The Importance of Learning to Think

Thinking is a basic human activity—you do it all the time. It happens when you take the information you see, read, and hear, and make sense of it. Thinking is what happens when your mind tries to make sense of what is happening to you and leads you to conclusions and judgments. Thinking involves reasoning, deciding, reflecting, judging, and remembering, among other things.

Information comes at you from all kinds of sources. Some you get just from your own observation. Other information comes from your family, your school, your religious upbringing, your friends, and the media.

Your mind is constantly vacuuming up this information. You may not even realize this is going on. For example, have you ever reacted to a situation by blurting out a statement that sounds just exactly like something an adult would say? When you hear a news story about someone from a different ethnic or racial group, do you immediately jump to conclusions about that person just because of his or her background?

Most people take in this constant stream of information without really thinking about or reflecting on it. Reflection is the act of thinking seriously about the world around you. You have to take time to reflect; when you do begin to form thoughts and ideas. When you do this, you can begin to examine your own biases, prejudices, and ignorance and see how they hold up against the information you’ve received.

Reflection is an activity that requires focus and concentration. You do it best when you seek a quiet place with few or no distractions. This might be in your bedroom, in a library, or somewhere in nature.
The Parts of Thinking

People who study critical thinking have broken the thinking process down into eight parts. Analyzing these parts can help you understand better what critical thinking is.

- **Purpose**—This is the goal of your thinking, or what you’re trying to accomplish. It’s important to be clear about your purpose. It also helps to return to your purpose every now and then to make sure you haven’t lost sight of it.

- **Question**—This is the problem or issue you are considering. Stating your question clearly helps focus your thought and guide the process. Some questions will have factual answers, others will be a matter of opinion.

- **Information**—The data, facts, and other evidence you gather are the information you need to consider. Sift through and toss out information that is not relevant to your question. Consider information that goes against your opinions as well as facts that support them.

- **Interpretation or inference**—Inferences are the interpretations or conclusions you come to in the thinking process. You want to make sure these interpretations fit the facts you have rounded up. Don’t interpret beyond your data.

- **Concepts**—These include the ideas, principles, theories, and hypotheses you are using in your thinking. Be sure you understand which concepts you are using and that you’re using the right concepts for the problem at hand.

- **Assumptions**—Examine your assumptions—your beliefs and biases. These often are floating in your subconscious mind, and you’re not always aware that they’re there. Not taking them into account can derail your thinking process.
• Implications and consequences—Always think through the implications or truths that follow from other implications or truths. Then consider what the result of your actions will be before you take those actions.

• Point of view—Your point of view is the mental location from which you are looking at the problem or issue. It’s important to understand the way in which your point of view determines how you see the problem. Take time to consider other viewpoints and ways of examining the situation.

Wanting something, hoping for something, and feeling emotions are not the same as thinking. Nor is thinking the same as

**intuition**—the feeling that you know something without any reasoning or proof. When you’re thinking or reflecting, you must separate what you think from these emotions and intuitions. Only in this way can you make good decisions and solve problems—two activities where clear thinking is very important.

**Decision Making**

**Decision making** is the process of setting goals, considering your options, and choosing the one you think best, given what you know. Your goal should be always to make the best decisions you can that are most beneficial to you and those around you. You can’t do this if you don’t think and reflect about what you’re trying to do and how you’re going to get there. When you think and reflect, you make rational decisions. Otherwise, you’re just reacting or making irrational decisions—decisions based on fear, ignorance, or prejudice. Irrational decisions lead to harmful and bad choices. They can complicate your life and make things difficult for the people you care about and who care about you.

Many experts at universities, in business, and in the military have studied decision making. As a result, they’ve developed what they call the decision-making process. It involves a series of steps that have various names, depending on the field in question. But they usually involve the same kind of activity.
The process has six steps:

1. **Identify the situation**—determine the decision you need to make.
2. **List the options**—do research to gather the information you need to make the decision.
3. **Weigh the possible outcomes of each option**—evaluate the evidence you have to determine which choice is best.
4. **Consider your values**—use them to make a choice from the alternatives open to you.
5. **Make your decision and take action.**
6. **Evaluate the decision**—see if it solved the need you identified in Step 1.

### Problem Solving

Closely linked to decision making is **problem solving**—thinking through a problem or an issue to come up with a solution.

Suppose, for example, that Antonio has to figure out the best way to get to school and back home every day. He also has a part-time job. He explores various possibilities—does research—and finds his choices are:

- **To walk**—but the school is far away, and the weather gets pretty cold in the winter
- **To take the bus**—but the bus schedule doesn’t fit well with Antonio’s school and work schedule
- **To get a ride with someone else**—again, his schedule makes this difficult and most of his friends live in another neighborhood
- **To buy a car**—but he can’t afford this and would have to get help from his parents to make the payments and buy insurance

Antonio and his family have identified the problem and collected information on the various options. They consider the possible solutions and evaluate which will work best. They decide the best option under the circumstances is to buy another car. As part of the deal, Antonio agrees to help his grandmother run errands and take his sister to her Girl Scout meetings. He’ll also pay part of the monthly payment with earnings from his job.

Now the family must decide what kind of car to buy. Antonio would love to have a snazzy red sports car to drive around in. But he knows it would cost too much to buy and insure. His parents point out that a car with better gas mileage would also help keep costs down. So the family settles on a used economy car—it’s not flashy, but it will get them what they need at a reasonable price.
After a month, the family finds that the arrangement is working well. Antonio is able to get to school and his job on time. Helping his grandmother run errands for the family makes life easier for his mother, who doesn’t have to do it after work. And his sister is happy she’s not missing her scout meetings.

**Critical Thinking**

In solving Antonio’s transportation problem, he and his family used critical thinking. Critical thinking is making sure you are thinking, reflecting, and reasoning the best you can in any situation. The word critical here does not mean to find fault or think negatively. It means to use careful analysis and your best judgment.

Analysis is breaking an issue or problem into parts and studying each one and how it relates to the others. It’s the ability to sift through the pieces of the puzzle and put them together to form a picture that makes sense.

If your history teacher asks you why President Lincoln waited until after the Battle of Antietam (Sharpsburg) to issue the Emancipation Proclamation, she’s asking you to analyze what he did. This is deeper thinking than just knowing that he issued the proclamation. It’s asking why he did it, why he did it when he did it, and what were the consequences—the results—of his doing it. It also demands that you think about what might have happened if he had not issued it.

**Critical Reading**

You take in much of the information you know through reading—whether on your mobile device, in a book, or in a newspaper. Part of critical thinking is the ability to be a critical reader. Critical reading means not just passively accepting what you read, but thinking about what you are reading, asking questions about the material, and interpreting what the writer is saying.

Perhaps you’ve read J. K. Rowling’s *Harry Potter* books or seen the movies. Are they just adventure stories about witches and warlocks, or are they saying something more?
A critical reader might ask: Does the attitude of the magical world toward non-magical people—“Muggles”—say anything about racial and ethnic relations in real life? What does the series say about the love of parents for their children—or children for their parents? Why does the Ministry of Magic—the government—insist so strongly that Voldemort has not returned? What qualities do Harry, Ron, and Hermione represent? By asking such questions as a critical reader, you try to understand what Rowling was trying to say about loyalty, friendship, and sacrifice; about the conflict between good and evil; and about the choices people must make in difficult times.

That’s not to say there are easy answers or even “right” answers to any of these questions. Good writing may be open to any number of interpretations. People have been arguing about the meaning of Shakespeare’s plays for hundreds of years. But by critical reading you get below the surface into the real “meat” of the writer’s message.

When you’re reading critically, you’re asking three basic questions:

• What does the text say?
• What does the text do? Is it an argument? Does it make you sympathetic? Does it exaggerate to make its point?
• What does the text mean? This is where you analyze and look for deeper meaning.
The ancient Greek philosopher Aristotle thought that logic was a must for good learners and thinkers. Logic is a way of thinking that seeks to build on facts and the conclusions you can draw from them. For example, if you know that $1 + 1 = 2$, and $2 + 2 = 4$, then it logically follows that $1 + 1 + 1 + 1 = 4$. Or, if you know that water freezes at 32 degrees Fahrenheit, and you know that it’s 30 degrees out, you can logically assume that the puddle in the driveway is frozen without even having to look outside at it.

Trying to think logically is a good way to overcome your own biases, which can prevent your reaching a good conclusion. Bias is a belief, judgment, or prejudice that gets in the way of impartial thinking. A referee who called fouls on one team but did not call the same fouls on the other team would be demonstrating bias. A teacher who gave boys and girls different grades just because of their gender would be demonstrating bias. Bias interferes with logic. If you don’t account for it, it can cause you a lot of trouble when you’re trying to make decisions and solve problems.

**Premises and Conclusions**

For your thinking to be logical, you must base it on premises that are true. A premise is the foundation on which you build a logical conclusion. Your premise may be factual, or it may not be. If it isn’t, your conclusion will be faulty.

For example, take the premise “All birds have feathers.” Put that together with your observation that a robin has feathers. You can logically conclude that robins are birds.

But say you take the premise “If the street is wet, it has rained recently.” Put that together with the factual premise “The street is wet.” Can you then correctly declare, “It has rained recently?” No, because your first premise is false. There could be several other explanations for why the streets are wet. As a critical thinker, you must consider your premises carefully and make sure they agree with the facts.
Check out these premises and conclusion to see where the logic fails:

**Premise A:** All African-Americans are Democrats.

**Premise B:** Edward Brooke of Massachusetts was the first African-American elected by voters to the U.S. Senate.

**Conclusion:** Edward Brooke was a Democrat.

There’s a problem with this conclusion: You do an online search for “Edward Brooke” and find out that he was a Republican. What happened? Premise A was faulty. While surveys show that most African-Americans support the Democratic Party, this does not mean all African-Americans are Democrats. That’s an assumption or bias not based on facts. If you don’t carefully check the premises you’re building on, you’re not thinking critically.

You can help guide yourself to good reasoning by following the *standards* of critical thinking. These standards give you a yardstick for measuring the thoughts and ideas in your decision making and problem solving.

- **Clarity**—Is the idea expressed in clear language? Is it understandable? Can you illustrate it?
- **Accuracy**—Is it factual? Can you verify it? Are there any errors?
- **Precision**—Is it specific? Is there enough detail?
- **Relevance**—Does it relate to the question? Does it help solve the issue?
- **Depth**—Does it get into the factors that make the problem complex? Does it dig deep enough?
- **Breadth**—Does it consider the issue from different points of view and consider other ways of looking at the problem?
- **Logic**—Do all the parts fit together and make sense? Do any of them contradict each other?
- **Significance**—Is it important and meaningful, or is it just trivia?
- **Fairness**—Is it free of bias and false assumptions? Does it accurately present all viewpoints?

You become a critical thinker by thinking about your thinking. You break your thinking into its parts and examine them. You try to think logically, examine your assumptions, and eliminate bias. You make sure your premises are factual, and you test your conclusions. Finally, you use the standards to measure your progress. The result is that you’ll get better and better in your learning, your decision making, and your problem solving.
Asking Good Questions

An important part of learning and critical thinking is asking the right questions. The quality of your questions will determine whether you get the information you need. Like a reporter on a news story, you try to find out what happened, when it happened, why it happened, who was involved, and then how it happened. If you’ve ever watched a press conference on TV, you’ve seen that people don’t always like to answer these questions. But good journalists don’t give up easily—they keep asking questions.

You may not be a reporter, but your ability to think critically depends on getting the facts you need about the problem you’re trying to solve. Learning how to ask the right questions is an important tool in your thinker’s toolbox.

The Waste of Dead Questioning

Asking the wrong type of questions doesn’t get you the information you need. It wastes your time. One kind of question you want to avoid is the “dead” question. That’s a question that doesn’t dig deeply and doesn’t go anywhere.

A dead question gets you useless information or derails the discussion. For example, a high school student spent a semester on a foreign exchange program in Germany. The school asked her to appear before an assembly and tell her fellow students about her experiences. The time came for questions, and a student stood up and blurted out, “Did you drink beer?”

This was a dead question. The student asked it, not to gain information, but to show off for his friends. Had he wanted to ask a serious question about German attitudes towards alcohol, he might have asked, “I understand the legal drinking age in Germany is lower than in the United States. Do German high school students drink more than Americans? Do they have more problems with drunk driving, or fewer?” This could have led to a serious and perhaps educational discussion.
Other dead questions allow the person you’re asking to avoid giving you information. Questions that can be answered simply by “Yes” or “No” fall into this category. If you ask someone, “Did you have a good day at school?” he or she can answer “Yes,” and leave it at that. If you ask, however, “What happened at school today?” you’re more likely to get some information.

Try to ask questions that invite people to share opinions, thoughts, and feelings. Ask your teachers questions that will go deeper into your lessons’ content.

**Three Types of Questions**

In learning to ask good questions, it helps to understand that generally there are three types:

- **Factual questions**—These have a correct factual answer, but not necessarily a simple one. The answer to why an apple falls to the ground when it leaves the tree is “gravity,” but the physics behind gravity are quite complicated. Another example of a factual question would be “In which direction does the sun rise?” The answer, of course, is “in the east,” but behind that lies the whole discussion about whether the sun is actually “rising” or the earth is turning on its axis as it revolves around the sun.

- **Preference questions**—These have more than one answer, usually an opinion, choice, or preference. As long as it relates to the subject, you can’t really say it’s right or wrong. “What is your favorite color?” is a preference question. Other examples would be “Do you prefer baseball or football?” or “What is your favorite band?”
• **Evaluation or judgment questions**—These questions require reasoning and have more than one answer. The answers require supporting evidence, and some answers can be better than others, depending on how well you reason or the quality of your proof. Examples of evaluation or judgment questions are:
  
  “Should there be more or less testing in schools?”
  
  “Should all parents be required to have their children vaccinated?”
  
  “What is the most effective thing the United States can do to fight terrorism?”

By asking intelligent questions, you transform yourself from a passive observer into a critical thinker and active learner. You’ll get more out of your education and training—and become a more effective member of society.

**Designing and Evaluating Your Learning**

By practicing critical thinking, you begin to take charge of your experience. You find your decision-making and problem-solving skills increasing and you begin to make better choices. You can apply these skills right now to your high school experience. Asking good questions and thinking about your courses better prepares you to get the most out of them.

**Designing Your Learning**

Your classes are not just a set of requirements you have to fulfill to get a high school diploma. They are gateways to your life as an adult, preparing you for what lies ahead—college or the workplace.

Don’t make the mistake of thinking that when you graduate, your learning days are behind you. A lifetime of learning lies ahead, and your high school courses are the next steps along the road.

Taking an active role in your learning now will pay big dividends later. The following are some tips to help you be a more active student, design your learning, and get the most out of your classes:

- Make sure you understand what each class requires, how the teacher will teach it, and what the teacher expects from you. If needed, ask the teacher for advice on how to prepare for class.

- Be a questioner. Participate with the teacher by asking good questions—this is a good way to discover what you don’t know or didn’t understand.

- Be aware of how what you are learning relates to what you already know. Consider how your different class subjects relate to each other.
• Think of your teacher as a coach in your subject—math, English, chemistry, history, business. Think of yourself as being on the “team” for that class. Just as you’d do your best to play football or volleyball the way the coach teaches, do your best in your class subject as a member of the “team.”

• Use your classroom time to practice thinking about the class subject. Participate actively, don’t just sit there and expect your brain to just soak up what you need to know.

• Practice explaining the subject to another student and answering his or her questions. This will also help you locate gaps in your learning.

• Try to relate what you are learning to issues and problems in your daily life. Look for ways to apply what you are learning.

• Think about how best to organize your time and effort so that you get the most out of the class.

**Evaluating Your Learning**

The next step in being a critical thinker and active learner is to evaluate how you are doing. The tests you take in class are one way of evaluating what you have learned and what you know. But there’s more to it than that.

For one thing, evaluating your learning can help you prepare for those tests—it can help you know ahead of time whether you really understand the subject and what the teacher is talking about. If you realize there are gaps or weaknesses in your learning, you can work to correct them.
You can use the standards of critical thinking to develop questions to ask yourself to assess how you’re doing:

- Do I express myself clearly on this subject?
- Do I strive for accuracy in my work?
- Are my ideas precise and specific, with a sufficient level of detail?
- Do I ask relevant questions in class or share related ideas?
- Does my study just skim the surface, or do I dig deeper to understand the subject?
- Do I consider different viewpoints, including those of my teachers and fellow students? Do I consider what I’m learning from different angles?
- Do I think logically, reasoning from factual premises?
- Do I focus on the most significant material and ask questions about important issues in class?
- Is my behavior fair to the teacher, the other students, and myself?

Find out at the beginning of your course how the teacher will grade it and what you must do to receive a specific grade. Your teacher will usually be happy to share this with you. Ask relevant questions about assignments to make sure you understand what you’re supposed to do. If the teacher wants an assignment single-spaced in 12-point Times New Roman font, don’t turn it in double-spaced in 10-point Arial font.

In addition, don’t treat assignments as opportunities to see how far you can bend the rules. If the teacher says you’ll be marked down for turning work in late, turn it in on time. Plan your time wisely so you can get your schoolwork done by the deadline.

Good study habits, critical thinking, and a willingness to be always learning will serve you well throughout your life. The time to develop this active approach is now. Then when the challenges of adulthood confront you—and they will—you’ll be better prepared to take them on.
Using complete sentences, answer the following questions on a sheet of paper.

1. What are some of the things thinking involves?
2. What are the eight parts of thinking?
3. What are the steps of the decision-making process?
4. What three basic questions are you asking when you read critically?
5. What happens if a premise is not factual?
6. What are the standards of critical thinking?
7. What do reporters on a news story try to find out when they ask questions?
8. What are the three types of questions?
9. What are three tips for designing your learning?
10. What are three questions to ask yourself to evaluate your learning?

**APPLYING YOUR LEARNING**

11. Describe a volunteer activity you’ve completed. Using good critical thinking skills, explain why you chose it from the options available, how it benefitted the community, and what you learned from it.