SUMMARY OF LEARNING STRATEGIES
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Setting & Evaluating Goals:
When faced with a long-term project/goal, like “do well in, and pass my math class,” you need to set short-term goals, such as weekly goals. A goal like “do well in, and pass my math class” has two flaws: (1) it doesn’t tell you HOW to achieve the goal, and (2) you only know if you accomplished it at the END of the quarter, when there’s no chance of making changes. Setting short-term goals avoids these problems, giving you control rather than having to simply hope for the best. Here’s a strategy.

At the start of a week,
- describe three things you want to, and think you can, accomplish this week related to this class;
- describe the consequences of NOT accomplishing those goals (which goals MUST be achieved this week?); and
- describe two specific actions you will DO to ensure you accomplish your goals. Include the length of time you’ll spend doing each thing, as well as when they will happen. (If you want to use the word “study,” you need to describe what exactly you’ll be doing – taking notes, reading, revising your notes, asking questions of others, working on problems, etc.)

At the end of a week,
- describe which of your goals you accomplished,
- describe what you are most proud of accomplishing this week,
- describe what you achieved that you weren’t sure you’d be able to, and
- describe why you weren’t able to complete some of your goals, and what changes you plan to make.

How to Learn When Confused – what to do BESIDES having someone tell you the answer:
Part of learning is having questions and being uncertain – how else would we know there’s something we need to learn? The challenge is how to handle confusion well, to use confusion to help us learn. Asking others for help ONCE IN A WHILE is fine, but remember, the person explaining is the one doing the hard thinking, not you! So here are some tips for how to make progress on your own.

- **Start by describing your confusion**, and decide what is the source of the problem
  - Vocabulary – Is it possible you’re misunderstanding a word or phrase in the instructions for a task or an explanation in the book or notes?
  - Memory – Is it possible you’re forgetting a key idea or steps, especially ideas from other classes or from your past?
  - “Something seems wrong” – Does the answer seem strange, does the problem look really different in some way, did the process go differently from what you’re used to?
  - Fear – Are you distracted by worry about something (losing points on an assignment, “looking stupid” to someone else, …)?

- **For confusion due to vocabulary,**
  - write YOUR interpretation of what the word or phrase means, then look at examples in the book or notes to see if your interpretation ALWAYS works.
  - look for definitions in the book or notes – where is that word or phrase used (the book’s index can help), what other ideas or procedures immediately follow that word or phrase?

- **For confusion due to memory,**
  - write a brief description of what you think the concept is or steps of a procedure are, then compare with the descriptions in the book or notes – are there any differences, even minor ones?

- **For general confusion (“something seems wrong”),**
  - check your answer in the original problem – either compute with it, or see if it makes sense to answer the situation being described.
• compare your problem or method with the other examples in the book and notes, and describe the
differences you see. Think of different ways that could change the method.

• For distraction by fear,
  o write down exactly what you’re afraid of, and decide if it’s as threatening as you think.
  o make a plan for how you can get reassurance or clarity about the things you fear.
  o walk away for a while and do something relaxing – exercise, eat, nap, etc.

Learning by Communicating with Others:
As was mentioned above, a lot of thinking and learning happens when trying to communicate ideas. But a lot of
people think the only useful thing to say is the correct explanation – WRONG! There are many different ways to
discuss a topic (both in your own mind and with others) that improve understanding.

• Paraphraser – Helps the group by summarizing what is being said to make sure everyone is hearing the
  same thing. (“What I see you doing is …” or “What I heard you say was …”)

• Questioner – Helps the group by trying to guess the questions a confused person would ask, and then
  asking those questions to clarify what is being said or done. (“What I think is unclear is …” or “Could
  you explain…in more detail or using diagrams?” or “What if a person did…instead?”)

• Tester – Helps the group by trying out suggested ideas and pointing out the consequences of following
  ideas or procedures. (“Let me try that …” or “But if I do …, then we get …”)

• Fact Master – Helps the group by knowing or finding the meanings of words, steps of procedures, or
  other things in the book and class notes. (“The book says the first step is to …” or “Check your notes
  from yesterday – see how Erik wrote …” or “Hang on a sec, let me look it up.”)

A strategy for learning math: “ISCMP”
The steps listed below are what most successful students do to learn. While the order may change, being able to
summarize, check your understanding, and memorize new information is essential.

• Identify – Skim the textbook and class notes to identify the specific concepts or techniques you are
  expected to learn. [Look in the book for shaded boxes of information, colored headings,
  or bold words.]

• Summarize – In your notes, list each concept/technique that you found, and write a summary you can
  understand which describes the ideas and steps. (This is the big picture.)

• Check – Check the accuracy/completeness of your summaries by copying the example questions in
  the book to a new sheet of paper and work them out using only your summaries. Compare
  your solutions with the example methods and modify your summaries as needed, or
  DESCRIBE YOUR CONFUSION to ask in class.

• Memorize – Once you know your summaries are accurate/complete, memorize them! Your goal is to
  recall the meaning of any major idea or procedure without looking at your book or notes.

• Practice – Confirm you really do know the material by practice-testing yourself. Pick several
  problems from the book or class notes and do them from memory. Then look up the
  answers and write down how many you got correct on the first try! Use this to decide
  what you need to learn more carefully.