

What's In Your Backpack? – Preparing for Middle School Science Success

HOW TO STUDY SCIENCE



Science knowledge is cumulative. That means that one bit of knowledge builds on another. For that reason, it is important that you understand each day's information, because what you learn tomorrow will depend on what you know today.

Learning

1. Figure out your learning style.
 - ❖ Some people are **auditory learners**. Do you learn best when you hear information; for example, a teacher's lecture, class discussions, an auditory tape, or talking to yourself?
 - ❖ Some people are **visual learners**. Do you learn best when you see the information; teacher's writing on the board, pictures, diagrams, graphs, written notes, flash cards, information on overhead projectors, etc.?
 - ❖ Some people are **tactile learners**. Do you learn best when you move about and handle things? Do you do best in hands-on situations?
2. Use your learning style whenever you can. It is your strength.
3. Use all your senses. Combine styles whenever possible.

Let's Get Started

Before Class

1. Re-familiarize yourself with the information before class. Quickly re-read sections of the chapter that will be covered by the teacher.
2. Write down questions that were generated from your reading to ask your teacher in class.

During class

❖ Be prepared for anything

Collect the phone numbers of two or three of your classmates who can be called if you forget school information or have a question during the evening. Make sure that they are dependable.

❖ Stay Organized

Write all homework and assignments in your agenda book. Make sure to include all directions and dates that the assignments are due.

❖ Taking notes in class

1. Be on time and be prepared.
2. Pay close attention and focus on what your teacher is saying.

3. Take good notes, but try to learn directly from what the teacher is saying in class.
4. Take class notes on the right side of your notebook page, and leave the facing left page to add related notes that you take from your text.
5. Write down as much as possible (don't assume that you'll remember).
6. Listen for "signal statements" that let you know that the teacher is about to say something important that you should write down in your notes. Some signal statements are "This is important because...", "Remember that..."
7. "The most important point..." Listen for concepts, rules, formulas or problems that the teacher emphasizes.
8. Include things that the teacher repeats or writes on the board.
9. To be sure that you get down all the important information, use short sentences, symbols ("% " instead of percentage, "& " instead of and, etc.), and abbreviations (w/o instead of without, b/w instead of between, etc.) whenever possible.
10. Put a question mark next to information you are not sure about.
11. If you miss something, write down key words and ask the teacher about it right after class.
12. Compare notes with other students to be sure that you didn't miss anything.
13. Ask questions if you do not understand something the teachers has said.

After Class at Home

Review of what you learned during the day begins after class and continues at home.

Reviewing what you've learned

1. Look over the notes you take in class every day.
2. Re-write your notes making them neater and more organized.
3. Look up any information that you have questions about and make any necessary corrections in your notes.
4. Combine your class notes with notes from your text book.
5. Make flash cards with terms you want to remember.



Reading the Text

1. Read your science book carefully. Do not skim or speed read.
2. Scan the chapter before you begin reading.
3. Read the title, introduction, headings, and the summary or conclusion.
4. Examine all visuals such as pictures, tables, maps, diagrams, charts, illustrations, and/or graphs and read the caption that goes with each.
5. Use the headings to form questions about what the section is about, asking what, where, why, how (A heading that says, "Types of Energy", you would ask, "What are the types of energy?").
6. Read the information under each heading.
7. As you read, highlight the headings and bolded words or words in italics.
8. Take notes and write the headings and the answers for the questions under each section (**stop at a new concept and write it down).
9. Write down terms you do not understand and look it up or ask the teacher.
10. Don't fall behind in your reading. Study skills build every day. Don't cram.

What is different about reading in science?

1. Readings contain large amounts of specific facts and details.
You have to understand the information in order to process the details.
2. Science vocabulary is important. Understanding this vocabulary helps you to understand the information.
Reviewing the terminology before you begin reading helps you to understand the information (science vocabulary is usually bolded or italicized).
3. There are numerous diagrams, figures, charts, and graphs. They help you to understand and remember the information (you should take time to study them before you begin to read).
4. Research is an additional part of the information. You must understand the basic ideas in order to read and understand the research. Research takes an idea, analyzes it, synthesizes it, and extends it.



How does one read science?

1. Look over the chapter before you start reading—look over titles, introductions, subheadings, the first few sentences beneath the subheadings, figures, diagrams, italicized or bolded words and terms, and summaries. As you look over the chapter, ask yourself:
 - What is this about?
 - What do you know (or don't know or don't remember) about this?
 - Where does the author begin and where is he going?
 - What is the organizational pattern (relationships, chronological, topics?)
 - How does it fit into what we are learning in this class?
 - How difficult or how easy is this?
 - Are there vocabulary words that are unfamiliar or that I need to review?
 - How important is this information (are there parts can skim and get the main idea?)?
 - Where can I make reasonable breaks in the reading to divide up my study time?
2. Read the chapter (Use tips provided in “Reading the Text”).



Preparing for class

1. Make it a habit to review your agenda every night.
2. Work on assignments right away (Begin with the ones that are due first).
3. Have all homework and assignments completed and ready to be turned in on time.
4. Have all your assigned reading done.
5. Place all homework/assignments in your bag as soon as they are completed.
6. Place everything needed for class the next day (agenda, textbooks, homework/assignments, supplies- notebook or paper, pens, pencils, sharpener) in your bag before you go to bed.
7. Place your bag in the same place at all times so you won't forget it.
8. Put out your clothes and whatever you're going to wear the night before.

Preparing to study

1. Find a place that is quiet and free from distractions.
2. Make sure it is comfortable and well lit.
3. Collect all the materials and supplies (pens, pencils, paper, erasers, calculators, reference sources such as a dictionary, thesaurus, atlas, etc.) that you need and place them in your study spot.

Studying for a Test

1. Use the same place for studying if possible.
2. Eat dinner and turn off your cell phone before you begin so that there is no major interruption to the process.
3. Use study techniques that emphasize your learning style.
 - ❖ Read over your notes and look for things that were stressed by the teacher.
 - ❖ Make a list of major concepts and formulas that were covered.
 - ❖ Read the headings and bolded words in your textbook and be sure you understand each section.
 - ❖ Explain it to yourself like a story.
 - ❖ Record yourself reading your notes on your IPOD/Mp3 player or recorder and play it back to yourself.
 - ❖ Explain the information to your parents, brother or sister.
 - ❖ Write the information on flash cards and have someone quiz you.
 - ❖ Use practice tests to test yourself.
4. Do not leave studying until the last minute.



Before the Test

1. Get a good night's sleep so that you are not tired when you're taking the test.
2. Eat a healthy breakfast (do not over-stuff yourself).

* Breakfast ideas



When someone has too much anxiety about a test, it is called **test anxiety**. It is normal to feel some anxiety when you have to take a test. In fact, a little anxiety can help keep you alert and motivated when you are preparing for and taking the test. However, too much anxiety can keep you from remembering what you need to know for the test and keep you from functioning. It can block your performance and keep you from demonstrating what you know on the test.

How do you know if you have Test Anxiety?

You probably have test anxiety if you answer **Yes** to four or more of the following:

1. I have a hard time getting myself to begin studying when I have to get ready for a test.
2. When I am studying for a test, I find many things that distract me.
3. I expect to do poorly on the test no matter how much or how hard I study.
4. When I am taking a test, I experience physical discomfort such as sweaty palms, an upset stomach, a headache, difficulty breathing, and tension in my muscles.
5. When I am taking a test, I find it difficult to understand directions and questions.
6. When I am taking a test, I have difficulty organizing my thoughts.
7. When I am taking a test, I often go blank.
8. When I am taking a test, I find my mind wondering to other things.
9. I usually score lower on tests than I do on other assignments, even when I know the material.
10. After the test, I remember all the information I could not remember during the test.



What can you do about Test Anxiety?

Here are some of the things that you can do before, during, and after the test to help you reduce some of the anxiety.

1. Do your best to prepare well for the test. This will help you go into the test more confidently. *Use the tips we provided in “**Preparing to Study**” and “**Studying for a Test**”.
2. Get plenty of rest the night before the test.
3. Eat a light, but nutritious meal before the test (stay away from junk food).
4. Have a positive attitude as you study. Think about doing well, not failing.
5. Try to stay relaxed during the test. Taking slow, deep breaths can help. Focus on positive statements such as, “I can do this.”
6. Follow a plan for taking the test. *Use the tips given in “Taking the Test”. Don’t panic even if you find the test difficult-**Stay with your plan!**”
7. Don’t worry about other students finishing before you. Take the time you need to do your best.
8. When you are finished, turn in the test. While you wait for the results of the test, turn your attention to other assignments and tests that are coming up.
9. When the graded test is returned, look it over to see how you could have done better. Learn from your mistakes and from what you did well. Apply what you have learned when you take the next test.

Taking the Test

1. Read test directions very carefully.
2. Ask the teacher to explain anything in the directions that you do not understand before you begin the test.
3. Look over the test and see how much you have to do.
4. Once you've looked over the test, decide how much time you will spend on each part.
5. Complete the easy questions first, and then move on to the other problems in order of their difficulty.
6. If there are different points for sections, concentrate on the sections that are worth the most points first.
7. When working on a problem or question, show all the steps to maximize your chances of increasing your points.
8. If you have time, check your answers and make sure they are complete and accurate.
9. Check the directions again to make sure that you followed it correctly and that you answered all the questions you were supposed to.



General Science Study Tips

The main reason why students do poorly in science is not because they do not have the ability, but because of poor study habits and time management skills. Below are a few suggestions that may help you. It will take time and practice to develop good study skills. Don't give up. It's worth it in the long run.

BRAIN FOOD

Before you study science or take a test, eat some of the following foods. It has been shown that these foods help you remember and do better on tests. These foods are: **apples, pears, grapes, peaches, turkey, fish, lean beef, broccoli, and nuts, especially peanuts.** You can also drink low fat milk and eat low fat yogurt.

How Much Time Should You Spend Studying?

- * There is no specific amount of time that is ideal for studying.
- * You should study for as long as it takes you to understand (not memorize) the information.
- * The important thing is to understand the material, not put it a lot of time.



When Should You Study?

- * Studying should go on at all times. It should not be left until just before a test.
- * Review your notes later on the same day that information is given (it helps you to remember it longer).
- * You not mix study time and play time.
- * Don't get stressed out. For most people, studying for several shorter sessions over a long period of time is better than cramming during one long study session.



General Study Tips (for daily use)

- * Do all assignments right away, not the day (or minute) they are due (this includes reading assignments).
- * Keep a pen/pencil in your hand at all times (studying is an active process).
- * Write terms and concepts over and over in your own words (don't look at your notes or the text book).
- * Reading a textbook is not like reading a novel; read for detail, information, and understanding.
- * Pre-view the material before reading and break it into manageable sub-sections to be tackled one at a time.
- * Read your assignments (textbook also) with the objectives in mind.
- * Moving a card or pencil along as you read may help keep your attention focused on what you are reading.
- * Write key terms, concepts, and your own questions; do not highlight the entire pages of your text book.
- * If you do not understand something that you've read, write down questions to ask your teacher the next time you go to class.
- * Use all your senses write the information, tape it on your mp3 player or recorder, sing it, repeat it to yourself, discuss it with friends or family, draw diagrams or pictures, etc.
- * Study difficult material over and over again.
- * Study by yourself and with classmates.
- * Choose a friend that is serious.
- * Test each other on the information.
- * Spend some time studying and concentrating on you especially to test time.
- * Participate in class activities.

- * **Ask Questions, Ask Questions, Ask Questions!!!**

Basic Keys To Success



Believe in yourself.



Like yourself the way you are, but always strive to be your best.



Respect yourself and others. Look up the word, *INTEGRITY*.



Always do your best, it is a reflection of you.



Have a dream and follow it, but be realistic.



Set goals and work them.



Be ready to make adjustments when necessary.



Never give up. Remember the word, *PERSERVERANCE*.



Recognize your weaknesses, but build on your strengths.