

Middle School and High School

**SCIENCE**

# WORD SORTS

*Brain Efficient Word Sorts*

*Using the Brain's Natural Ability for  
Patterns, Rhymes, and Rhythms  
to Improve Reading and Spelling*

**irrigation**  
**precipitation**  
**evaporation**  
**condensation**

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# Teacher's Guide

## Introduction

Science textbooks contain some of the most difficult words for students to read and understand. At-risk students often are so discouraged in their attempts to read the textbooks that they stop trying to read and become behavior problems. Average students also are often discouraged.

*Science Word Sorts* uses the brain's natural ability for patterns, rhymes, and rhythms to improve multisyllable word reading and spelling. It is based on the idea that the brain is highly efficient and organizes information by patterns. Working with predictable word patterns allows students' brains to do much of the work for them.

*Science Word Sorts* is unique as it organizes important and high frequency words (words chosen from middle school and high school science textbooks) by identical word endings. By analyzing the words, students learn clusters of words that share common elements: *transportation*, *observation*, and *constellation*, for example. In *Science Word Sorts* students learn words elements that appear in thousands of other words, thus improving their general reading and spelling abilities.

### **Teaching Multisyllable Words in Consistent Patterns is Brain Efficient.**

Teaching multisyllable words in consistent patterns is brain efficient, as expressed in the following research findings about the brain.

- Multisyllable words are like music, they have natural rhythms that can make learning them easier. "Accent structures in words naturally make a sort of melody."<sup>1</sup> The rhythmic feature creates less demand on the brain.<sup>2</sup>
- Brain research shows that a similar word pattern can prime the next word if it has a similar pattern and accelerate reading. Rhyming words are especially powerful.<sup>3</sup>

*Science Word Sorts* does not contain all the difficult words found in science textbooks. By mastering the frequently used word patterns chosen for the word sorts, students find it easier to decode difficult words.

## Presenting the Program

### FOR THE TEACHER:

Words for each of the 23 Word Sorts are found in the word box at the top of each Word Sort page.

### Page 1, Word Sort 1 (All Word Sorts have the same instructions as Word Sort 1.)

**Instruction 1.** Read the words in the word box aloud with all students reading aloud with you. In each row, read the words from left to right. The words are divided into syllables to make it easier for students to read and spell multisyllable words. Read the words slowly emphasizing the syllables as the students read with you.

Discuss general word meanings with students. Students tell words with which they are familiar. (Additional vocabulary work can be done later depending on the group.)

**Instruction 2.** Students write the words under the correct ending spelling patterns. They use the words in the word box from left to right and put a check or a dot next to each word after writing it, without marking across the words. **Going in a left to right order is necessary to make the rhyming and similar sounding words appear in a brain efficient order.**

**Instruction 3.** When the students have completed writing the words, read the words in the word box with them again. This time have them draw an arc or a loop under each syllable as you read the words at a challenging pace emphasizing each syllable.

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## **Page 2, Using the Game Board / Answer Key** (All Game Board pages have the same instructions.)

**Instruction 1.** Using the Game Board /Answer Key, students check their answers and make corrections. Ask students to read the words with you as you read the words under each spelling pattern. Or you may have students volunteer to read the words.

**Instruction 2.** Students cut out their words to be used for a word matching game on the game board. They can work alone or with a partner.

**Instruction 3.** After students practice matching the word cards to the game board, they practice speed word matching to strengthen automatic word recognition. Speed word matching works well with students in pairs or in cooperative groups. Students in the pair or group that completes the word sort matching in the shortest time are the winners. Give bonus points or prizes to the winners. Also, students use their Word Sort cards or the Game Board cards for a variety of games with which they are familiar, such as “Concentration,” and other activities.

**Instruction 4.** Practice reading the words down. Then practice reading the words across.

### **Vocabulary Development Suggestions**

Ask students to put words together based on relationships, and have them describe the relationships. For further vocabulary development, students work in groups. Assign each group a few Word Sort words for which to find dictionary definitions to share with the class, or add your vocabulary activities.

## **Page 7, Timed Reading Word List 1** (All Word Lists have the same instructions as Word List 1.)

Timed reading increases student reading speed and automatic word recognition. The words are grouped by specific visual, sound, and rhythmic patterns.

**Instruction 1.** Before the timing, you and all students read the words aloud together.

**Instruction 2.** Then individually, students read as many words as they can in one minute aloud softly to themselves or to you or to a student partner. If students finish reading the words, they start again at the beginning and add to the total number of words they have already read. One point is subtracted for each missed word. Students write their scores on the lines. (Limit or have no interruptions of oral timed reading. If students need help say the word and let them continue reading.)

### **References**

(1) Levitan, D.J. (2009). *The World in Six Songs* (p.25). New York: Penguin Books.

(2) Levitan, D.J. (2009). *The World in Six Songs* (p.172). New York: Penguin Books.

(3) Dehaene, S.D. (2009). *Reading in the Brain* (p. 42). New York: Viking/Penguin Group.

For timed reading practice, ***25 Graded Reading Passages*** (for science and social studies at approximately grade 3 through grade 10 readability levels) is offered at

**[www.StrugglingReaders.com](http://www.StrugglingReaders.com)**.

# SCIENCE WORD SORT 1

●—————→

✓ so lar      po lar      er ror      com pu ter      mo tor      con su mer

va por      lu nar      har bor      con duc tor      bar om e ter

pre da tor      ther mo me ter      sim i lar      cen ti me ter

mus cu lar      pop u lar      di sas ter      me te or

● Write the words under the correct spelling. (Write each word as one word.)

**-ar**

**-or**

**-er**

<u>solar</u>		

**-WORD SORT 1, GAMEBOARD / ANSWER KEY-**

<b>solar</b>	<b>error</b>	<b>computer</b>
<b>polar</b>	<b>motor</b>	<b>consumer</b>
<b>lunar</b>	<b>vapor</b>	<b>barometer</b>
<b>similar</b>	<b>harbor</b>	<b>thermometer</b>
<b>muscular</b>	<b>conductor</b>	<b>centimeter</b>
<b>popular</b>	<b>predator</b>	<b>disaster</b>
	<b>meteor</b>	

## SCIENCE WORD SORT 2

✓ matter      re ac tor      lus ter      so nar      cra ter      e qua tor  
 la ser      gla cier      gen er a tor      wea ther      a vi a tor      car ni vore  
 ra dar      in su la tor      an ter i or      her bi vore  
 a va tar      om ni vore      clus ters      po ster i or

● Write the words under the correct spelling. (Write each word as one word.)

**-er**

**-ar**

**-or**

<u>matter</u>		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>-ore</b> </div>	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**-WORD SORT 2, GAMEBOARD / ANSWER KEY-**

<b>matter</b>	<b>sonar</b>	<b>reactor</b>
<b>luster</b>	<b>radar</b>	<b>equator</b>
<b>crater</b>	<b>avatar</b>	<b>generator</b>
<b>laser</b>		<b>aviator</b>
<b>glacier</b>	<b>carnivore</b>	<b>insulator</b>
<b>weather</b>	<b>herbivore</b>	<b>anterior</b>
<b>clusters</b>	<b>omnivore</b>	<b>posterior</b>

# SCIENCE WORD SORT 3

✓ bar ri er      fea ture      crea ture      cyl in der      Ju pi ter      el e ment  
 na ture      sed i ment      a qui fer      mea sure ment      nur ture  
 treat ment      ac ci dent      rup ture      ma ture      de com po ser  
                          in stru ment      mix ture

● Write the words under the correct spelling. (Write each word as one word.)

**-er**

**-ment**

**-ture**

barrier <u>er</u> _____	_____ _____	_____ _____
_____ _____	_____ _____	_____ _____
_____ _____	_____ _____	_____ _____
_____ _____	_____ _____	_____ _____
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>-ent</b> </div> _____	_____ _____
	_____ _____	_____ _____

**-WORD SORT 3, GAMEBOARD / ANSWER KEY-**

<b>barrier</b>	<b>element</b>	<b>feature</b>
<b>cylinder</b>	<b>sediment</b>	<b>creature</b>
<b>Jupiter</b>	<b>measurement</b>	<b>nature</b>
<b>aquifer</b>	<b>treatment</b>	<b>nurture</b>
<b>decomposer</b>	<b>instrument</b>	<b>rupture</b>
		<b>mature</b>
	<b>accident</b>	<b>mixture</b>

# SCIENCE WORD LIST 1

(Lesson Review 1, 2, 3)

**A**



computer <u>er</u>	consumer	barometer	thermometer
centimeter	epicenter	disaster	matter
luster	clusters	crater	laser
glacier	weather	barrier	cylinder
Jupiter	aquifer	decomposer	

**B**

SCORE \_\_\_\_ TIME \_\_\_\_\_



error <u>or</u>	motor	vapor	harbor
conductor	predator	meteor	reactor
equator	generator	aviator	insulator
anterior	posterior		
carniv <u>ore</u>	herbivore	omnivore	

**C**

SCORE \_\_\_\_ TIME \_\_\_\_\_



so <u>lar</u>	polar	lunar	similar
muscular	molecular	sonar	radar
avatar			
elem <u>ent</u>	sediment	measurement	treatment
instrument	accid <u>ent</u>		
featu <u>re</u>	creature	nature	nurture
rupture	mature	mixture	

SCORE \_\_\_\_ TIME \_\_\_\_\_

# SCIENCE WORD SORT 4

✓ in de pen <u>dent</u>	in de pen dence	in tel li gent	ex per i ment
in tel li gence	lu mi nes cence	lu mi nes cent	en vir on ment
dependent	evidence	referent	ref er ence
sol vent	e ffi <u>cient</u>	nour ish ment	con ti nent
	cir cum fer ence	nu tri ent	in gre di ent

● Write the words under the correct spelling. (Write each word as one word.)

**-ent**

**-ence**

**-ment**

<u>independent</u> <hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<div style="border: 2px solid black; padding: 5px; display: inline-block;"> <p><b>-ient</b></p> </div>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>
<hr/>	<hr/>	<hr/>

**-WORD SORT 4, GAMEBOARD / ANSWER KEY-**

<b>independent<u>u</u></b>	<b>independ<u>u</u>ence</b>	<b>experim<u>u</u>ent</b>
<b>intelligent</b>	<b>intellig<u>e</u>nce</b>	<b>environm<u>e</u>nt</b>
<b>luminescent</b>	<b>luminesc<u>e</u>nce</b>	<b>nourishm<u>e</u>nt</b>
<b>dependent</b>	<b>evid<u>e</u>nce</b>	
<b>refer<u>e</u>nt</b>	<b>refer<u>e</u>nce</b>	<b>effici<u>e</u>nt</b>
<b>solvent</b>	<b>circumf<u>e</u>rence</b>	<b>nutri<u>e</u>nt</b>
<b>continent</b>		<b>ingredie<u>e</u>nt</b>

# SCIENCE WORD SORT 5

●—————→

✓ dis <u>tant</u>	as sess ment	dis tance	re sis tance	con gru ent
re sis tant	dom i nant	ad ja cent	dom i nance	a bun dance
a bun dant	sig nif i cant	sig nif i cance	en dur ance	a rrange ment
dor mant	trans par ent	trans lu cent	in hab i tant	dis tur bance

● Write the words under the correct spelling. (Write each word as one word.)

**-ant**

**-ance**

**-ment**

<u>distant</u>	_____	_____
_____	_____	_____
_____	_____	<b>-ent</b>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____