

Get Serious about Study Skills

Better Listening

Keep your ears wide open! You can increase your understanding of science concepts and processes if you listen well. Here are some tips for smart listening. They can help you get involved with the information instead of letting it just buzz by your ears.



1. Realize that the information is important.

Here's what you can get when you listen to someone who is talking to you about science:

- ... details about how a science process works
- ... help answering science questions
- ... examples of problems solved correctly or investigations done correctly
- ... hazards or difficulties you might face when doing a science process
- ... new, exciting information about how something in the world works
- ... meanings of terms used in science questions or assignments
- ... directions for certain assignments

2. Be aware of the obstacles to good listening.

Know ahead of time that these will interfere with your ability to listen well. Try to avoid them, alter them, or manage them, so they don't get in the way.

- ... fatigue
- ... wandering attention
- ... surrounding noise
- ... too many things to hear at once
- ... uncomfortable setting
- ... missing the beginning or ending
- ... personal concerns, thoughts, or worries
- ... talking

3. Make a commitment to improve.

You can't always control all obstacles (such as the comfort of the setting or the quality of the speaker's presentation), but there are things you can control. Put these to work to gain more from your listening.

- ... Get enough rest.
- ... Do your best to be comfortable while you listen.
- ... Cut out distractions. Keep your mind focused on what is being said.
- ... Look directly at the speaker.
- ... Take notes. Write down sample problems the speaker shows or solves
- ... As the speaker talks, think of examples or relate the information to your life.
- ... Pay special attention to opening and closing remarks.
- ... Pay special attention to anything that is repeated.
- ... As soon as possible after listening, summarize or review what you have heard.

Careful Reading



There is plenty of reading in science. Textbooks and other materials explain science concepts and processes. Many science problems are more than just facts or numbers—they include ideas that you need to interpret. All science questions or assignments include some sort of instructions to follow. So, to succeed in science, you need to make good use of reading skills.

Before you read a science assignment or problem, have a clear idea of the purpose for reading. Are you reading to find directions for the assignment? Are you reading to learn how to do a science process? Are you reading to solve a problem? Are you reading to find a particular fact? In all these cases above, you need to read closely and carefully. To learn or review a process, or to solve a problem, you will need to read the information through more than once.

Sample Assignment:

Read the characteristics of echinoderms and the description of each organism. Circle any names that answer the question.

Echinoderm is the name given to one phylum of animals that live in salt water. They have radial symmetry and a tough outer covering of stiff spines. They also have rows of tube feet on the undersides of their bodies. These feet act like suction cups to help the animal move and grab onto food.

Lucy examined several animal species. She noticed that the octopus had bilateral symmetry. The snail she observed could live on land. The starfish had tube feet and a spiny covering. She noticed that the clam had a thick muscular foot and a hard shell covering. The sponge had an irregular shape with no symmetry. The sea urchin and the sand dollar both showed radial symmetry and had spiny coverings. Which of the many organisms that Lucy examined could not possibly be echinoderms?

If you read the problem carefully, you will . . .

. . . find clear directions for the assignment.

*Read the characteristics of echinoderms.
Read the description of the organisms.
Circle any names that answer the question.*

. . . identify the problem that needs to be solved or question that must be answered.

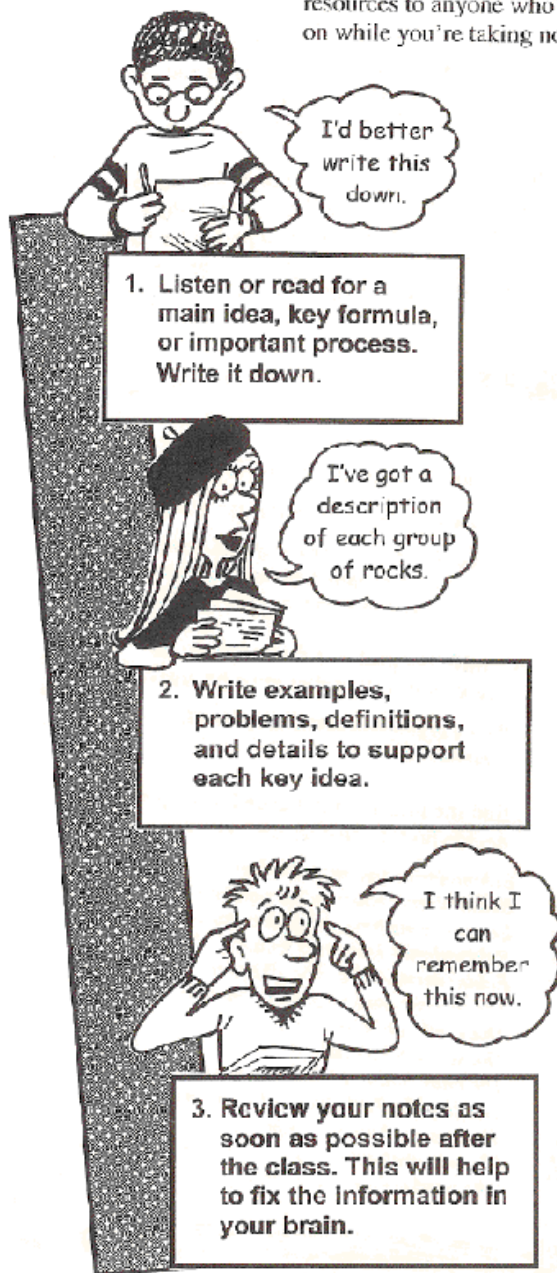
Which organisms could not possibly be echinoderms?

. . . find the information needed to help you decide how to answer the question.

*Echinoderms live in salt water
Echinoderms have radial symmetry.
Echinoderms have a tough outer covering.
Echinoderms have stiff spines.
Echinoderms have tube-like feet.
The octopus had bilateral symmetry.
The snail could live on land.
The starfish had tube feet and a spiny covering.
The clam had a thick muscular foot.
The clam had a hard shell covering.
The sponge had no symmetry.
The sea urchin had radial symmetry and spines.
The sand dollar had radial symmetry and spines.*

Taking Notes

A study skill of major importance is knowing how to take notes well and use them effectively. Good notes from classes and from reading are valuable resources to anyone who's trying to do well as a student. A lot of learning goes on while you're taking notes—you may not even realize it's happening!



When you take notes

- 1 . . . you naturally listen better. (You have to listen in order to get the information and write it down!)
- 2 . . . you listen differently—you naturally learn and understand the material better. Taking notes forces you to focus on what's being said or read.
- 3 . . . you sort through the information and decide what to write. This means you naturally think about the material and process it—making it more likely that you'll remember it.
- 4 . . . the actual act of writing the notes fixes the information more firmly in your brain.
- 5 . . . you end up with good notes in your notebook. Having written examples of the characteristics, facts, formulas, or science processes makes it possible to see the correct information. This makes it much easier to review and remember it.

**Get Set
Tip # 4**
Take good
notes! You'll
remember the
material
better with
less studying.

Tips for Wise Note-Taking

in class . . .

- Have a notebook or a notebook section for science.
- When the class begins, write the topic for the day at the top of a clean page.
- Write the date at the top of the page.
- Only take notes on one side of the paper.
- Use an erasable pen for clear notes, not a pencil.
- Write down examples of situations or problems.
- Write notes to yourself about explanations for different events or situations.
- Write neatly so you can read it later.
- Leave sizable margins to the left of the outline.
- Use this space to note important items or write key words.
- Leave a blank space after each main idea section.
- Pay close attention to the opening and closing remarks.
- Listen more than you write.
- ASK about anything you do not understand.

Get Set Tip # 5

When you take notes in class, be alert for signals from the teacher about important ideas. Write down anything the speaker (or teacher)...

- ...writes on the board.
- ...gives as a definition.
- ...emphasizes with his or her voice.
- ...repeats.
- ...says is important.

. . . from a textbook assignment

- Skim through one section at a time to get the general idea. (Use the textbook divisions as a guide to separate sections, or read a few paragraphs at a time.)
- Then go back and write down the main ideas.
- For each main idea write a few supporting details or examples. If a science operation or process is explained, write down a correct example.
- Notice bold or emphasized words or phrases. Write these down with definitions.
- Read captions under pictures. Pay attention to facts, tables, charts, graphs, and pictures, and the explanations that go along with them. Put information in your notes if it is very important.
- Don't write too little. You won't have all the main points or enough examples.
- Don't write too much. You won't have time or interest in reviewing the notes.

How to Prepare for a Test

Good test preparation does not begin the night before the test.

The time to get ready for a test starts long before this night.

Here are some tips to help you get ready – weeks before the test and right up to test time.

1. Start your test preparation at the beginning of the year— or at least as soon as the material is first taught in the class.

The purpose of a test is to give a picture of what you are learning in the class.

That learning doesn't start 12 hours before the test. It starts when you start attending the class. Think of test preparation this way, and you'll be able to be less overwhelmed or anxious about an upcoming test.

You'll be much better prepared for a test (*even one that is several days or weeks away*) if you . . .

- . . . pay attention in class.
- . . . take good notes and work out sample problems.
- . . . keep your notes and class handouts organized.
- . . . read all your assignments.
- . . . keep a good list of key events and definitions.
- . . . do your homework regularly.
- . . . make up any work you miss when you're absent.
- . . . ask questions in class about anything you don't understand.
- . . . review notes and handouts regularly.

2. Once you know the date of the test, make a study plan.

Look over your schedule and plan time to start organizing and reviewing material.

Allow plenty of time to go through all the material.

Your brain will retain more if you review it a few times and spread the studying out over several days.

3. Get all the information you can about the test.

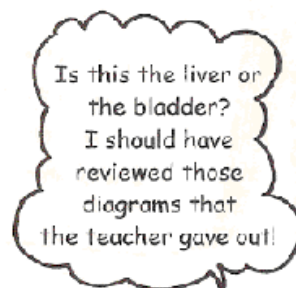
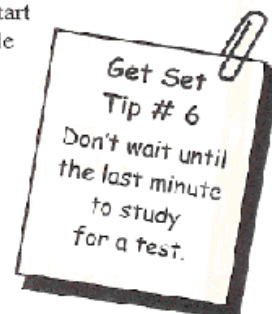
Write down everything the teacher says about the test.

Get clear about what material will be covered.

If you can, find out about the format of the test.

Make sure you get all study guides the teacher distributes.

Make sure you listen well to any in-class reviews.



4. Use your study time effectively.

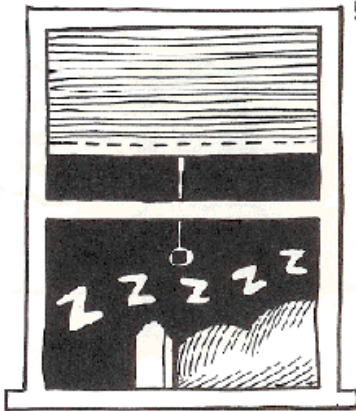
DOs and



DON'Ts

- DO gather and organize all your notes and handouts.
- DO review your text; pay attention to bold words, bold statements, and examples of concepts, processes, or questions.
- DO identify the kinds of problems in the section being tested; practice solving a few of each kind.
- DO review the questions at the end of text sections; practice answering them.
- DO review your notes, using a highlighter to emphasize important points.
- DO review the study guides provided by the teacher.
- DO review any previous quizzes on the same material.
- DO predict the questions that may be asked and kinds of problems that will be included; think about how you would answer them.
- DO make study guides and aids for yourself.
- DO make sets of cards with key vocabulary words, terms and definitions, main concepts, formulas, or facts.
- DO ask someone (reliable) to quiz you on the main points and terms.

- DON'T spend your study time blankly staring your notebook or mindlessly leafing through your textbook.
- DON'T study with someone else unless that person actually helps you learn the material better.
- DON'T study when you're hungry or tired.
- DON'T study so long at one time that you get tired, bored, or distracted.



5. Get yourself and your supplies ready.

Do these things the night before the test (not too late):

Gather all the supplies you need for taking the test (good pencils with erasers, erasable pens, scratch paper, calculator with batteries).

Put these supplies in your school bag.

Gather your study guides, notes, and text into your school bag.

Get a good night of rest.

In the morning:

Eat a healthy breakfast.

Look over your study guides and note card reminders.

Relax and be confident that your preparation will pay off.

How to Take a Test

Before the test begins

- Get to class on time, or even a bit early, so you don't have to rush or feel extra stressed.
- Have supplies ready. Take sharpened pencils, scratch paper, calculator, and eraser.
- Try to get a little exercise before class to help you relax.
- Go to the bathroom and get a drink.
- Get settled into your seat; get your supplies out.
- If there's time, you might glance over your study guides while you wait.
- To relax, take some deep breaths and exhale slowly.

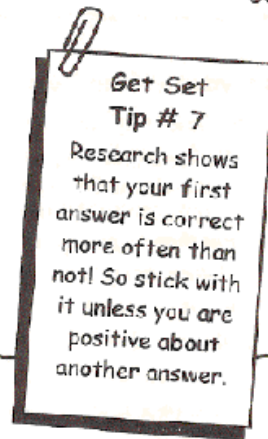
When you get the test

- Put your name on all pages.
- Before you write anything, scan over the test to see how long it is, what kinds of questions it has, and generally what it includes.
- Think about your time and quickly plan how much time you can spend on each section.
- Read each set of directions twice. Circle key words in the directions.
- Answer all the short-answer questions. Do not leave any blanks.
- If you are not sure of an answer, make a smart guess.
- Don't change an answer unless you are absolutely sure it is wrong.

Lucy is not sure of the answer. So she makes a smart guess. She puts an X by the problem so she will remember to come back to it later.



When she comes back to the question, she is still not sure, so she stays with her first answer.



More Test-Taking Tips

Tips for Answering Multiple Choice Questions

Multiple choice questions give you several answers from which to choose.

- Read the question through twice.
- Before you look at the choices, close your eyes and answer the question. Then look for that answer.
- Read all the choices through before you circle one.
- If you are not absolutely sure, cross out answers that are obviously incorrect.
- Choose the answer that is most complete or most accurate.
- If you're not absolutely sure, choose an answer that has not been ruled out.
- Do not change an answer unless you are absolutely sure of the correct answer.

Tips for Answering Matching Questions

Matching questions ask you to recognize facts or definitions in one column that match facts, definitions, answers, or descriptions in a second column.

- Read through both columns to familiarize yourself with the choices.
- Do the easy matches first.
- Cross off answers as you use them.
- Match the left-over items last.
- If you don't know the answer, make a smart guess.

Tips for Answering Fill-in-the Blank Questions

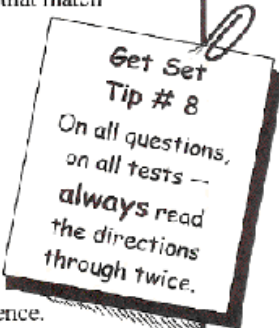
Fill-in-the-blank questions ask you to write a word that completes the sentence.

- Read through each question. Answer it the best you can.
- If you don't know an answer, X the question and go on to do the ones you know.
- Go back to the X'd questions. If you don't know the exact answer, write a similar word or definition—come as close as you can.
- If you have no idea of the answer, make a smart guess.

Tips for Answering True-False Questions

True-False questions ask you to tell whether a statement is true or false.

- Watch for words like *most*, *some*, and *often*. Usually statements with these words are TRUE.
- Watch for words like *all*, *always*, *only*, *never*, *none*, *nobody*, and *never*. Usually statements with these words are FALSE.
- If any part of a statement is false, then the item is FALSE.



**Get Set
Tip # 8**
On all questions,
on all tests —
**always read
the directions
through twice.**

Even More Test-Taking Tips

Tips for Solving Word Problems Involving Math

A **word problem** uses words to describe a problem or question which needs a solution.

- First, read through the problem twice.
- Identify the question to be answered. Underline it.
- Circle key facts needed to solve the problem.
- Circle clue words that point to the correct operation.
- Choose a strategy for solving the problem.
- Write down a problem or equation that could solve the problem.
- Draw diagrams, charts, or pictures if you need them.
- Solve the problem.
- Go back and read the problem again. Ask yourself:
Did I answer the question that the problem required?
Is this answer reasonable?
- Check your answer using another method or strategy, if you have time.

Tips for Solving Number Sentences or Equations

A **number sentence or equation** is a problem made up of numbers, usually with a missing number for you to find. In an equation, the missing number is often represented by a letter.

- Read the number sentence twice.
- Identify the missing element or number that you need to find.
- Simplify the sentence or equation by combining elements that are the same, or by doing easy computations.
- Identify the operation needed to solve the problem.
- Solve the problem.
- Take your answer and write it into the number sentence or equation.
- Read through the problem again to make sure it is correct with your answer inserted.

