

# -- Content --

## Reading and Outlining

### --- WHAT IS BASIC CONTENT? ---

When I speak of basic content I am referring to the facts that you will learn during this course. Learning basic life science facts is an important part of a good education. You need to understand basic life science information so that you may reach the following goals:

- A) feel comfortable about the way your body functions;
- B) better appreciate your environment;
- C) build a solid foundation for the required high school classes in health and biology.

Some examples of basic content in life science are the following: 1) The names and functions of the parts of the digestive system; 2) The names of the different groups of living things on earth, and the reasons that scientists place each type of organism in its particular group; 3) The parts of the water cycle and how they affect each other.

You can see from these examples that basic content involves naming things and learning how things work. It is the information that is studied by nearly everyone who completes a course in life science -- no matter how different their school, their textbooks, or their teacher's methods.

I hope that learning basic life science content will make you want to learn more on your own. These are exciting times in the field of life science. Much is being learned about our bodies and our environment. With the internet, most of this information is at our fingertips!

### METHOD OF COVERING CONTENT

How will we cover this basic content? For the most part, you will learn these basic facts through your study of the text's lessons. I selected this text in part because it presents life science content in small, readable lessons. I am confident that you will be able to read and understand the material in these lessons.

My role in this part of the course includes the following:

- 1) I will clarify major concepts and answer your questions after you read each assignment. In most cases, students who read carefully will not need my assistance. However, I must stress that it is very important that you ask for help whenever you read something that is not clear. The odds are high that if something in the text confused you, it confused at least some of your peers; don't hesitate to ask!
- 2) I will provide you with activities that help you to understand and enjoy the reading material.
- 3) I will test you on your level of comprehension of the material.

It is important that you begin with a patient, positive attitude. The opening lesson ("What are living things?") is a review. By lesson 2 ("How do scientists study living things?") you will discover some new information. Flipping through the book's pages will reveal that you have a great deal of exciting learning ahead!

Of course you will encounter a number of new science facts and terms. New terms are defined and new concepts described using straight forward language.

While you are expected to complete the text's review questions on your own, it is certainly acceptable to discuss the content of a lesson and to support each other in understanding the material. If a careful reading (and sometimes a rereading) leaves you confused, don't panic. See if the glossary's definition helps. Ask a parent. Ask a friend. Ask me!

## STEPS IN COMPLETING THE LESSONS

### I. Text overview

#### A. Table of Contents

Look over the Table of Contents in order to get a feel for the information that we will be covering. There are 10 Units, with each Unit divided into a number of Lessons. I will capitalize the words "Units" and "Lessons" when referring to these big parts of the text.

Now and then it may be useful to look back at the table of contents to recall the overall plan of the book.

#### B. To The Student (immediately following the Table of Contents)

Read this short message from the authors of the text. As they describe the parts of a Lesson, turn to Lesson 1 to view an example.

#### C. Glossary

Glance at the glossary in the back of the book. This section can be an aid to understanding terms if the explanation in a lesson leaves you a bit "fuzzy."

#### D. Index It might be interesting to see if a term is used in other places in the book.

### II. Reading, outlining, and studying

If you like, feel free to read ahead. However, please be aware that some Units may be assigned in a different order than listed in the Table of Contents.

In some cases, you will be required to outline what you read, but there will also be Lessons that are not outlined.

You will be given at least a few days notice prior to each test.

## --- READING SCIENCE CONTENT ---

Reading speed should not be the same for all materials. You certainly would not expect to read (and understand) a math problem as quickly as you would a graphic novel. Most science material is rather slow reading. This is especially true of science textbooks, since the authors are trying to cover much information in a short space.

However, do not equate *slow* reading with *dull* reading. The material that you will read is very interesting. It is simply not the type of material that you should expect to understand unless you read thoughtfully.

Each Lesson begins with a section entitled **Exploring Science / Historical Steps**. Its intent is to catch your interest. In most cases this is material that will only show up on a test as a bonus question. Often, you will be introduced to an important discovery or a famous scientist.

After the Exploring Science / Historical Steps section, comes the remainder of the Lesson. We will refer to this portion as the lesson, with a small "l." This section is generally *packed* with content. Every sentence may contain something important. Misreading even one word may leave you confused. Not only must this material be read slowly, sometimes it must be reread.

### TIPS ON READING SCIENCE EFFECTIVELY

#### 1) Take a "Quick Look"

Before you begin reading, take a quick look at the Lesson. This "quick look" (steps A, B, C) should take less than **15 seconds** to complete. You are alerting your brain to prepare for incoming information. This helps the brain decide where to store the new material.

Students are often anxious to "dig in" once they begin a Lesson. However, those who develop the habit of the Quick Look, will actually be saving time. The few seconds spent on this will make reading easier to understand. Equally important, the material will more easily be remembered - so studying for quizzes or tests will be less time-consuming.

## The "Quick Look" Steps

- A) Notice the **title** of the Unit (for example, "Living Things in Their Environment") and the title of the Lesson ("What Are Living Things?"). These titles clue you in to the main points of the Lesson.
- B) Scan the following items:
  - a) the **headings** of each section,
  - b) any **subheadings** within a section,
  - c) any **bold printed words** (For now, scan only the words, not their entire sentences).
- C) Look briefly at the **illustrations** and their captions. You will likely need to carefully observe the illustrations later (as you read), but that is not the purpose of this quick look. At this point you simply want to make yourself aware of which items are illustrated. Too often students concentrate so strongly on understanding the written material that they fail to take notice of illustrations that might simplify the information.

### 2) Read carefully

Read the lesson's material carefully, stopping to study illustrations when appropriate. If you own this book, as you come across **bold printed** words that are new to you, underline them. This movement of your fingers and hands actually helps your brain to remember the information. You are welcome to underline more (such as a key phrase that defines a term), but avoid overdoing it. Your goal is to make *small* pieces of information stand out.

### 3) If a sentence is unclear

What if you read a passage that is a bit confusing, despite your careful pace? First, continue to read a bit further. Very often your confusion will be cleared up in the next sentence or two. If not, then you should reread, and obtain support.

## --- OUTLINING ---

An outline is simply putting words in a logical pattern. The human brain loves patterns! We are always seeking patterns. We remember patterns much easier than items that are not in a pattern.

Just what is the pattern of an outline? It is simply small points that are indented under a bigger point! The big points are often called "topics" (or "main topics"); the small points are called "subtopics." The challenge is deciding which points fit where. For most people, this simply takes practice.

Outlining is truly one of the most important skills that you should develop in middle school. It is vital that you are able to outline well prior to high school (where the amount of content covered will increase).

Outlining is not a skill with which people are born. It requires effort and practice. Once mastered, you will forever be better able to remember information. This course provides you with an opportunity to greatly improve this very important skill. It is likely that this is the last year that teachers will offer this level of support. Most high school teachers assume that students have learned to outline.

We will not be outlining every lesson. To simplify things, we will only outline the "lesson" portion, (not the "Exploring Science / Historical Steps"). When an outline is assigned, you will usually be given two nights to complete it. For most students, producing an outline will take fifteen to twenty-five minutes.

I urge you to make this the year that you truly master outlining. Each of your early attempts should be completed in considerable detail. Once you have demonstrated that you are able to outline well, you will have the option to produce less detailed versions.

In addition to taking advantage of my outlines (explained below), I urge you to **share your progress with your parents**. Every "outliner" selects some techniques that they prefer; you will likely decide to adopt some techniques that others use.

## WHAT OUTLINING IS, AND IS NOT

Many students feel that they know how to "take notes," and mistakenly believe that they know how to outline. If you take notes in paragraph form, you are not outlining. If you take notes in a list (where each item appears equally important), you are not outlining. Both of these methods leave you with notes that do little to help you remember information.

Your goal is to greatly shrink the information. You want to use *many* fewer words than were in the reading. You write phrases, not sentences. You record the key words that convey the idea, and omit (leave out) most of the rest! However, you don't just record these phrases in any fashion, you organize them into a pattern. [Keep reading.]

There is nothing magical or tricky about outlining. To repeat, outlining is simply placing subtopics under main topics. To show that certain subtopics fit under a main topic, you indent the subtopics. To accomplish this, you must read with enough care to decide which ideas *are* the main topics, and which subtopics fit under each main topic.

Developing the skill to read and write in this way will help you in **every course that you take**. After you have trained your brain to read for outlining, you will be better able to see how the parts of things fit together. In other words, you will be better at analyzing information.

## HOW THIS COURSE WILL HELP YOU IMPROVE YOUR OUTLINING SKILLS

First, each sincere attempt to produce an outline will receive full credit. The goal is to have everyone gain this skill.

For each lesson that you outline, I will share with you a good version that lesson's outline. You are expected to carefully compare your attempt with mine. Further, you are encouraged to take each of my outlines home. (After a few days, I will collect my versions of the outlines).

Based on what you see while comparing, you are welcome to make improvements in your outline - but this is not required. The important thing is to understand how to make your next outline better.

For at least a couple of these outlines, we may share our attempts in small groups. We want to help each other discover ways to improve. In addition, I will collect one or two of your attempts and provide you with written feedback (see below).

With a sincere effort, you will "catch on" to outlining. Do not become frustrated if your early attempts are only somewhat similar to mine. What should gradually become very similar is the overall layout of main topics followed by (indented) subtopics.

## GENERAL OUTLINING TECHNIQUES

**A).** Here are a few **requirements** for outlining in this class:

**1)** Unless there is a good reason to do otherwise, do not use a computer. Why not? While there are computer programs that help put phrases into outlines, the computer expects the user to decide which phrases are main topics, and which are subtopics. It doesn't actually "know" how to outline.

It is not only the product (the outline) that is important. The "brain work" involved in creating an outline is what makes you a more powerful learner.

In addition, when your hand and fingers actually move a pencil, more areas of your brain are involved (than when you click on a keyboard). The result? Better memory of information!

On the other hand, for a small percentage of students, moving a writing utensil is truly something that makes learning *more* difficult. If you know (or believe) that you are in this category, simply have a parent communicate with me.

**2)** Use a **pencil**. This allows you to easily make changes.

**3)** Use loose-leaf paper, with **full-sized lines** (not "college ruled" with the thinner lines).

4) Keep your sheets in a binder. This provides you with more flexibility in note-taking. Should you misplace your binder, you may simply use a sheet of paper, then later add this sheet into your binder.

Loose papers are also easier to arrange for studying. You may remove only the sheets that you need. You might want to carry these sheets with you while riding in a car, or walking a pet, or relaxing on a porch swing!

5) Indicate what material your notes cover. At the top of the page write, **very largely**, the Unit number and Lesson number. This involves simply four notations. For example, instead of writing "Unit 1, Lesson 1," you simply write "**U-1 L-1**." You may even omit the dashes and write "**U1 L1**."

6) Use a **symbol** to begin every phrase that you add to your outline. [Keep reading].

7) Use the same symbols for ideas of similar levels of importance (throughout this particular outline. And here is a vital step -- keep these symbols **directly under** each other.

Below are two examples of good outlines:

**example A**

- I. People of America
  - A. natives
  - B. immigrants
- II. Industries in America
  - A. rural (country)
  - B. urban (city)

**example B**

- \* People of America
  - natives
  - immigrants
- \* Industries in America
  - rural (country)
  - urban (city)

In example **A**, the Roman numerals are used for the main topics, while capital letters are used for the subtopics (that fit under each main topic).

In example **B**, an asterisk (\*) is used for the main topics, while a single dash (-) is used for the subtopics.

You may use whatever symbols you like. However, as stated above, once you select your symbols you must stick with them throughout this particular outline. In this way, when using your outline to study, it will be easy to detect the pattern of main topics vs. subtopics.

There are some advantages for each of the two styles shown above. If (in your notes) you want to tell yourself to view a specific area of your outline, the style in example A makes this easy. For example, you may remind yourself to "see p.13, A. II".

With the style shown in example B, it is difficult to be as precise, since you have used symbols throughout the outline. However, if you want to take notes very quickly (for example, during a teacher's lecture) the method in example B is probably the better choice.

If you decide upon the style of example B (using symbols), there are some symbols that you must avoid. Do not use the "plus sign" (+), a zero, an 'x', a 't', or a 'vertical line' as symbols; these are too easily confused with letters of the alphabet.

You will notice that, in the outlines that I share with you, I use dashes, dots, and symbols - such as triangles and squares. This style was developed while taking notes on teachers' lectures. However, if you prefer the Roman numerals and capital letters approach - go for it!

8) Place your outline's first **symbol** just to the left of the paper's *left* margin line. In most cases, this is a light red line. Next, write the first words of your outline just to the right of this margin line.

If the paper that you are using has a *right* margin line, ignore it. In other words, do use the space to the right of this right margin line.

9) Start each entry by putting the **key terms** at the beginning. For example, you should write...

- **skeletal muscles** move bones

instead of

- bones are moved by **skeletal muscles**.

Why is this important? The final product - the outline of the lesson - shows a pattern. In this way your view has the key information near the left side of your page - not randomly scattered around the page. Remember, the brain loves patterns!

10) Often, place new (often bold-printed) terms on their **own line**.

For example, you might write....

- **petals**

> protect the inner parts

> attract pollinating insects

Putting 'petals' on a line by itself enables you to use an index card, uncover this term, then slowly slide the card to the right and uncover the two ">" symbols (but not their phrases). This allows you to ask yourself if you can state the phrases. This "covering-and-quizzing" is one of the key advantages of producing a good outline. Studying is efficient.

It should be obvious, now, why it is vital to keep the same type of symbols directly under each other. As you move your index card, you are able to see how many subtopics exist, and then to ask yourself which of them you recall.

11) To create each indent, leave a space about the width of your finger. Indents smaller than this make it hard for your brain to detect the pattern of the outline. Indents larger than this consume too much space; this may cause you to run out of room on that particular line.

What if you do, in fact, run out of space on a line? Simply go to the next line, but resume writing directly below the first word of that particular note. Do not write in the indented space. By leaving this indented space empty, you maintain the outline's pattern (with the subtopics clearly indented below main topics).

12) Underline items that you consider to be especially important. This will be particularly helpful when you use your notes to study for a quiz or test. Of course, if you are taking an open-notes test, your underlines will help you to quickly locate items.

13) Rarely skip lines. Only skip a line between major topic shifts. In most cases you should skip no more than *one* line during an entire lesson's outline. Skipping many lines needlessly lengthens your outline; this can lead you to feel you have more to memorize than is actually the case.

14) Include in your outlines **all bold printed** words from a lesson, and copy the spelling of these words accurately!

I need to elaborate on this a bit. When words are bold-printed it means that they are important. If you are careless in copying these words, you are 'fixing' in your mind the incorrect spelling. This is not only unwise, it could lead to embarrassment later!

15) Leave out unnecessary words. For example, the following words may usually be omitted without losing the meaning of an entry:

-the      -a      -of

16) Do not use the final line of paper to introduce a new term or topic.

**B).** The following are tips that you *may* use while outlining. However, you are not required to use these suggestions.

- 1) Date your outlines at the top of your paper.
- 2) In the left margin of your notes, jot down the text's page number from which you took this note. This can be a real time saver as you study for a test. (Note: If the book is one that you intend to keep, in the margin of the text you may occasionally want to jot down the page number of your notes that matches a particular piece of information).
- 3) Circle or "box in" certain *very* important items of your outline.
- 4) Use colors to highlight. This is especially helpful as you memorize points for a test.
- 5) Use dittos to avoid rewriting words that need to appear directly below the same words.
- 6) Use arrows to point back to previous notes (rather than rewriting information).
- 7) Use shorthand symbols for frequently used words

-with ----- w\	-increase ----- ^
-after ----- p	-decrease ----- v
-about ----- a	-greater than --- >
-similar to -- ~	-less than ----- <

- 8) When a list of more than three items needs to be recorded, write vertically (down the page), rather than horizontally (left to right). The resulting pattern is easier to memorize.

It is also better to make two or more short columns of items (side by side), rather than producing one long one.

- 9) Invent shortcuts for words that appear repeatedly. For example, for outlines dealing with science, you might draw a sun to indicate the word "outside."
- 10) Sometimes, the author of a textbook, or the speaker during a lecture, will sidetrack. This leaves you wondering, "Should I include this in my outline?" It is usually better to be safe than sorry. So, continue to outline the information, but use brackets [ ] to let yourself know that this information is not part of your main outline.

## **TIPS ON OUTLINING THIS TEXT EFFECTIVELY**

- Before you begin to outline a lesson, read at least a sentence or two. This will give you a feel for how the author arranged the material.
- Remember to notice the **illustrations** and **captions**. Authors frequently use illustrations when they feel that a piece of information is especially important (or when the information is somewhat difficult to understand). You may want to sketch (or even trace) some of the author's illustrations. Alternatively, you might include a note to yourself to review a certain illustration before a test.
- In the captions of an illustration, on rare occasions, the author may include some important information that is *not* in the lesson itself. If this occurs, the information definitely should be included in your outline.

## TEACHER FEEDBACK ON YOUR OUTLINES

Throughout the year, I am available for one-on-one help. Simply bring your outlines to me during study periods or outside of the school day.

Early in the year, I will likely collect one or more of your outline attempts and provide you with written feedback. I will use the symbols listed on the next page. After you receive my feedback, you will be provided my version of the outline. Please make certain that you understand my markings.

If you are having difficulty grasping how to outline, it is wise to reread a lesson, sentence by sentence, while looking carefully at each step of my version of the lesson's outline.

Remember, after I have skill-checked an outline, you are encouraged to share your attempt with others - particularly those in your home who are older than you!

### Your Status

[At the top of your outline I will often indicate your "status," using the following symbols.]

**\*** = I encourage you to see me for help as soon as possible

**Br** = too brief; if this happens more than once, it will not be counted as a homework credit

**SO** = some key omission(s); with these items left out, I am unable to judge your skill level  
[Note: This may be a sign of inadequate effort.]

**SE** = solid effort

**SG SCnf** = some areas show good outlining, but some areas show confusion

**Fair** = well done on many areas, but some areas were either omitted or not properly outlined

**CI** = "close;" quite a bit of good outlining, but not enough to earn a  $\checkmark$

**V.CI** = "very close" to a 'perfect' outline, but you made a significant error that kept you from a  $\checkmark$

$\checkmark$  = your outline demonstrates demonstrates mastery of the basics of outlining

## Symbols that I use within your outline

**b.h.** = **begin here**; put the first symbol to the left of the left margin line

**cnf** = confusingly worded; it is difficult to understand what you've written

**def** = need to **define** the term

**dr?** = need to include a drawing

**ex.** = need to add an example that the book mentioned

**ind** = **indentation** is too large or too small

**key 1st** = need to begin this note with the key term, rather than embed the key term in the note

**listing** = you are making a list; treating all topics as if they are of equal value rather than indenting subtopics under their appropriate major topics.

**ol** = this term deserves to be on its **own line**;  
(avoid putting the first subtopic on the same line as the main topic)

**par** = writing small **paragraphs** instead of outlining

**skip** = avoid skipping this line

**so** = **some omission**; left off some information that deserved to be included

**so<sub>f</sub>** = omitted the **function** of a structure

**sub** = the item I bracketed should have been considered to be a **subtopic**, not a main topic  
(thus, it needed to be indented under the appropriate main topic)

**sym** = inconsistent use of **symbols** at the beginning of each entry  
(it is vital to keep the same symbol throughout an outline)

**UL** = need to **underline** at least some of the key words of the lesson

**URt** = **use the right side**; no need to avoid using the area to the right of the right margin line

**wiis** = **writing in indented space**; If a note needs to extend to an additional line, be sure that  
(on the new line) you begin directly below the first word of this particular note.

**a stair step** = making every new item a new subtopic, so you end up with a "stair step"

**a downward arrow** = giving more detail than needed; leave out minor details

-> <- = use phrases instead of complete sentences; try to use fewer words

**slashed short words** = need to omit unnecessary words like "a" "the" "of"

**a wavy line** = the portion marked through with the wavy line is unneeded

**???** = for this section of your notes, you seem to be a bit confused about the reading material

**a vertical line** = need to keep your symbols directly under each other  
(the line demonstrates how your symbols are not lined up - breaking the pattern)