

# ***ROCKETS, RADAR, & ROBOTICS***

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## ***Technology-Based Writing Lessons***

by

Danielle Olander

with Nathanael Olander

## ***STUDENT BOOK***

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## Lesson 3 • Virtual Keyboards

### Goals

- To practice key word outlining and summarizing notes into paragraphs
- To practice forming interesting topic sentences
- To introduce strong verbs and additional banned words

### Lesson

A **paragraph** is a group of **sentences** arranged around a single topic. The first rule of writing paragraphs is:

# 1 paragraph = 1 topic

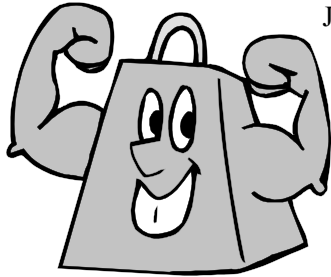
You alert the reader to the topic of your paragraph with your **topic sentence**. But please don't do this:

- In this paragraph you will read about virtual keyboards. OR
- I'm going to write a paragraph to tell you about virtual keyboards. OR
- I'm writing this paragraph today because my mom made me, and it's about virtual keyboards.

All these things may be true, but they don't make anyone want to read your paragraph. As you take notes, think about what would make a great topic sentence—perhaps an interesting fact or startling idea. Perhaps something like...

- Do you have big hands and find it hard to use the keyboard on your touchscreen? Virtual keyboards are the solution to your problem.
- A keyboard that isn't there seems like something out of *Star Trek*.
- Virtual keyboards are not just the stuff of science fiction.

In this lesson we'll continue to practice key word outlines and paragraphing. We are also going to add another style technique: the **strong verb**.



Just as engineers need quality adjectives to describe a product, they also need strong verbs to show what these products can do for us or what we can do with them. Just like quality adjectives, strong verbs do not need to be flowery, but they must be **active**.

Just like we banned weak adjectives, we've banned some weak verbs also. Your teacher will add to this list as needed:

*go/went*

*came/come*

*get/got*

*say/said*

*see/look*

Synonyms for these verbs can be found on pages 19–23 of your *Student Resource Notebook*.

Since we are writing about technology all year, some words will repeatedly pop up in your writing. Here are two. Add more throughout the year as you come across words you are tempted to repeat, and create a thesaurus for these commonly used words. For now, list four strong verbs for each of these two words:

make	invent

You will have to be creative with your use of words as you write about technology. As often as you can, use action verbs instead of state of being verbs (*am, is, are, was, were, be, being, been*). What is the best way to do this? Make sure the sentence has a subject that can perform some action.

Computers are a great tool for students. (weak—no action, subject isn't doing anything)

Students cannot survive without computers. (stronger)

Your turn:

Airplanes make a lot of noise.

---

Smartphones are the best.

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## Assignment

1. Read “Virtual Keyboards”
2. Underline or highlight the most important words in each sentence.
3. Choose three words (along with any numbers, symbols or abbreviations) from each sentence. There are no right and wrong words to choose. Just make sure the ones you choose help you remember the main idea of that sentence.
4. Write these words down in a key word outline on a blank piece of paper.
5. Take your key word outline to a parent or friend and ask him to help you test your outline. Give him the paragraph. Using your key word outline, retell the paragraph. If you get stuck more than twice, take your key word outline back to the source paragraph and choose new words.
6. After you have tested your key word outline, write out your paragraph. Include both a strong verb and a quality adjective. Remember to underline them.

### Virtual Keyboards

Virtual keyboards employ a device that projects an image of a keyboard using a specialized laser. A unit changes the laser to look like a keyboard, which is then projected onto the surface. Next, a small infrared laser producer at the bottom of the unit creates a plain of light just above the surface, over the projected keyboard. When you type, you pass over an infrared beam which detects when and where you touched. It then sends that information to the complimentary metal-oxide semiconductor (CMOS), which images your finger and sends that image to the Virtual Interface Processing Core. This decides which key was pressed and sends a signal to the computer.

Once powered, you can connect the virtual keyboard device to all sorts of electronics: smartphones, personal digital assistants, laptops, tablets, or even desktops. It is small and easy to carry, but you can't just pull it out and use just anywhere. It has to be on a flat, non-reflective, opaque surface, and it has to be within cord length of the device it is connected to. The biggest adjustment comes from not hearing keys clicking or feeling keys moving, just touching a smooth surface.

## Lesson 23 • Robotics Essay: Planning

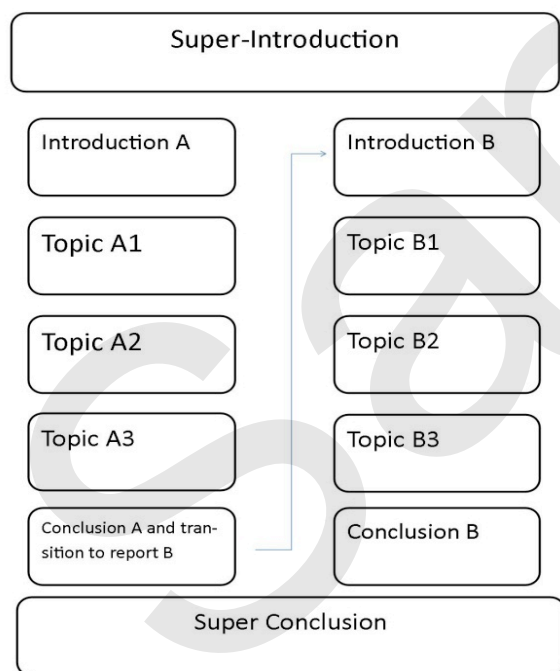
### Goals

- To learn the super-essay model
- To plan a super-essay
- To begin research and note-taking for a super-essay

### Lesson

A **super-essay** (sometimes known as a term paper or research paper) simply combines two or more smaller essays into one paper, with an expanded introduction at the beginning and an expanded conclusion at the end. You may also have smaller introductions between each section of your paper. The final clincher of each section reflects the topic sentence of the introduction of that section. The next introduction paragraph includes a transitional sentence from the previous topic into the next.

The paragraph is still the building block of the essay, even one this length. Each paragraph has a single topic. You will be following this model:



Each of your essays must support your overall thesis statement, while each will also have its own thesis statement. Your overall thesis statement will be the answer to this question:

What are robotics, and in what areas of life are they proving effective and useful? How are they used in these areas?

## Assignment

1. Locate an encyclopedia article or other summary about robotics.
2. Read your article, and list 3–5 possible subjects for your two 5-paragraph essays.
3. Choose the subjects for each of your essays.
4. Plan the topics for each of your paragraphs.
5. Locate at least two sources for each of your essays. Look for articles in newspapers or magazines, videos or DVDs, and books. Ask your teacher if you are allowed to use websites.
6. Complete a bibliography form (see page 94) that includes all the sources you've looked at. List them alphabetically by the author's last name. Follow these examples:

Adams, Michael. "Robots and Our World." *Science and Mechanics*, November 2010, 110–120.

Kaku, Michio. *Physics of the Future: How Science Will Shape Human Destiny and Our Daily Lives by the Year 2100*. New York: Doubleday. 2011.

Lyons, Daniel. "Who Needs Humans?" Quoted in The Daily Beast.  
[http://www.thedailybeast.com/newsweek/2011/07/17/  
the-threat-of-automation-robots-threaten-american-jobs.html](http://www.thedailybeast.com/newsweek/2011/07/17/the-threat-of-automation-robots-threaten-american-jobs.html) (accessed December 19, 2011).

### Lesson 23 Checklist

- ☐ Encyclopedia/summary article located
- ☐ Essay planning page completed
- ☐ Sources located (2–4 per essay)
- ☐ Bibliography form completed

### Bibliography Form

Author

Title of article or book

Title of magazine

Place of publication

Publisher

Date

Page numbers (for magazine)

Author

Title of article or book

Title of magazine

Place of publication

Publisher

Date

Page numbers (for magazine)

Author

Title of article or book

Title of magazine

Place of publication

Publisher

Date

Page numbers (for magazine)

Author

Title of webpage

Title of website

Web address

Publisher

Date written

Date accessed



## Lesson 25 • Robotics Essay: Notes and Writing

### Goals

- To continue taking notes and writing paragraphs
- To write an introduction and conclusion to the first essay

### Assignment

1. Research and make your key word and fused outlines for your second essay topics.
2. Write your three paragraphs for your second essay.
3. Print two copies of your essay and bring to class.
4. Next lesson, you will need a copy of *Journey to the Center of the Earth* by Jules Verne.

### Lesson 25 Checklist

			I	II	III
<input type="checkbox"/>	Paragraphs are double-spaced.	5			
<input type="checkbox"/>	Name and date in upper right-hand corner, title centered	5			
<input type="checkbox"/>	Dress-ups underlined and openers numbered	5			
<input type="checkbox"/>	Paragraphs contain all dress-ups and openers (no more than 2 of the same in a row).	20			
<input type="checkbox"/>	No banned words: -1 for each used; +5 points for none	5			
<input type="checkbox"/>	Advanced techniques:	+5 ea			
<input type="checkbox"/>	Essay is formatted correctly.	5			
<input type="checkbox"/>	No more than 3 spelling or grammar errors	5			
Total Points _____ (_____ possible) = _____%					

## Lesson 26 • Robotics Essay: Putting It All Together

### Goals

- To write introduction and conclusion paragraphs for both essays
- To write a super-introduction and super-conclusion
- To complete the rough draft of the super-essay
- To prepare for an oral presentation of your research

### Review

1. What does an introduction need to do?
2. What does an introduction need to have?
3. What should a conclusion include?
4. What should a conclusion not have?

### Lesson

The super-introduction and super-conclusion have the same purpose and requirements as the individual introductions and conclusions for your essay. Remember your thesis statement? That should be in your introduction. Your conclusion should repeat that and show the most significant aspect of your report as it relates back to your thesis statement.

Look ahead to Lesson 27 on page 101. The information there will help you prepare an oral presentation on your robotics research. The Presentation Grade Sheet details how long your presentation should be, what content it should include, and how to practice in order to speak effectively in front of your family members or a group.

### Assignment

1. Write the introductions and conclusions for both essays.
2. Write the super-introduction and super-conclusion for your entire super-essay.
3. Compile everything into one seamless document.
4. Prepare your presentation notes.

### Additional Assignment

Read *Journey to the Center of the Earth* as your parent/teacher directs.

### Lesson 26 Checklist

<b>General</b>			
<input type="checkbox"/>	Format: Name, Date, Assignment in upper right-hand corner, double spaced	5	
<input type="checkbox"/>	Indicators: dress-ups underlined; sentence openers' numbers in margins	2	
<input type="checkbox"/>	Paragraphs are of approximately equal length.	3	
<input type="checkbox"/>	Completed essay/report matches assignment in length and sources used.	5	
<b>Mechanics</b>			
<input type="checkbox"/>	Punctuation, capitalization, and spelling have been checked. (-1 for each error)		
<input type="checkbox"/>	Bibliography page properly formatted and attached as last page	5	
<b>Super-Introduction (one paragraph)</b>			
<input type="checkbox"/>	Sets the background/current interest	5	
<input type="checkbox"/>	States the themes to be discussed	5	
<input type="checkbox"/>	One of each opener as possible, no more than two of same in a row	6	
<input type="checkbox"/>	At least one dress-up per sentence, no more than two of same in a row	6	
<b>Body</b>			
<input type="checkbox"/>	Each paragraph has a minimum of 6 sentences (one of each opener as possible, no more than two of same in a row).	6/¶	
<input type="checkbox"/>	Each paragraph has at least one dress-up per sentence.	6/¶	
<input type="checkbox"/>	Each paragraph has a clincher which repeats/reflects the key words of the topic.	5/¶	
<input type="checkbox"/>	Each essay includes an introduction and conclusion with all required elements.	4/¶	
<b>Super-Conclusion (one paragraph)</b>			
<input type="checkbox"/>	States the themes discussed	5	
<input type="checkbox"/>	States which theme is most significant and why	5	
<input type="checkbox"/>	Personal pronouns (I, me, myself) are not used. (-1 point for each used)		
<input type="checkbox"/>	The final sentence is reflected or repeated in the title.	5	
Total Points _____ ( _____ possible) = _____ %			