

12 Things for Students to Remember When Doing Undergraduate Research in Mathematics and Computer Science

“If we knew what it was we were doing, it would not be called research, would it?”

-Albert Einstein

1. It's challenging but rewarding.
2. Be patient, especially when learning background information.
3. It's OK if you don't understand an idea the first time (or the second time, or the third time...)
4. We all get stuck and frustrated.
 - Take a break.
 - Explain to someone (mathematically trained or not) why you are stuck.
 - Review background material.
 - See if the problem can be modified (problems are not set in stone).
 - Check hypotheses or assumptions.
 - Work out a simple example.
 - Keep going.
5. Don't be afraid to ask 'why?'.
6. Regularly share your ideas with others and attentively listen to those shared with you.
7. Work as a team and trust your team members.
8. Write down your work as you go.
9. Be open to different ideas and approaches (and follow through).
10. Research is time-consuming.
11. Keep going. Persistence and focus are the keys to success.
12. Celebrate each success, no matter how big or small.

“Those who achieve the most are not the most skilled but are those who concentrate long after others have given up.”

-Mr. Ohshima

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