Maximize Comprehension by Marking Your Texts

Before Reading - Set a goal to focus learning

1. Set a purpose. Identify what you wish to learn through reading a section of text.
2. Ask questions of the section. Identify what information you want to learn from a section before reading it. Your question(s) can help you focus on what is important and decide what to mark. You will annotate the answers to that question.

During Reading - Annotate the text to identify the most important content

3. Read a little first and then underline selectively. Make conscious decisions about what to underline and limit the amount. Too much underlining is difficult to study later and often becomes a mechanical process that requires little thought.
    - Read a paragraph or two of material first and then go back and underline only the words and phrases that most accurately state what that chunk of material is mainly about.
    - You may want to limit your underlining to a particular type of information (definitions/explanations of key concepts)
4. Circle or box specialized vocabulary. Write brief meanings in the margin if you need to. You need to know these terms to understand the textbook and the lecture. Later you'll need to know them for the exam.
5. Label Examples (ex). When encountering an example, determine what main idea it exemplifies and label it. Add a bracket [to the side to mark the example and write a one-word label in the margin to indicate the concept it exemplifies.
6. Number important ideas in a series or process. Add numerals to indicate a list of important information in the text. When you see words/phrases such *as first, next, finally*, or *there are several reasons*…, add numbers to each part to help organize the information.
7. Jot down main ideas in the margin. At the end of a paragraph, stop and ask yourself, "What was most of that paragraph about?" Write the answer in as few words as possible in the margin.
8. Write questions as you read. Questions help you think, relate the new material to what you already know, and wonder about implications and applications. All these mental activities help you learn the material in the first place and remember and use it later.

After Reading – Choose one method below to pull together the information you just learned

9. Write summaries at the end of each section of material. Use the white space throughout the book to write summaries. Write in brief phrases in your own words. Your summary should answer the heading question or the general question, "What was this about?"
10. Make outlines to organize the key ideas and their relation to each other. Rephrase points briefly in your own words. Transitional phrases (but, and, including, however, next) can help you identify how one thing relates to another.
11. Make maps. Isolate and organize essential ideas and how they relate to each other. Map major sections to visualize them and thereby understand and remember them. Transitional phrases can help you identify how one thing relates to another.

1 object; yet both propelled by 3d law. Why?

Newton's third law of motion

Although we commonly talk of single forces, Newton recognized that it was impossible to have just an individual force. Rather, there is a mutual interaction between two objects, and forces always occur in equal and opposite pairs. An example given by Newton was that if you press on a stone with your finger, the finger is also pressed upon by the stone. That is, if one object exerts a force on a second object, the second object exerts a force on the first. This is like saying that you can't touch without being touched.

Newton termed these forces *action* and *reaction*, and his third law is commonly expressed:

For every action there is an equal and opposite reaction. Or, alternately, for every force there is an equal and opposite force.

This third law may seem contradictory to the second law, but it is not. The second law is concerned with a force acting on a given body of mass m and its resulting acceleration. The force pair of the third law acts *on different bodies*. Consider the third law in the familiar context of firing a rifle. . . . When the charge explodes, the bullet is accelerated down the barrel. It is acted upon by a force (an action), as evidenced by its acceleration. The reaction force acts on the rifle and it is accelerated in the opposite direction, which gives rise to the backward recoil or "kick" of the rifle. According to Newton's third law

$$F_{action}' = -F_{reaction}$$

where the minus sign indicates the opposite direction to the action. . . .

Newton's third law is incorporated in many applications. . . . Exhaust gases from burned fuel are accelerated out the back of rocket and jet aircraft engines, and the rockets and aircraft are accelerated forward by the reactive forces.[1]

3d law
2 objects exert force on each other
action
force in one direction
reaction
opposite direction, equal force.
cf. 2d law
ex.
ex.
3d law: F=-F
action - reaction
reaction forces propel rockets forward
[Kick not equal in all rifles]

1. *bring up in class.*
2. *Selective underlining.*
3. *Main idea in margin.*
4. *Transition boxed.*
5. *Specialized vocabulary circled and defined.*
6. *Examples identified.*
7. *Summary at end of section.*
8. *Observation in [ ].*