



INTRODUCTION

Learning the language of science will help you better understand scientific concepts and improve your communication skills. This handout will guide you through learning a specific scientific term. At the end, you'll create a card, poster, or slide to help you remember that term.

PART 1: Finding Out What You Already Know

Following your instructor's directions, select a scientific term to learn. Fill out the following items based on your term.

1. **Term.** Write down the scientific term you selected.
2. **Initial Ideas.** Before doing any research, record your initial thoughts about this term and how it could connect to other things you know. This will help you relate the term to your current knowledge and prepare you for learning more about the term.
 - a. You could think about how the term is used in everyday conversations (if at all), how it is used with other words in your class, or any similarities to other terms you know (including words in other languages).
 - b. Write a list or draw a diagram/map of your thoughts below.

PART 2: Learning More about the Term

Now do some research to learn more about the term. You could use websites, textbooks, or other reference materials recommended by your instructor. Fill out the following items based on what you learn.

3. **Definition.** Write a definition for the term *in your own words*. Use everyday language that you can understand and explain to others.
4. **Properties.** Describe some specific properties, characteristics, or traits of what the term describes.
5. **Sentence.** Write at least one sentence that uses the term in a meaningful way.

PART 3: Strengthening Your Understanding

You can strengthen your understanding of the term by representing it in different ways and connecting it to other things you know. Fill out the following items to build your understanding of the term. Some of these items may be optional; check with your instructor if you are unsure.

6. **Translation.** Write a translation of the term in your home language (if not English).

7. **Related Words.** List other terms, topics, or concepts with which you associate this term.

8. **Examples.** Describe specific examples of what this term includes or indicates in science. Pick meaningful examples that will help you remember the term.

9. **Non-Examples.** Describe specific examples of what this term does *not* include/indicate in science. This could be a meaning of the term in everyday conversation that is different from its meaning in science.

10. **Picture.** Provide an image, photo, or diagram that represents the term. You can draw a picture yourself or find an image from a website, textbook, or other source.

11. **Other.** Record any other information that would help you better understand this term — for example, other descriptions, analogies, or alternative representations.

PART 4: Creating a Graphic Organizer

You will use your responses above to create your own **graphic organizer**: a visual chart that you can use as a learning tool. You can reference this organizer in the future to help you remember the scientific term.

12. Get a copy of the “Scientific Term Organizer” template from your instructor. This will be a card or a poster with some sections for you to fill out.
13. Fill out the top section with the “**Term**” (Item 1 above) and the section for the “**Definition**” (Item 3 above).
14. Fill out the rest of the organizer with **three** more of the items from Parts 1–3 above. Your instructor may tell you which three items to pick, or they may ask you to pick your own.
 - a. If you are picking your own items, choose the three items that were most useful for your understanding of the term.
 - b. Some examples of completed organizers are shown below.

This example used “Properties” (Item 4), “Examples” (Item 8), and “Picture” (Item 10) for the three extra sections.

SCIENTIFIC TERM ORGANIZER

Autotroph	
Definition	Properties
<p>An organism that makes its own food.</p>	<ul style="list-style-type: none"> • Makes food using sunlight (photosynthesis) or chemical energy. • Eaten by other organisms (heterotrophs). • Are producers in food webs.
Examples	Picture
<ul style="list-style-type: none"> • Plants • Algae • Bacteria 	

This example used “Properties” (Item 4), “Examples” (Item 8), and “Non-Example” (Item 9) for the three extra sections.

SCIENTIFIC TERM ORGANIZER

Theory	
Definition	Properties
<p>A broad explanation for a lot of different observations in the natural world.</p>	<ul style="list-style-type: none"> • Backed by a lot of evidence. • Accepted by the scientific community. • Never shown to be false. • Can still change with new evidence.
Examples	Non-Example
<ul style="list-style-type: none"> • Theory of evolution by natural selection • Germ theory • Cell theory 	<p>Different from how we use "theory" in everyday conversation to mean "guess."</p> <p>"My <u>theory</u> is that the exam will be really easy."</p>

- Repeat the steps above for each scientific term you are assigned.
- Continue reviewing your organizers over time to help you remember and practice using the terms. Revise or expand your organizers as needed as you learn more.