



**Science Friction**  
Independent Reading

# Science Friction

## Think Like a Scientist

Scientists are trained to think in a certain way. First, they present a hypothesis, which is a statement that tells what they think is true. They gather data, or details, to support the hypothesis. Then, they analyze the data or draw a conclusion in a lab report.

**Reread pages 224–226 in the story. Complete a lab report for the hypothesis listed below. Gather and record data using text from the story.**

	Lab Report # 1
	Hypothesis: <i>Amanda is the leader of the group.</i>
	Supporting Data:
	1.
	2.
	3.
	4.
	5.
	Conclusion:

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

Science Friction  
Independent Reading

Reread pages 230–234. Complete a lab report for the hypothesis listed below. Gather and record data using text from the story.

	Lab Report #2
	Hypothesis: Amanda felt bad about how she treated Ellen.
	Supporting Data:
	1.
	2.
	3.
	4.
	Conclusion:

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

# Latin Roots and Affixes

**Science Friction**  
**Vocabulary Strategies:**  
 Latin Roots and Affixes

Some of the words below are formed using one of the following root words: *aud*, which means “hear or listen,” *lumen/ luc/ lum*, which means “light,” and *mov/ mot/ mobil*, which means “move.” The other words use one of the following prefixes: *ambi-*, meaning “both” or “around,” and *sub-*, meaning “under.” Choose the word from the box that best completes each sentence.

ambitious	translucent	audible	motivated
auditorium	subterranean	luminous	submarine

- The principal’s announcement was not \_\_\_\_\_ because the speakers in our classroom are broken.
- An earthworm is a \_\_\_\_\_ animal, since it lives underground.
- I could see right through the \_\_\_\_\_ screen.
- The \_\_\_\_\_ student took several difficult classes.
- The stars shining brightly in the sky look \_\_\_\_\_.
- I got up early on Saturday morning because I was \_\_\_\_\_ to be the first person in line when the store opened.
- Under the water, the dolphin swam by the large \_\_\_\_\_.
- We will go to the \_\_\_\_\_ this afternoon to listen to our class president’s speech.

# Final /ən/, /əl/, and /ər/

**Science Friction**  
Spelling: Final /ən/, /əl/, and /ər/

**Basic** Write the Basic Word that best belongs in each group.

1. trash, garbage, \_\_\_\_\_
2. pint, liter, \_\_\_\_\_
3. fields, trees, \_\_\_\_\_
4. circle, square, \_\_\_\_\_
5. leave, give up, \_\_\_\_\_
6. advice, help, \_\_\_\_\_
7. incorrect, wrong, \_\_\_\_\_
8. enemy, competitor, \_\_\_\_\_
9. flower, seed, \_\_\_\_\_
10. tuna, bass, \_\_\_\_\_
11. end, stop, \_\_\_\_\_
12. reduce, reuse, \_\_\_\_\_
13. breathe, air, \_\_\_\_\_
14. car, truck, \_\_\_\_\_
15. watch, observe, \_\_\_\_\_

**Challenge** Imagine you are running a marathon. Write a paragraph telling about the event. Use three of the Challenge Words. Write on a separate sheet of paper.

## Spelling Words

1. triangle
2. mental
3. error
4. panel
5. litter
6. pollen
7. gallon
8. cancel
9. abandon
10. rival
11. soldier
12. recycle
13. salmon
14. counsel
15. rural
16. vehicle
17. citizen
18. monitor
19. physical
20. oxygen

## Challenge

punctual  
endeavor  
abdomen  
kilometer  
dandelion

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

# Spelling Word Sort

**Science Friction**  
Spelling: Final /ən/, /əl/, and /ər/

Write each Basic Word beside the correct heading.

Final /ən/ spelled <i>en</i> and <i>on</i>	
Final /əl/ spelled <i>le</i> , <i>el</i> , and <i>al</i>	
Final /ər/ spelled <i>or</i> and <i>er</i>	

## Spelling Words

1. triangle
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11. soldier
12. recycle
13. salmon
14. counsel
15. rural
16. vehicle
17. citizen
18. monitor
19. physical
20. oxygen

**Challenge** Add the Challenge Words to your Word Sort.

**Connect to Reading** Look through "Science Friction." Find words in this selection that have the final /ən/, /əl/, and /ər/ spelling patterns on this page. Add them to your Word Sort.

### Challenge

punctual  
endeavor  
abdomen  
kilometer  
dandelion

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

# Proofreading for Spelling

Science Friction  
Spelling: Final /ən/, /əl/, and /ər/

Find the misspelled words and circle them. Write them correctly on the lines below.

Concentrating all his mentel powers, the lab student focused on his science experiment. Carefully, Leo brushed cactus pollin onto his left arm. Even though his teacher had tried to consel him to abandun his mad project, he was determined to change his own physicle properties. Next he mixed a galon of his secret growth formula and drank it. He stepped into the pressure chamber and pressed the control button that would deliver the oxigen. He tried to moniter the process for eror but grew dizzy. Still, nothing could make him cansel his dream. No bully would ever make fun of him again. No rivul would win the coveted science fair prize. He stumbled out of the chamber. A giant, poison-spiked, green cactus arm extended where Leo Finkle's left arm had once been.

## Spelling Words

1. triangle
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20. oxygen

- |          |           |
|----------|-----------|
| 1. _____ | 7. _____  |
| 2. _____ | 8. _____  |
| 3. _____ | 9. _____  |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ |           |

# Using *and*, *but*, and *or*

**Science Friction**  
Grammar: Coordinating  
Conjunctions

The **coordinating conjunctions** *and*, *but*, and *or* join sentence parts. *And* adds information. *Or* shows choice. *But* shows contrast.

We went to the aquarium, and we observed fish.

Mike can study fish, or he can study aquatic plants.

I was tired, but I finished the experiment.

**Thinking Questions**

Does the word join parts of a sentence?  
Does it add information, show choice, or show contrast?

**Activity Underline the coordinating conjunction in each sentence.**

1. We waited for you, but you were late to science class.
2. Science interests me, and I enjoy it, too.
3. We sat at our desks, and we decided who would be the team leader.
4. I was willing to lead, but the group chose Andre.
5. We could study a family of mice, or we could study plants in a terrarium.
6. We chose to study the plants, and I was happy about the choice.
7. The team recorded our observations daily, but I missed two days of class.
8. Our teacher said I could review the team's data, or I could write a hypothesis about what happened while I was gone.
9. I chose the hypothesis, and I wrote it that night.
10. I hypothesized that the plants had died, but they actually grew well.

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

# Compound Sentences

**Science Friction**  
Grammar: Coordinating  
Conjunctions

A **compound sentence** is made up of two simple sentences joined by a comma and a connecting word such as *and*, *or*, or *but*.

Ellen talked a lot during the experiment, but George was almost silent.

## Thinking Question

What are the two simple sentences joined by a connecting word?

**Activity** Underline the simple sentences in each compound sentence.

Circle the connecting word.

1. Rob took the science test, but he didn't finish it.
2. He was told to retake the test, or he could write a report about the experiment.
3. Our teacher told us we could study invertebrates next, or we could study ecology instead.
4. Most of the class chose to study ecology, but my vote was for invertebrates.
5. Mr. Wallace assigned my team to study plant life around our school, and we went outside to get started.
6. Kesha observed the plants near the track, but Oliver observed the plants further away.
7. Alex and Sondra studied the ladybugs on the flowers in the school garden, and Jordan took a photo for our report.
8. We could turn in a written report, or we could create a poster with our results.
9. My mom got the poster board, and Jordan printed the pictures.
10. We all thought our poster looked great, and our teacher did, too.



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

# Subject-Verb Agreement in Compound Sentences

**Science Friction**  
Grammar: Coordinating  
Conjunctions

Each subject in a compound sentence must agree in number with the verb that follows it.

My brother likes math, but I like science.

## Thinking Question

*Does each subject in the sentence agree in number with the verb that follows it?*

**Activity** Circle the correct form of the verb in the parentheses.

1. Mr. Wallace (teach, teaches) life science, but they (teach, teaches) earth science.
2. You (is, are) great at physics, and Juan (is, are) great at biology.
3. The science project (take, takes) a lot of time, but I (like, likes) learning about snakes.
4. Jeanine (help, helps) me with math, and I (help, helps) her with science.
5. Five students (wants, want) to do a project on fossils, but Mari (prefer, prefers) a project on plants.
6. Kyle and Hina (is, are) science team captains, and Hina (want, wants) to meet every day.
7. The science fair (is, are) on Friday, and I (am, are) almost ready.
8. I (are, am) proud of my presentation on butterflies, but my results (were, was) not what I expected.
9. Most butterflies (lives, live) only a few weeks, but one generation (lives, live) for months.
10. Experiments (show, shows) how the world works, and that (make, makes) science great.

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

# Subjects and Predicates

**Science Friction**  
Grammar: Spiral Review

<b>Imperative Sentence</b>	<i>(You)</i> Please clean the lab table.
<b>Interrogative Sentence</b>	Will you clean up this fish tank?
<b>Compound Subject</b>	Dirty glassware and scattered goggles clutter the lab.
<b>Compound Predicate</b>	I will fold the lab coats and organize the supply closet.

**1–3.** Write *imperative* or *interrogative* for each sentence. Then write the subject of the sentence.

- Please bring me the test tubes. \_\_\_\_\_
- Should we find an aquarium? \_\_\_\_\_
- Sweep the lab area first. \_\_\_\_\_

**4–8.** Underline the conjunction in each compound subject or predicate. Then write the simple subjects or simple predicates that are joined by the conjunction.

- Test tubes and flasks are placed on the shelf.  
\_\_\_\_\_
- Would you rather clean the tanks or wash the beakers?  
\_\_\_\_\_
- We sweep the lab every week and help Mr. Wallace with other chores. \_\_\_\_\_
- Biology and chemistry are both taught in this room.  
\_\_\_\_\_
- Jackson and Felicia said the science classroom looked much neater.  
\_\_\_\_\_

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

# Connect to Writing

**Science Friction**  
Grammar: Connect to Writing

## Rambling, Choppy Sentences

We could do a biology project. Only Ellen knows about biology. George doesn't say much. Benji isn't much help either.

## Compound Sentences

We could do a biology project, but only Ellen knows about biology. George doesn't say much, and Benji isn't much help either.

**Combine the simple sentences into compound sentences. Write the new sentence on the line.**

1. We could study fish. We could grow beans.

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2. Maybe George wasn't interested in science. It was hard to tell.

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3. We couldn't work together. Our biology project was behind schedule.

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4. Our moldy food seemed like a mess. It got us an A!

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5. Ellen had many interests. She enjoyed biology and music the most.

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# Focus Trait: Evidence

## Expressing an Opinion

**Science Friction**  
Writing: Argument Writing

Good writers develop an argument by providing reasons and evidence to support their claim, or opinion. They organize their ideas in a logical order.

When writing a book review, be sure to include reasons that tell *why* you think as you do. Support your reasons with evidence from the story.

**Read the book review. Then answer the questions that follow.**

The new book by acclaimed author Spooky van Danz, entitled *A Very Spooky Tale of Mad Science*, is an excellent follow-up to his debut novel, *A Spooky Tale of Mad Science*. The best part of this new book is the kooky character named Dr. Al Chemy and his wacky adventures.

Once again, Dr. Al Chemy wreaks havoc by setting loose oddball monsters created in his secret lab. The plot gets

better when Dr. Al Chemy creates the most destructive creature yet! In Chapter 5, a giant apple monster, with an appetite for doctors, causes chaos at a local hospital.

Aside from Chapter 2, which goes on a bit too long describing Dr. Al Chemy's brother Joe, the book is an instant hit.

The vivid story events make this book a page-turner. I highly recommend it.

1. What word in the introduction establishes the writer's claim about the book? \_\_\_\_\_  
\_\_\_\_\_
2. Which sentence shows the writer using textual evidence to back up her claim? \_\_\_\_\_  
\_\_\_\_\_
3. What reason does the writer give for liking the book? \_\_\_\_\_  
\_\_\_\_\_
4. What part of the book does the writer not like? What reason is given?  
\_\_\_\_\_