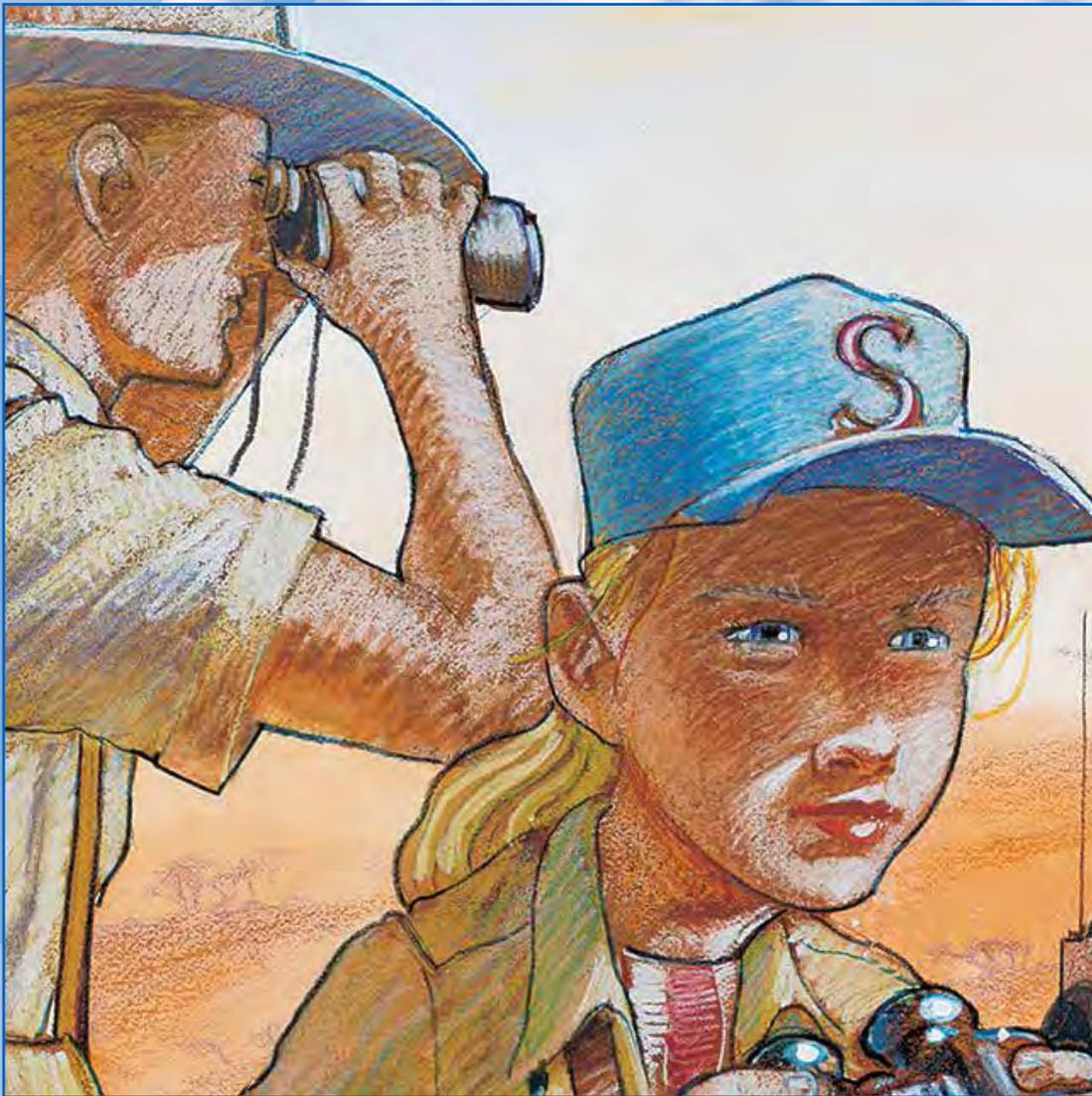




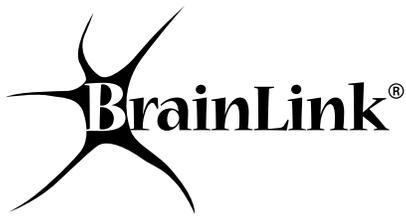
THE MOTOR SYSTEM

# THE READING LINK

for use with *Trouble at Tsavo* and the *The Motor System Teacher's Guide*



Baylor  
College of  
Medicine



© 2016 by Baylor College of Medicine All rights reserved.  
Printed in the United States of America.

## BioEd<sup>SM</sup>

Teacher Resources from the Center for Educational Outreach at Baylor College of Medicine.

---

The mark “BioEd” is a service mark of Baylor College of Medicine. The marks “BrainLink” and “NeuroExplorers” are registered trademarks of Baylor College of Medicine.

The Reading Links have been created as ready-to-use reading and writing activities that are directly related to BrainLink integrated units. They are not intended to represent a comprehensive reading program. The activities are related to reading objectives common to many curricula and cover a range of grade and ability levels. Teachers may wish to select from these activities those that are most appropriate for their own students.

No part of this book may be reproduced by any mechanical, photographic, or electronic process, or in the form of an audio recording, nor may it be stored in a retrieval system, transmitted, or otherwise copied for public or private use without prior written permission of the publisher. Black-line masters reproduced for classroom use are excepted.

The activities described in this book are intended for school-age children under direct supervision of adults. The authors, Baylor College of Medicine and the publisher cannot be responsible for any accidents or injuries that may result from conduct of the activities, from not specifically following directions, or from ignoring cautions contained in the text.

Development of BrainLink® educational materials was supported, in part, by funds from the National Institutes of Health, Science Education Partnership Award grant number R25 RR09833. The opinions, findings and conclusions expressed in this publication are solely those of the authors and do not necessarily reflect the views of Baylor College of Medicine or the sponsoring agency.

Authors: Judith Dresden, M.S., Barbara Z. Tharp, M.S., and Nancy P. Moreno, Ph.D.

Illustrations: T Lewis

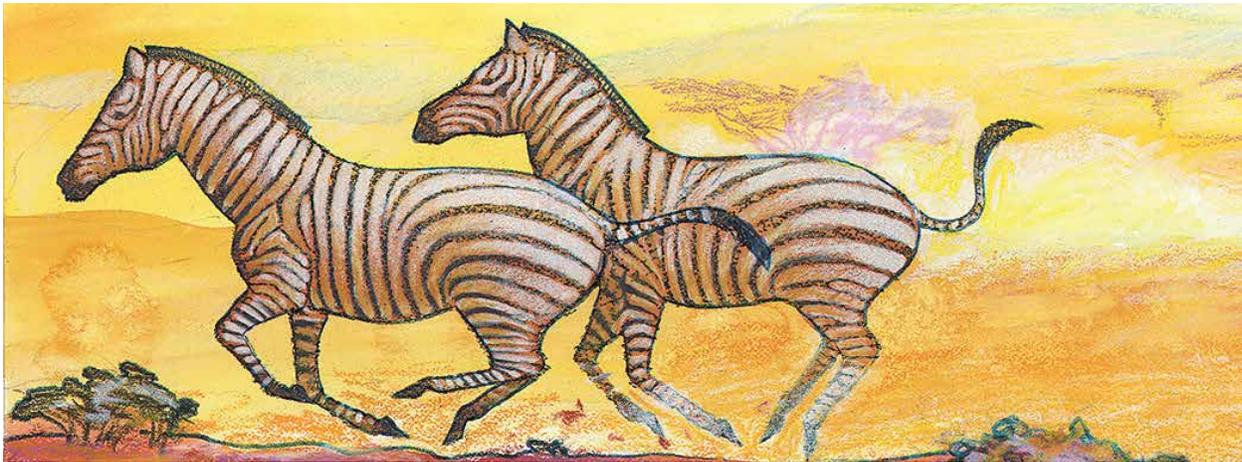
Editor: James P. Denk

Design: Martha S. Young

The logo for Baylor College of Medicine consists of the words "Baylor", "College of", and "Medicine" stacked vertically in a white, serif font. The text is set against a solid black square background.

Baylor  
College of  
Medicine

Center for Educational Outreach  
Baylor College of Medicine  
One Baylor Plaza, BCM411  
Houston, Texas 77030  
713-798-8200 | 800-798-8244  
edoutreach@bcm.edu | www.bioedonline.org



1. Here are some words from *Trouble at Tsavo* that have more than one meaning. Read the meanings for each word, and then decide which meaning goes with the word in each of the sentences below. Write the number of the correct meaning next to each sentence.

**preserve**

1. to protect; keep safe from injury or destruction
2. an area maintained for the protection of wildlife or natural resources
3. fruit cooked with sugar and canned for future use; jam or jelly
4. to protect food from spoiling, as by freezing, canning or pickling

- \_\_\_\_\_ Hunting is not allowed in the wildlife preserve.
- \_\_\_\_\_ We're going to preserve the cucumbers from our garden by making pickles.
- \_\_\_\_\_ We must preserve our forests.
- \_\_\_\_\_ Please pass the raspberry preserves.

**crest**

1. the top part of something, as of a mountain or a wave
2. a coat of arms, or the prominent design at the top of a coat of arms
3. a tuft of feathers growing on the top of an animal's head, as on a bird
4. a plume (usually feathers) on a knight's helmet

- \_\_\_\_\_ The family crest hung over the fireplace in the great hall of the castle.
- \_\_\_\_\_ Can you see the crest on that bluejay's head?
- \_\_\_\_\_ When I reached the crest of the hill, I could see the river below.
- \_\_\_\_\_ The Black Knight's crest waved in the wind as he galloped toward his opponent.



# WORD MEANINGS

(CONTINUED)



2. Here are the definitions of some words used in Trouble at Tsavo. Write a sentence using each word. Your sentences should tell something about the story.

- a. **poacher** - one who hunts or kills game or fish illegally
- b. **inflammation** - a red and painful swelling caused by injury or infection
- c. **involuntary** - not voluntary; something that happens without thought or control
- d. **paralysis** - loss of the ability to move
- e. **terrain** - features of a particular area of land
- f. **potent** - strong; powerful and effective

a. \_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_

d. \_\_\_\_\_  
\_\_\_\_\_

e. \_\_\_\_\_  
\_\_\_\_\_

f. \_\_\_\_\_  
\_\_\_\_\_

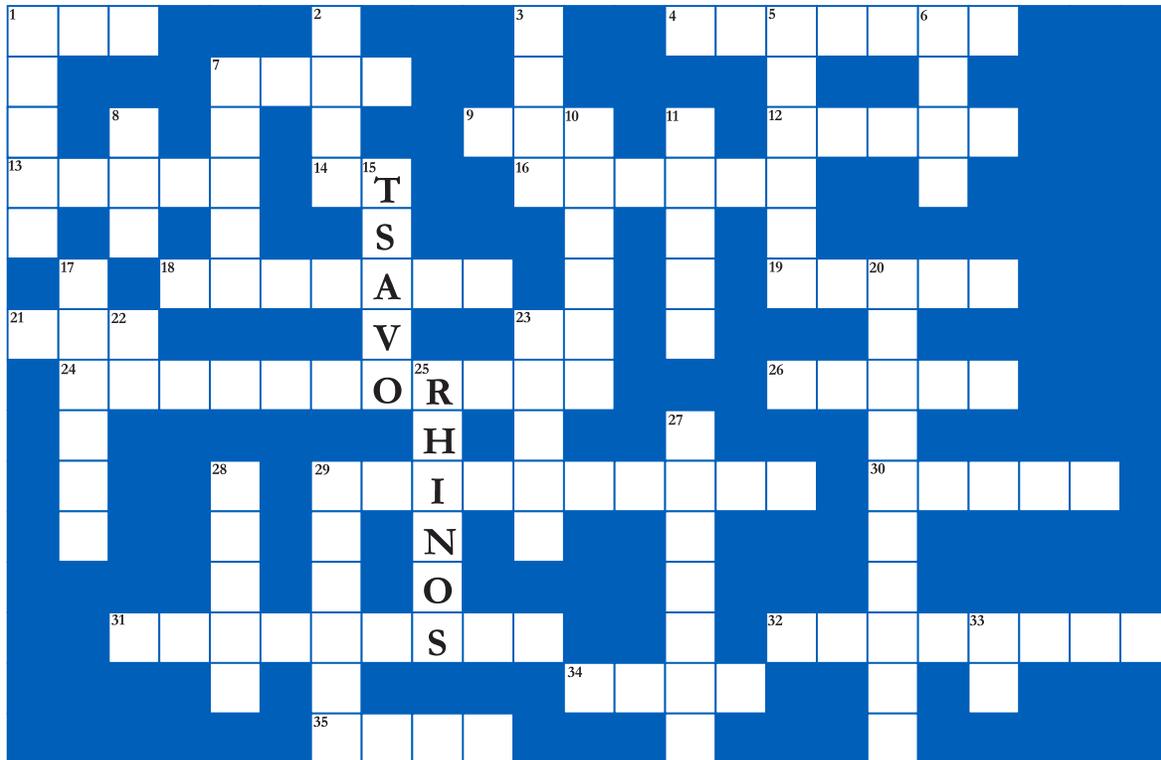


# WORD MEANINGS

(CONTINUED)



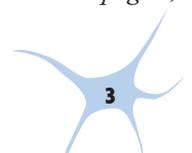
3. Complete the *Trouble at Tsavo* crossword puzzle below.



## Across

1. Weight measure suitable for rhinos
4. When a kind of animal no longer exists, it is \_\_\_\_\_.
7. Patellar reflex: \_\_\_\_\_-jerk
9. Fasten your seat belt when you get into the \_\_\_\_\_.
12. Bundle of neuron fibers
13. One of the NeuroExplorers is called The \_\_\_\_\_.
14. \_\_\_rouble at \_\_\_savo
16. Nervous system cell that carries messages
18. Dead body of an animal
19. Motor cortex: \_\_\_\_\_ of nerve cells in the brain area “under your headphones”
21. B.J. \_\_\_\_\_ the table with her drumstick.
23. Pronoun for myself
24. Part of the brain you use when you choose to move (2 words)
26. Another kind of rhinoceros
29. Nerve bunches inside the bony spine (2 words)
30. Kyle called the NeuroExplorers meeting to \_\_\_\_\_.
31. Loss of the ability to move
32. Wrinkled part of the brain, where thinking occurs
34. Vehicle used in the desert
35. Part of the rhino wanted by poachers

(continued on page 4)



# WORD MEANINGS

(CONTINUED)

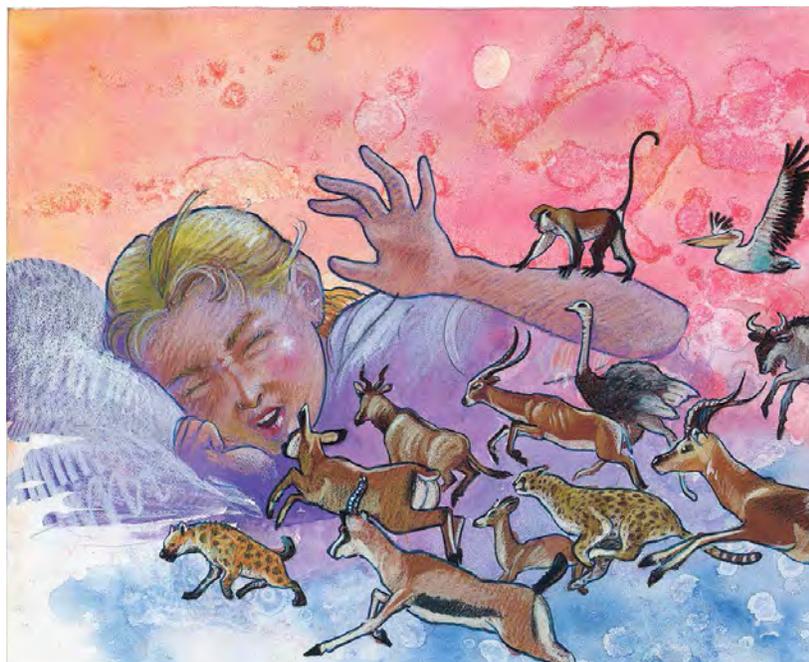


3. *Trouble at Tsavo* crossword puzzle (continued from page 3)

---

## Down

1. Group of people; there are some in Africa
2. Shiloh forgot to fasten her seat-\_\_\_\_\_.
3. Shiloh's \_\_\_\_\_ was to return to Africa.
5. Sport played by Shiloh
6. Location of the NeuroExplorers' last adventure
7. Country in Africa where Shiloh went
8. One of the NeuroExplorers
10. An involuntary motor response
11. Shiloh's Dad slammed on the \_\_\_\_\_.
15. Plains where Shiloh's adventure took place
17. Shiloh's Dad: Dr. \_\_\_\_\_
20. Large African animal with horn
22. Shiloh was face-\_\_\_\_-face with peril.
23. A jeep is made mostly of \_\_\_\_\_.
25. Three of these charged the jeep
27. One who takes or kills animals illegally
28. Striped African animal
29. Heroine of this story
33. Drumming NeuroExplorer







# MAIN IDEA



1. Read the Science Box on page 4. Fill in the circle next to the sentence that best expresses the main idea of that paragraph.

- When we move, muscles and the nervous system must work together.
- Signals for movement start in the brain or spinal cord.
- The messages are carried along special cells, called neurons, to the muscles.
- When the spinal cord or other parts of the nervous system are damaged, messages can't get through.

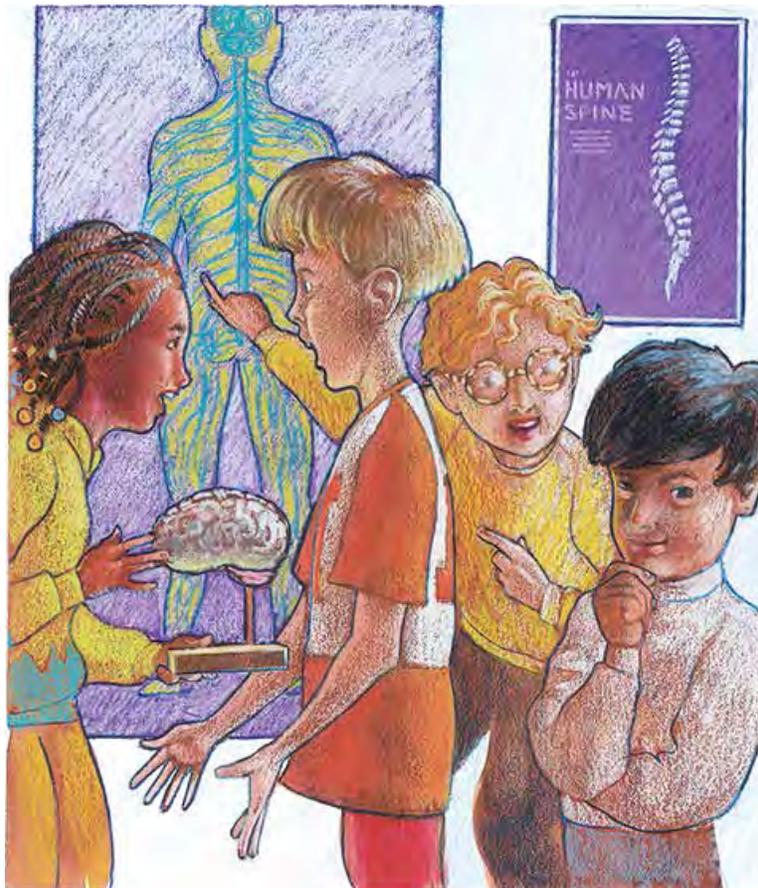
2. Write one sentence that tells the main idea of the story, *Trouble at Tsavo*.

---

---

---

---





# SEQUENCE OF EVENTS



1. Read the chapter called “A Spinal Cord Puzzle” on pages 11–13. Find the event listed below that happened **last** in that chapter. Mark **5** next to it. Then number the order (**1–4**) in which the other events happened.

- \_\_\_\_\_ Shiloh explained the difference between paraplegia and quadriplegia.
- \_\_\_\_\_ Shiloh Nimbus knew that she had found some great new friends.
- \_\_\_\_\_ The NeuroExplorers used charts and models to review what they knew about the spinal cord and movement.
- \_\_\_\_\_ Isley II interrupted Shiloh’s story of her adventures in Africa.
- \_\_\_\_\_ The NeuroExplorers admitted their surprise at Shiloh’s ability to play tennis.



2. After you have read the whole story, number the order in which the following events took place.

- \_\_\_\_\_ Shiloh called the game warden for help against the angry poachers.
- \_\_\_\_\_ Shiloh played an intense game of tennis.
- \_\_\_\_\_ Shiloh and her father spotted three rhinos in the distance at a watering hole.
- \_\_\_\_\_ Dr. Nimbus’ jeep went flying above a ravine, and Shiloh flew out.
- \_\_\_\_\_ Shiloh stood on her seat in the jeep and used her binoculars to look for birds.



# CAUSE AND EFFECT



1. Name at least three different things that caused Shiloh to be badly injured.

---

---

---

---

2. What is the effect of people's willingness to pay a lot of money for black rhinos' horns? Explain what first happens, and then tell the long-term effect.

---

---

---

---

---

---

---

# FACT OR OPINION



Facts are true. Opinions sometimes are stated as facts, but they might not be true. Decide whether each of these statements related to the story is a fact or an opinion. Write **F** or **O** in each space.

- \_\_\_\_\_ Shiloh's father loves the big animals in Kenya. (page 7)
- \_\_\_\_\_ The black rhinoceros is a majestic creature. (page 7)
- \_\_\_\_\_ Neurons should be able to heal, just like skin and bones do. (page 15)
- \_\_\_\_\_ Poachers could take rhinos' horns and still let the rhinos live. (page 18)
- \_\_\_\_\_ Black rhinos are almost extinct. (page 18)
- \_\_\_\_\_ Shiloh and her father should go after the poachers. (page 19)
- \_\_\_\_\_ Reflexes happen so fast because they don't involve the thinking part of the brain. (page 29)



# GENERALIZATIONS/DRAWING CONCLUSIONS



1. Which of the following generalizations or conclusions can be made from the information in the story, *Trouble at Tsavo*? Fill in the circle next to each statement that you think is correct.
- Getting to know someone with a disability really opened the eyes of the NeuroExplorers and helped them to answer some “neuro-” questions.
  - It is important to wear a seat belt when riding in a car or truck.
  - Poachers don’t care about the results of their actions.
  - The damage to Shiloh’s spinal cord was near her neck.
  - Both the brain and the spinal cord are important for movement.
  - Kenya should raise more black rhinos so that there will be enough of the medicine that comes from their horns.
  - Shiloh is a talented story teller.
  - Shiloh is very depressed about being in a wheelchair and doesn’t see any hope for herself.







# PAINTING PICTURES WITH WORDS



Sometimes words are used in an unusual way to help us understand what is being described. For example, someone might say, “He was as happy as a child in a candy store.” This is called a simile (*sibm-uh-lee*). A simile is a figure of speech that uses the words “like” or “as” to compare two things that are unlike. However, the words paint a very clear picture for us.



Look at these word picture sentences from *Trouble at Tsavo*. Then see if you can write sentences of your own, using similes. You might describe a desert scene or charging beasts in Africa, or the action or feelings of a character, or whatever you like.

## Sentences from *Trouble at Tsavo*

The sun was pushing down on her neck *like a hot iron*. (page 19)

Dr. Nimbus turned the wheel hard, ramming the vehicle through a patch of tall dried grass, the shoots *cracking like brittle glass* as the jeep tore through them. (page 24)

## My Word Picture Sentences

---

---

---

---

## My Picture

Draw one of the pictures you have just painted with words.

# CROSSWORD ANSWER KEY



1	T	O	N					2	B					3	P				4	E	X	5	T	I	N	6	C	T	
R				7	K	N	E	E						L					E							A			
I		8	M	E									9	C	A	10	R		11	B		12	N	E	R	V	E		
13	B	R	A	I	N			14	T	15	T			16	N	E	U	R	O	N						E			
E		X		Y				S						F		A			I										
	17	N		18	C	A	R	C	A	S	S			L		K			19	S	T	20	R	I	P				
21	H	I	22	T									23	M	E				E										
	24	M	O	T	O	R	C	O	R	T	E	X							26	W	H	I	T	E					
	B									H		T				27	P								N				
	U			28	Z			29	S	P	I	N	A	L	C	O	R	D						30	O	R	D	E	R
	S			E				H		N		L				A													
				B				I		O						C													
			31	P	A	R	A	L	Y	S	I	S				H			32	C	E	R	E	33	B	R	U	M	
				A				O							34	J	E	E	P					O		J			
								35	H	O	R	N																	

