

# Chemistry

## WHAT IS POWER VOCABULARY?

**P**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 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**.

### 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.

#### 12 Sentences

Students will complete each sentence with a Power Vocabulary word.

#### 13–16 Answer Keys

Answer keys for the crossword puzzle, word find, matching, and sentences blackline masters.



# abundant

(uh-**bun**-duhnt)

adjective



KIDS DISCOVER *Chemistry*

# anagram

(an-uh-gram)

noun



KIDS DISCOVER *Chemistry*

# designate

(dez-ig-nayt)

verb



KIDS DISCOVER *Chemistry*

# emit

(i-mit)

verb



KIDS DISCOVER *Chemistry*

# essential

(uh-**sen**-shuhl)

adjective



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*

**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<sub>2</sub>O.
- ★ *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**.
- ★ *Why is water **fluid**? (p. 2)*

# 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



KIDS DISCOVER *Chemistry*

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KIDS DISCOVER *Chemistry*

**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)*



# 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**

★ *Spandex (an **anagram** of expands) is a fabric invented by a chemist in 1959. (p. 4)*

## 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**

★ *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<sub>2</sub>O.

**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)*



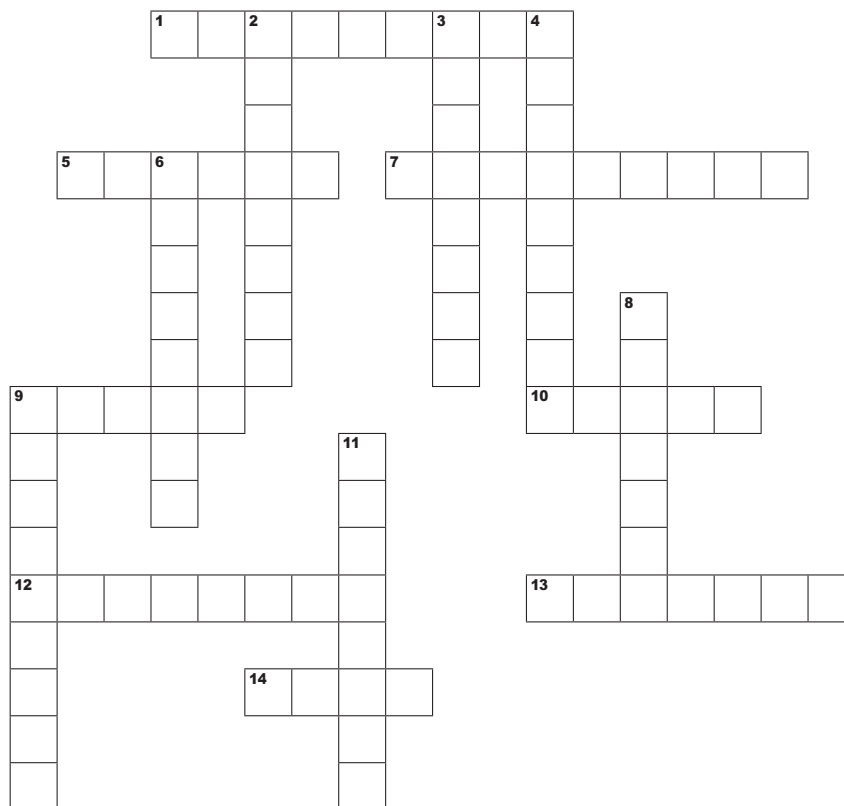
Name \_\_\_\_\_ Date \_\_\_\_\_

## Crossword

abundant  
anagram  
designate  
emit  
essential

flammable  
fluid  
formula  
intensity  
interior

larva  
minimize  
porous  
reaction  
solution



### Across

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

### Down

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



Name \_\_\_\_\_ Date \_\_\_\_\_

## 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 A I T N E S S E M M A  
A B U N D A N T I M E A I L  
R E T A N G I S E D F R N U  
V Y T I S N E T N I L G I M  
A I N T E R I O R L U A M R  
I F L A M M A B L E I N I O  
M S O L U T I O N E D A Z F  
P O R O U S N O I T C A E 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  |



Name \_\_\_\_\_ Date \_\_\_\_\_

## Sentences

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

abundant	flammable	larva
anagram	fluid	minimize
designated	formula	porous
emitted	intensity	reaction
essential	interior	solution

1. Green chemistry tries to produce solutions that will \_\_\_\_\_ negative effects on the environment.
2. Because they are not \_\_\_\_\_, plastic containers can be used to hold water.
3. NaCl is the chemical \_\_\_\_\_ for common table salt.
4. The \_\_\_\_\_ of a monarch butterfly is a striped caterpillar.
5. Salt water is a \_\_\_\_\_ of salt and water.
6. The word *team* is an \_\_\_\_\_ for the words *tame*, *meat*, and *mate*.
7. The United Nations has \_\_\_\_\_ 2011 as the International Year of Chemistry.
8. The moon reflects the light \_\_\_\_\_ by the sun.
9. Rust is a result of a chemical \_\_\_\_\_ of iron and oxygen when water is present.
10. Because it is \_\_\_\_\_, water can be poured from one container into another.
11. The \_\_\_\_\_ of the Statue of Liberty has 353 steps leading 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, such as paper and wood, burn easily.

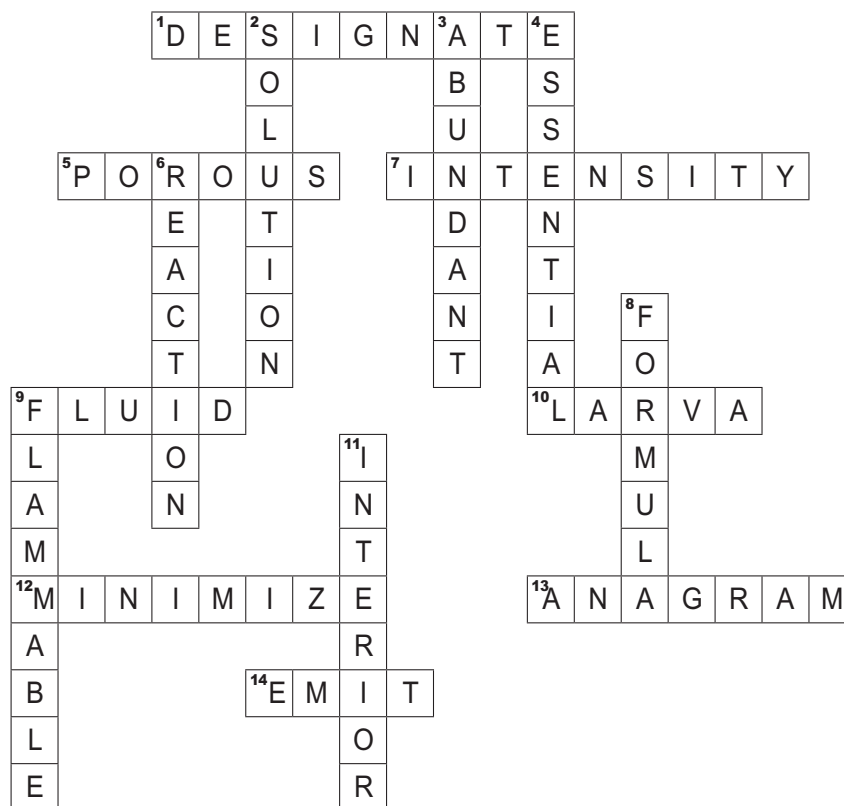
Name **ANSWER KEY** Date \_\_\_\_\_

## Crossword

abundant  
anagram  
designate  
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### Across

- to name
- full of tiny holes that gases or liquids can pass through
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### Down

- mixture in which the molecules of the combining substances are evenly distributed
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Name **ANSWER KEY** Date \_\_\_\_\_

## 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 A I T N E S S E M M A  
A B U N D A N T I M E A L  
R E T A N G I S E D F R N U  
V Y T I S N E T N I L G M  
A I N T E R I O R L U A M R  
I F L A M M A B L E I N O  
M S O L U T I O N E D A Z F  
P O R O U S N O I T C A E R

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

S L I M E



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.

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

abundant	flammable	larva
anagram	fluid	minimize
designated	formula	porous
emitted	intensity	reaction
essential	interior	solution

1. Green chemistry tries to produce solutions that will minimize negative effects on the environment.
2. Because they are not porous, plastic containers can be used to hold water.
3. NaCl is the chemical formula for common table salt.
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