



## TASK

Research an example of static electricity (electrostatic) technology.

**Write an expository essay that explores one example of how static electricity technology is used to solve a problem. The essay should explore both the benefits and drawbacks of the chosen use of static electricity.**

Your essay should include:

- a) A description of **the problem** that your static electricity technology is used to solve.
- b) An explanation of **how your static electricity technology is used to solve the problem.**
- c) A description of the **benefits** of your chosen use of static electricity.
- d) A description of the **drawbacks** of your chosen use of static electricity.
- e) A **recommendation** as to whether this type of static electricity technology should be used [do the benefits outweigh the drawbacks?]

## SCIENTIFIC VOCABULARY:

Attract	Unlike	Current
Repel	Protons	Ions
Charge	Electrons	Ionised
Negative	Induced charges	Neutral
Positive	Conductor	
Like	Insulator	

**Quizlet:** [http://quizlet.com/4176976/sci\\_myp9\\_electricity-circuits-flash-cards/](http://quizlet.com/4176976/sci_myp9_electricity-circuits-flash-cards/)

## Research Worksheet:

### 1) Introduction

a) What is *static electricity*?

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b) Describe how static electricity works.  
[electrons, protons, ions, etc.]

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c) Examples of how static electricity has been applied to technology include...

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d) The static electricity technology that I plan to investigate is \_\_\_\_\_

### 2) 1<sup>st</sup> Paragraph

a) The problem that this type of technology helps to solve is:

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b) This is a problem because:

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c) The way this type of technology solves this problem is:

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**3) 2<sup>nd</sup> Paragraph**

This type of technology is beneficial to society because:

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**4) 3<sup>rd</sup> Paragraph**

The drawbacks of this type of technology are:

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**5) Conclusion**

Are there more benefits or drawbacks with this type of technology? Explain.

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## WRITING STRUCTURE – EXPOSITORY ESSAY

### **Introduction**

- \_\_\_ A. Introduce the topic of static electricity [capture attention!]
- \_\_\_ B. Explain how static electricity works
- \_\_\_ C. State the type of static electricity technology you will investigate

### **Paragraph 1**

- \_\_\_ A. Explain how a particular static electricity technology is used to solve a specific problem
- \_\_\_ B. List some facts or details that illustrate the problem to be solved
- \_\_\_ C. Provide an example of how this technology solves the problem

### **Paragraph 2**

- \_\_\_ A. State the benefits of this type of static electricity technology
- \_\_\_ B. List some facts or details that illustrate these benefits
- \_\_\_ C. Provide an example of the benefits of this type of static electricity technology

### **Paragraph 3**

- \_\_\_ A. State the drawbacks of this type of static electricity technology
- \_\_\_ B. List some facts or details that illustrate these drawbacks
- \_\_\_ C. Provide an example of the drawbacks of this type of static electricity technology

### **Conclusion**

- \_\_\_ A. Restate how this type of static electricity technology solves a problem
- \_\_\_ B. Review the benefits and drawbacks of using this type of static electricity technology
- \_\_\_ C. Make a recommendation for future use of this type of static electricity technology [leave the reader with something to think about].

## ASSESSMENT: Uses of Static Electricity Technology

### Criterion A: One World

One world enables students to gain a better understanding of the role of science in society and allows them to explore how scientific developments and applications are applied and used to address specific problems or issues in local and global contexts.

Level	Descriptor	Student assessment	Teacher assessment
<b>0</b>	<i>The student does not reach a standard described by any of the descriptors given below.</i>		
<b>1-2</b>	<p><i>You state, in simple terms, the way(s) in which science may be applied and used to address specific problems or issues in a local or global context. States the problem that static electricity technology can solve.</i></p> <p><i>You comment on the effectiveness of science and its application in solving the problem or issue.</i></p> <p><i>Limited or often inaccurate use of real life examples to illustrate the effectiveness of static electricity technology</i></p>		
<b>3-4</b>	<p><i>You describe how science is applied and how it may be used to address a specific problem or issue in a local or global context. Describes the problem that static electricity technology can solve.</i></p> <p><i>You describe the effectiveness of science and its application in solving the problem or issue.</i></p> <p><i>Uses real life examples to illustrate the effectiveness of static electricity technology is sometimes inaccurate.</i></p> <p><i>You describe the implications of the use and application of science interacting with at least one of the following factors: moral, ethical, social, economic, political, cultural and environmental.</i></p> <p><i>Describes the benefits and drawbacks in using static electricity technology, from more than one factor with mostly valid explanations.</i></p>		
<b>5-6</b>	<p><i>You explain how science is applied and how it may be used to address a specific problem or issue in a local or global context. Explains the problems that static electricity can solve.</i></p> <p><i>You discuss the effectiveness of science and its application in solving the problem or issue.</i></p> <p><i>Uses real life examples to assess the effectiveness of static electricity technology.</i></p> <p><i>You discuss and evaluate the implications of the use and application of science interacting with at least two of the following factors: moral, ethical, social, economic, political, cultural and environmental.</i></p> <p><i>Discusses and evaluates the benefits and drawbacks of using static electricity technology from a variety of factors with valid explanations.</i></p>		

## Criterion B: communication in science

Communication in science enables students to develop the communication skills to become competent and confident when communicating information in science.			
Level	Descriptor	Student assessment	Teacher assessment
<b>0</b>	<i>The student does not reach a standard described by any of the descriptors given below.</i>		
<b>1-2</b>	<p><i>You use a limited range of scientific language correctly.</i> Attempts to use some scientific terms but with significant errors.</p> <p><i>You communicate scientific information with limited effectiveness.</i> Essay is structured in paragraphs and sentences but does not follow the provided outline</p> <p><i>You make little attempt to document sources of information.</i> Attempt to site sources of information but fewer than three sources are used.</p>		
<b>3-4</b>	<p><i>You use some scientific language correctly.</i> A small range of scientific terms are used in the correct context and where appropriate or with minor errors.</p> <p><i>You communicate scientific information with some effectiveness.</i> Essay follows the paragraph structure as per provided outline.</p> <p><i>You partially document sources of information.</i> Bibliography of at least 3 information sources</p>		
<b>5-6</b>	<p><i>You use sufficient scientific language correctly.</i> A wide range of scientific terms are used in the correct context and where appropriate.</p> <p><i>You communicate scientific information effectively.</i> Essay follows the paragraph and sentence structure as per provided outline.</p> <p><i>When appropriate to the task, you fully document sources of information correctly.</i> Bibliography of at least 3 information sources (or more as appropriate to content of essay) in Chicago format.</p>		