



Upgrade Your Math Brain

5 PRO TIPS FOR EVERY LEVEL OF LEARNER

Student:

"I don't get it"

What does it look like?

- Missing foundational skills from previous grade levels.
- Aware of being behind but not sure what to do about it.
- Relies on a calculator for simple computations.
- Unable to discern whether or not an answer is reasonable.
- Lack vocabulary to describe math.
- Attempts some questions but gets stuck quickly and stops.

What can I do?

1. Recognize there is no quick fix and that real improvement takes time.
2. Have patience and self compassion. Eliminate unhelpful negative self talk.
3. Be open about where you are at, what you are struggling with, and accept help.
4. For independent work, focus on basic and moderate level questions before moving onto problem solving.
5. Work through examples shown in class and try similar questions by yourself. Practice, practice, practice.

What should I focus on?

- What can I do that would make a big difference over the short term?
- What can I do that would make a big difference in the long run?
- Where do I go for help if I don't understand something?



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Student:

“I think I get it. That’s good enough, right?”

What does it look like?

- Walks away from class lessons with some knowledge about the topic, but may not understand the logic behind the lesson presented.
- Passes tests but forgets material once the test is over.
- Needs reminders on skills that were learned in the past. This lack of recall hinders current performance.
- Skips steps, which leads to mistakes. The work shown may not be logical to an observer.
- Overestimates understanding and proficiency level

What can I do?

1. Recognize there is no quick fix and that real improvement takes time.
2. Have patience and self compassion. Eliminate unhelpful negative self talk.
3. Mark your own work with the answer key. If there are discrepancies, try to pinpoint the mistake and learn from it.
4. Work through class examples the same way the teacher demonstrated. Do similar questions in the same way.
5. Acquire/create study sheets so you can refer to rules that you may have forgotten. Do practice questions on them until they're automated.

What should I focus on?

- How am I REALLY doing?
- Am I showing my work correctly? Are there any mistakes that I keep repeating?
- Am I able to communicate my understanding to an outside person using math vocabulary and examples?



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Student:

“I kind of get it, but...”

What does it look like?

- Walks away from class lessons with working knowledge on the topic, but not sure how the key ideas are connected.
- Can apply procedural knowledge from lesson towards basic and moderate level questions.
- Gets stuck on word problems and questions that have a bit of a twist.
- Looks for patterns in mathematical relationships but sometimes draws incorrect conclusions.
- May see that the final answer is correct but overlook flaws in thought process.

What can I do?

1. Look for overarching ideas in the chapter.
 - Consider how different ideas within the topic are related.
2. Recognize that it is important to have the correct thought process as you work through the questions.
3. Use math vocabulary to explain concepts and procedures to a(n imaginary) friend to improve your own understanding.
4. Identify areas that need improvement and find a source of practice questions.
5. Practice questions that focus on areas needing improvement.

What should I focus on?

During independent study, ask:

- What idea is this question after?
- Is there a better way to do this?
- When does this rule get applied? When does it not?
- Where can I find more practice on ___?
- What is the word problem asking me to find? What information is given and relevant? How do I express this information in mathematical terms? What can I find out with these equations?



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Student:

“I get most of it, but I still have some questions”

What does it look like?

- Keeps up in class and gets "A"s and "B"s without help.
- Has confidence in own abilities and can identify weaker areas.
- Interested in pursuing STEM or business programs.
- Can verbalize how ideas in math relate to each other using correct terminology.
- Proficient with easy and moderate level questions, but may need help with setting up word problems.
- Has specific questions after an independent study session.

What can I do?

1. Identify areas that need improvement and find a source of practice questions.
2. Practice problems that challenge you.
3. Try to find alternative ways to solve the same problem. Decide which method works the most efficiently.
4. Try to predict what kinds of tricky questions a teacher can put on a test.
5. Gather a list of questions that pile up over independent study sessions. Make sure you can clear your list.

What should I focus on?

During independent study, ask:

- What's the best way to approach this?
- How do I work backwards from what the question is asking to the information given in the word problem?
- Where can I find more practice on ___?
- What is the word problem asking me to find? What information is given and relevant? How do I express this information in mathematical terms? What can I find out with these equations?