activities for Chapter 10 (LKOG) .
Thursday	HKOG		❶ Have students read and do the activities for Chapter 10 (HKOG) .
Friday	PKOG		❶ Have students read and do the activities for Chapter 10 (PKOG) .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 10

Week 21	Materials	Date	Activity
Monday	ST LW		<ul style="list-style-type: none"> ❶ Discuss the conclusions the students wrote from Experiment 10. ❷ Have students think about ways to modify the experiment and have them perform any modifications they find interesting.
Tuesday	TKOG		❶ Have students read and do the activities for Chapter 10 (TKOG) .
Wednesday	AKOG		❶ Have students read and do the activities for Chapter 10 (AKOG) .
Thursday	CTKOG		❶ Have students read and do the activities for Chapter 10 (CTKOG) .
Friday	TEST 10		❶ Review Test Chapter 10 .

Additional Reading	Standards
Math	
History	
Technology	
Writing	
Art	

NOTES: Chapter 10

REVIEW

NOTES

Week 20	Materials	Date	Activity
Monday			<ul style="list-style-type: none"> ❶ Have the students review the material covered in the student text. ❷ Have the students review the Tests 1-10 and generate a study sheet of any questions they may have missed.
Tuesday			<ul style="list-style-type: none"> ❶ Have the students review the study sheet. Have them review the text or workbook materials for any questions they are not answering correctly. .
Wednesday			<ul style="list-style-type: none"> ❶ Have the students create their own test based on questions from the study sheet. ❷ Have the students take the test they just created noting what they still may be missing.
Thursday			<ul style="list-style-type: none"> ❶ Have the students take a break.
Friday	FINAL		<ul style="list-style-type: none"> ❶ Take the FINAL exam

	Test Scores	NOTES
Chapter 1		
Chapter 2		
Chapter 3		
Chapter 4		
Chapter 5		
Chapter 6		
Chapter 7		
Chapter 8		
Chapter 9		
Chapter 10		
FINAL		

