

Power Vocabulary



Chemistry

WHAT IS POWER VOCABULARY?

ower Vocabulary is a systematic and individualized approach to vocabulary development that enables teachers to assist students to improve their reading comprehension skills. Power Vocabulary consists of two word groups—specialized and general-usage words.

Specialized words label concepts that support subject matter. These words are the technical vocabulary of a content area. In science, specialized words include biodiversity and predator. In history, specialized words include hieroglyphic and chariot. Specialized vocabulary also includes words we use every day that take on specialized meanings in a particular content area. For example, the word bill takes on different meanings when we talk about money (dollar bill or electric bill) than when we talk about government (a bill that becomes an act or a law).

General-usage words are the words that have widely acknowledged meanings and that hold the content of a passage together. These words are selected because some readers may not be familiar with them. Examples of general-usage words are morose and diligent.

Fifteen Power Vocabulary words

PAGES IN THIS POWER VOCABULARY BOOKLET

- 1 What Is Power Vocabulary?

 How are the 15 Power Vocabulary words selected from this KIDS DISCOVER title and why should students know them?
- 2 Word Card Activity Ideas A variety of teaching strategies and great activities students can do with the word cards on pages 3–6.
- 3-6 Word Cards Students can cut out and use these cards to learn more about the 15 Power Vocabulary words.
- 7–8 Dictionary List View the 15 Power Vocabulary words with definitions in one list.
 - 9 Crossword Puzzle . . . In this crossword, the definitions are the clues and the Power Vocabulary words are the answers.
 - 10 Word Find Students can focus on the spellings of the Power Vocabulary words with this word find—plus solve a hidden message!
 - 11 Matching Students will match each Power Vocabulary word with its definition.
- 13–16 Answer Keys Answer keys for the crossword puzzle, word find, matching, and sentences blackline masters.

have been identified for this **KIDS DISCOVER** title. Use the word cards or select a few blackline masters to preview the vocabulary words to help students be more confident and read more fluently as they read these words in context. Or use the cards or masters to review words after students have read **KIDS DISCOVER**.

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POWER VOCABULARY WORD CARD ACTIVITY IDEAS

Use the vocabulary cards (pages 3–6 of this Power Vocabulary booklet) and the following activities to introduce or review some Power Vocabulary words students will encounter while reading KIDS DISCOVER *Chemistry*.



Words You Know and Words to Know

◆ Ask students to draw a four-column chart and label the columns "I don't know," "I've seen or heard but don't know the meaning," "I think I know the meaning," and "I know the meaning." Present each word and its sample sentence to students. Ask them to write the word in the column that shows how well they know the meaning of the word.

Memory Game

◆ Copy the word and definition pages on separate sheets of paper. Cut out the cards and place them facedown on a table. Have students play a memory game by matching words and definitions. Students should read the words and definitions aloud each time they have a match to reinforce the pronunciation and definition. Challenge: Use correction fluid or tape to cover the vocabulary words on the definition cards.

Matching

◆ Copy the word and definition pages on separate sheets of paper and cut out the cards. Paste the word cards around the edge of a tagboard. Ask students to attach the definitions to their words using clothespins.

Personal Dictionary

◆ Copy the word and definition pages back-to-back for each student. Have students cut out the cards and place them in alphabetical order. To make personal dictionaries, students can staple the cards together in a flipbook or place them in a file box.

New Word Cards

◆ Have students create their own vocabulary cards for unfamiliar general-usage or content words as they read KIDS DISCOVER.

Skimming the Text

◆ Help students practice skimming text. Read a sentence or word and the page number in the magazine where it is located. (The sentences and page numbers are provided on the definition side of the cards.) Model how to skim the page for the word or sentence. Then have students practice skimming by looking for other words or sentences.

Challenge: Give students a sentence without the page number. Encourage them to skim the magazine for the appropriate topic pages and then skim for the word.

Dictionary Skills

◆ Practice dictionary skills by asking students to find the guide words on the page where a Power Vocabulary word is located in a dictionary. Also ask students to search for multiple meanings of words, synonyms, antonyms, and other word forms or parts of speech for the word.

Journal Writing

◆ After working with the words and definitions, encourage students to use the words when writing essays and in their journals.

Dangling Definitions

◆ On sturdy paper, make enlarged copies of the word and definition cards printed back-to-back. Punch a hole in the top center of each card and attach to the ceiling with string.❖

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abundant

(uh-**bun**-duhnt)



adjective

KIDS DISCOVER Chemistry

anagram

(an-uh-gram)



KIDS DISCOVER Chemistry

designate

(dez-ig-nayt)





KIDS DISCOVER Chemistry

emit

(i-mit)

verb



KIDS DISCOVER Chemistry

essential

(uh-sen-shuhl)





KIDS DISCOVER Chemistry

flammable

(flam-uh-buhl)

adjective



KIDS DISCOVER Chemistry

fluid

(floo-id)

adjective

KIDS DISCOVER Chemistry

formula

(for-myuh-luh)

noun



KIDS DISCOVER Chemistry

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ANAGRAM: word or phrase formed by rearranging the letters of another word or phrase

- ★ The words *they see* are an **anagram** for *the eyes*.
- ★ Spandex (an **anagram** of expands) is a fabric invented by a chemist in 1959. (p. 4)

EMIT: to give off

- ★ The sun and other stars **emit** heat and light.
- ★ Bunsen also developed the spectroscope, an instrument that can identify a substance by the colors of light it **emits** when heated and glowing. (p. 6)

FLAMMABLE: easily set on fire

- ★ Flammable materials, such as paper, cloth, and wood, burn easily.
- ★ Balloons and blimps used to be filled with hydrogen because it is less dense than air, but now helium is used because hydrogen is very flammable. (p. 5)

FORMULA: a combination of symbols used to show what makes up a chemical compound

- ★ The chemical **formula** for water is H_2O .
- ★ Originally made from tree sap, today's gum is made by a **formula** created by chemists. (p. 12)

ABUNDANT: plentiful; in great numbers

- ★ The river once had an **abundant** supply of fish.
- ★ Hydrogen, the most **abundant** element in the universe, is the sun's fuel. (p. 5)

DESIGNATE: to name

- ★ The fourth Thursday in November is **designated** Thanksgiving Day in the United States.
- ★ IYC 2011 was designated by the United Nations as a worldwide celebration of chemistry—its achievements and contributions to the well-being of all people. (p. 9)

ESSENTIAL: very necessary

- ★ Fruits and vegetables are an **essential** part of a healthful diet.
- ★ The Bunsen burner lets scientists make the flame hotter or cooler by changing how much gas and air the burner uses and is an essential piece of laboratory equipment. (p. 6)

FLUID: flowing; being able to flow

- ★ Both liquids and gases are **fluid**.
- \bigstar Why is water **fluid**? (p. 2)

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intensity

(in-tens-uh-tee)



noun

KIDS DISCOVER Chemistry

interior

(in-tir-ee-uhr)

noun



KIDS DISCOVER Chemistry

larva

(lar-vuh)

noun



KIDS DISCOVER Chemistry

minimize

(min-uh-myz)

verb



KIDS DISCOVER Chemistry

porous

(por-us)

adjective



KIDS DISCOVER Chemistry

reaction

(ree-ak-shun)

noun



KIDS DISCOVER Chemistry

solution

(suh-loo-shun)

noun

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VOCABULARY CARDS

INTERIOR: inside; the inner part

- ★ The building's **interior** is being remodeled to make more offices.
- ★ It comes from Earth's interior. (p. 6)

MINIMIZE: to limit or reduce as much as possible

- ★ Getting a flu vaccine can help **minimize** the chances of getting the flu.
- ★ In all cases green chemistry requires that the processes and products minimize harm to human health and the environment. (p. 16)

REACTION: chemical change in which substances produce other substances

- ★ Mixing vinegar and baking soda results in a chemical **reaction** that produces carbon dioxide and water.
- ★ The chemical **reaction** results in a purple color to reveal the print. (p. 3)

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INTENSITY: amount of strength

- ★ The **intensity** of the sunlight made me squint.
- ★ This reduces the **intensity** of the signal that your brain interprets as pain. (p. 14)

LARVA: the wormlike form of an insect before it becomes an adult

- ★ A caterpillar is the **larva** of a butterfly or moth.
- ★ The spinosad was then able to release slowly and control the mosquito larvae in the water. (p. 17)

POROUS: full of tiny holes that gases or liquids can pass through

- ★ Water can seep through paper because the paper is **porous**.
- ★ Since glass and plastic are not **porous**, the oil from a person's skin remains on the surface of these materials. (p. 3)

SOLUTION: mixture in which the molecules of the combining substances are evenly distributed

- ★ Lemonade is a **solution** of lemon juice, water, and sugar.
- ★ Investigators spray a **solution** of luminol, hydrogen peroxide, and other chemicals where they suspect the presence of blood. (p. 16)

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Chemistry Dictionary List

ABUNDANT

Pronunciation (uh-bun-duhnt)

Part of Speech adjective

Definition plentiful; in great numbers

★ The river once had an abundant supply of fish.

Word Used in KIDS DISCOVER

★ Hydrogen, the most **abundant** element in the universe, is the sun's fuel. (p. 5)

ANAGRAM

Pronunciation (an-uh-gram)

Part of Speech noun

Definition word or phrase formed by rearranging the letters of another word or phrase

★ The words *they see* are an **anagram** for *the eyes*.

Word Used in KIDS DISCOVER

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DESIGNATE

Pronunciation (dez-ig-nayt)

Part of Speech verb

Definition to name

★ The fourth Thursday in November is **designated** Thanksgiving Day in the United States.

Word Used in KIDS DISCOVER

★ IYC 2011 was designated by the United Nations as a worldwide celebration of chemistry—its achievements and contributions to the well-being of all people. (p. 9)

EMIT

Pronunciation (i-mit)

Part of Speech verb

Definition to give off

★ The sun and other stars emit heat and light.

Word Used in KIDS DISCOVER

★ Bunsen also developed the spectroscope, an instrument that can identify a substance by the colors of light it **emits** when heated and glowing. (p. 6)

ESSENTIAL

Pronunciation (uh-sen-shuhl)

Part of Speech adjective

Definition very necessary

★ Fruits and vegetables are an **essential** part of a healthful diet.

Word Used in KIDS DISCOVER

★ The Bunsen burner lets scientists make the flame hotter or cooler by changing how much gas and air the burner uses and is an essential piece of laboratory equipment. (p. 6)

FLAMMABLE

Pronunciation (flam-uh-buhl)

Part of Speech adjective

Definition easily set on fire

★ Flammable materials, such as paper, cloth, and wood, burn easily.

Word Used in KIDS DISCOVER

★ Balloons and blimps used to be filled with hydrogen because it is less dense than air, but now helium is used because hydrogen is very flammable. (p. 5)

FLUID

Pronunciation (floo-id)

Part of Speech adjective

Definition flowing; being able to flow

★ Both liquids and gases are fluid.

Word Used in KIDS DISCOVER

 \bigstar Why is water fluid? (p. 2)

FORMULA

Pronunciation (for-myuh-luh)

Part of Speech noun

Definition a combination of symbols used to show what makes up a chemical compound

★ The chemical **formula** for water is H_2O .

Word Used in KIDS DISCOVER

★ Originally made from tree sap, today's gum is made by a **formula** created by chemists. (p. 12)



Chemistry Dictionary List (continued)

INTENSITY

Pronunciation (in-tens-uh-tee)

Part of Speech noun

Definition amount of strength

★ The **intensity** of the sunlight made me squint.

Word Used in KIDS DISCOVER

★ This reduces the **intensity** of the signal that your brain interprets as pain. (p. 14)

INTERIOR

Pronunciation (in-tir-ee-uhr)

Part of Speech noun

Definition inside; the inner part

★ The building's **interior** is being remodeled to make more offices.

Word Used in KIDS DISCOVER

★ It comes from Earth's interior. (p. 6)

LARVA

Pronunciation (lar-vuh)

Part of Speech noun

Definition the wormlike form of an insect before it becomes an adult

★ A caterpillar is the **larva** of a butterfly or moth.

Word Used in KIDS DISCOVER

★ The spinosad was then able to release slowly and control the mosquito larvae in the water. (p. 17)

MINIMIZE

Pronunciation (min-uh-myz)

Part of Speech verb

Definition to limit or reduce as much as possible

★ Getting a flu vaccine can help **minimize** the chances of getting the flu.

Word Used in KIDS DISCOVER

★ In all cases green chemistry requires that the processes and products minimize harm to human health and the environment. (p. 16)

POROUS

Pronunciation (por-us)

Part of Speech adjective

Definition full of tiny holes that gases or liquids can pass through

★ Water can seep through paper because the paper is **porous**.

Word Used in KIDS DISCOVER

★ Since glass and plastic are not **porous**, the oil from a person's skin remains on the surface of these materials. (p. 3)

REACTION

Pronunciation (ree-ak-shun)

Part of Speech noun

Definition chemical change in which substances produce other substances

★ Mixing vinegar and baking soda results in a chemical **reaction** that produces carbon dioxide and water.

Word Used in KIDS DISCOVER

★ The chemical **reaction** results in a purple color to reveal the print.

SOLUTION

Pronunciation (suh-loo-shun)

Part of Speech noun

Definition mixture in which the molecules of the combining substances are evenly distributed

★ Lemonade is a **solution** of lemon juice, water, and sugar.

Word Used in KIDS DISCOVER

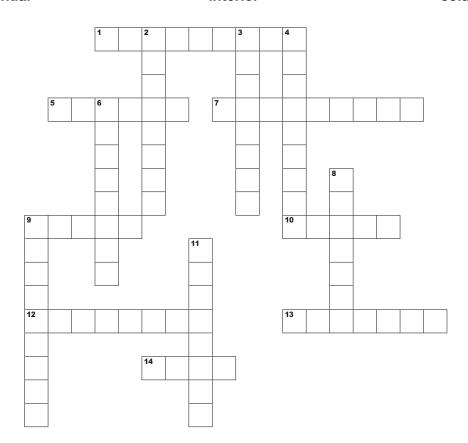
★ Investigators spray a **solution** of luminol, hydrogen peroxide, and other chemicals where they suspect the presence of blood. (p. 16)



Name	Date
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Crossword

abundant flammable larva
anagram fluid minimize
designate formula porous
emit intensity reaction
essential interior solution



Across

- 1. to name
- **5.** full of tiny holes that gases or liquids can pass through
- **7.** amount of strength
- **9.** flowing; being able to flow
- **10.** the wormlike form of an insect before it becomes an adult
- **12.** to limit or reduce as much as possible
- **13.** word or phrase formed by rearranging the letters of another word or phrase
- 14. to give off

Down

- **2.** mixture in which the molecules of the combining substances are evenly distributed
- **3.** plentiful; in great numbers
- **4.** very necessary
- **6.** chemical change in which substances produce other substances
- **8.** a combination of symbols used to show what makes up a chemical compound
- **9.** easily set on fire
- 11. inside; the inner part

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3

Word Find

Circle each word from the box in the letter grid below. The words are up and down, across, and backwards. Then, going across each row starting at the top left, place each unused letter on a blank until you reveal the answer to the question.

ABUNDANT	FLAMMABLE	LARVA
ANAGRAM	FLUID	MINIMIZE
DESIGNATE	FORMULA	POROUS
EMIT	INTENSITY	REACTION
ESSENTIAL	INTERIOR	SOLUTION

L	S	L	Α	I	Т	Ν	Ε	S	S	Ε	М	М	Α
Α	В	U	Ν	D	Α	Ν	Т	I	M	Ε	Α	1	L
R	Ε	Т	Α	N	G	I	S	Ε	D	F	R	N	U
٧	Υ	T	I	S	Ν	Ε	T	Ν	I	L	G	I	M
Α	I	N	T	Ε	R	I	0	R	L	U	Α	М	R
I	F	L	Α	M	М	Α	В	L	Ε	I	N	I	0
M	S	0	L	U	Т	I	0	N	Ε	D	Α	Z	F
Р	O	R	0	U	S	Ν	0	1	Т	С	Α	Ε	R

What anagram for *smile* can you make with borax, glue, and water?



Name	Date	

Matching

For each vocabulary word in the left column, locate its definition in the right column. Write the number of the correct definition in the blank before the word.

abundant	1. word or phrase formed by rearranging the letters of another word or phrase
 anagram	2. the wormlike form of an insect before it becomes an adult
 designate	3. very necessary
 emit	4. to limit or reduce as much as possible
 essential	5. amount of strength
 flammable	6. to give off
 fluid	7. inside; the inner part
formula	8. mixture in which the molecules of the combining substances are evenly distributed
 intensity	9. plentiful; in great numbers
 interior	10. chemical change in which substances produce other substances
 larva	11. easily set on fire
 minimize	12. full of tiny holes that gases or liquids can pass through
porous	13. a combination of symbols used to show what makes up a chemical compound
 reaction	14. to name
solution	15. flowing; being able to flow



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3

Sentences

Fill in each blank with the word from the box that best completes the sentence.

flammable	larva
fluid	minimize
formula	porous
	reaction
•	solution
	flammable fluid formula intensity interior

1.	Green chemistry tries to produce solution on the environment.	ntions that will	negative effects
2.	Because they are not	, plastic containers can be	e used to hold water.
3.	NaCl is the chemical	for common table salt.	
4.	The of a mor	narch butterfly is a striped caterpi	llar.
5.	Salt water is a	of salt and water.	
6.	The word <i>team</i> is an	for the words tame, mean	t, and mate.
7.	The United Nations has	2011 as the Internatio	nal Year of Chemistry.
8.	The moon reflects the light	by the sun.	
9.	Rust is a result of a chemical	of iron and oxyg	gen when water is present
10.	Because it is	, water can be poured from one c	ontainer into another.
11.	The of the St	tatue of Liberty has 353 steps lead	ding to its crown.
12.	The photometer is a tool that is used	to measure the	of light.
13.	Nitrogen is the most	gas in Earth's air.	
14.	Food, exercise, and sleep are	to good health.	
15.	substances, s	such as paper and wood, burn easi	ilv.



Name ANSWER KEY

Date						

Crossword

abundant flammable larva
anagram fluid minimize
designate formula porous
emit intensity reaction
essential interior solution

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Across

- 1. to name
- **5.** full of tiny holes that gases or liquids can pass through
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- **10.** the wormlike form of an insect before it becomes an adult
- **12.** to limit or reduce as much as possible
- **13.** word or phrase formed by rearranging the letters of another word or phrase
- 14. to give off

Down

- **2.** mixture in which the molecules of the combining substances are evenly distributed
- **3.** plentiful; in great numbers
- **4.** very necessary
- **6.** chemical change in which substances produce other substances
- **8.** a combination of symbols used to show what makes up a chemical compound
- **9.** easily set on fire
- 11. inside; the inner part



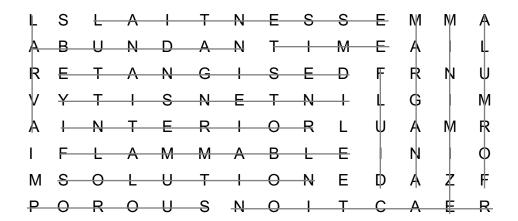
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Date	
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Word Find

Circle each word from the box in the letter grid below. The words are up and down, across, and backwards. Then, going across each row starting at the top left, place each unused letter on a blank until you reveal the answer to the question.

ABUNDANT	FLAMMABLE	LARVA
ANAGRAM	FLUID	MINIMIZE
DESIGNATE	FORMULA	POROUS
EMIT	INTENSITY	REACTION
ESSENTIAL	INTERIOR	SOLUTION



What anagram for *smile* can you make with borax, glue, and water?

SLIME



Name ANSWER KEY

Date	

Matching

For each vocabulary word in the left column, locate its definition in the right column. Write the number of the correct definition in the blank before the word.

9	_ abundant	1. word or phrase formed by rearranging the letters of another word or phrase
1	_ anagram	2. the wormlike form of an insect before it becomes an adult
14	_ designate	3. very necessary
6	_ emit	4. to limit or reduce as much as possible
3	_ essential	5. amount of strength
11	_ flammable	6. to give off
15	_ fluid	7. inside; the inner part
13	_ formula	8. mixture in which the molecules of the combining substances are evenly distributed
5	_ intensity	9. plentiful; in great numbers
7	_ interior	10. chemical change in which substances produce other substances
2	_ larva	11. easily set on fire
4	_ minimize	12. full of tiny holes that gases or liquids can pass through
12	_ porous	13. a combination of symbols used to show what makes up a chemical compound
10	_ reaction	14. to name
8	_ solution	15. flowing; being able to flow



Name ANSWER KEY

Date

Sentences

Fill in each blank with the word from the box that best completes the sentence.

flammable	larva
fluid	minimize
formula	porous
	reaction
•	solution
	flammable fluid formula intensity interior

1.	Green chemistry tries to produce solutions that on the environment.	at will <u>minimize</u>	negative effects
2.	Because they are not	plastic containers can be used	d to hold water.
3.	NaCl is the chemicalformula	for common table salt.	
4.	The <u>larva</u> of a monarch but	tterfly is a striped caterpillar.	
5.	Salt water is a <u>solution</u> of salt	and water.	
6.	The word <i>team</i> is an anagram	for the words tame, meat, and	mate.
7.	The United Nations has designated	2011 as the International Y	ear of Chemistry.
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