



The Caltech Y RISE PROGRAM

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Empowering Your Student

Tutor-Led Workshop with Rise Program Tutors, Zoila Jurado and Eric Fries (Caltech Graduate Students)

Building Confidence

Eric Fries, Rise Program Tutor

- Be friendly with them
 - What does your student like? What are their hobbies? If you can't think of this off the top of your head, ask them next time you see them (e.g. What sports do you play? What kind of music do you like?)
 - Share your hobbies
 - It's okay to talk about nonacademic topics. Don't have to focus on the material all the time. That can be less effective and productive.
- Use Positive Reinforcement
 - Break the bad math/science mentality.
 - "You're good on your own. I'm just helping you get better."
 - When a student says "I don't know how to do this," I tell them, "I understand this is challenging. I'm here to help you."
 - Don't let students compare themselves to you. "I was in your place once and I learned this. I struggled too. It's not a problem to ask for help."
- Take Breaks as Needed
 - Look for signs of agitation
 - If a situation is deteriorating, go ahead and take a break. "Tell me about that basketball game you have this weekend."
- Complicated Problems
 - Break it down in steps. Show them that they can solve each step on their own.
 - What's 3/3? Student will definitely know the answer is 1. Ask "How do you know that?" The same applies to bigger numbers.
 - To get better you have to do the hard problems and struggle. Can't just do the easy problems. It's like sports. If you play people who are better than you and struggle you get better.
- Teach Real Applications (e.g. basic math proofs)

Building Independence

Zoila Jurado, Rise Program Tutor

- Teaching students how to check their own work
 - Don't want them to depend on the tutor for the right answer. Tutors won't be there during tests.
 - Teach back solving (e.g. students struggle with factoring. Opposite is distribution. If a student asks me to check their factoring, I tell them to distribute it. If you get the same answer you'll know it's right).
 - Word problems – have them check if their answer actually makes sense. Have them write out all the variables, possible formulas
 - When they try to solve everything in their head they can't spot the mistakes. Have them write it down. Show their work.



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- Less Dependence on the tutor
 - Answer questions with a question (e.g. How would you check this? Why do you think it's right? Or wrong?)
 - Students need to have confidence in their answer and be able to explain what they're thinking.
 - If a student is confident in their answer, but is still wrong, try to lead them in the direction to find their own mistake (e.g. Can you explain to me how you got this answer?)
 - Teaching tricks (e.g. 89×7 is the same as $90 \times 7 = 630 - 7$)
 - Give them step by step procedures that they can consult when stuck
 - Get them to teach you
- Teaching Study Skills
 - Sometimes I ask the student what they learned. If they say nothing we get out the textbook and look for key words or go online and look for examples.
 - Biology is a lot of memorization. Have students make flashcards. Make 2 piles of cards. Cards they know and cards they don't know
 - Compare cells to a city. What does FedEx do? Relate that to cells?
 - Teach them how to use the index, go to the page and find the answer.
 - If you don't know the answer to a question say, "I don't know. Let's look it up."
 - Give them the tools to learn things on their own
- Don't Allow Negative Language
 - Would love to have a dollar jar and every time a student says "I can't do this" or "I'm bad at math" they have to pay a dollar
 - Becomes a self-confirming bias
 - Break down the problem, so they can solve it