

TUTORS & DEMONSTRATORS

Quick Tips and Resources for Tutoring in the Sciences

Problem-solving tutorials

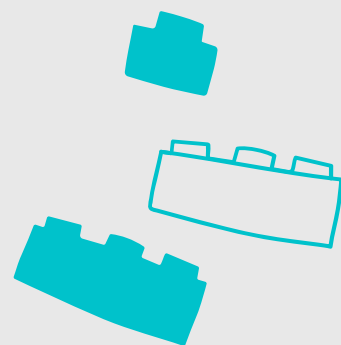
DO IT YOURSELF

Make sure that you are able to solve the problems yourself before the class. Remember that your way may not be the only way. Make sure you know what they have been taught so you can use similar and relevant approaches. Make sure you know what the purpose of the session is and how it applies to the learning objectives for the course.



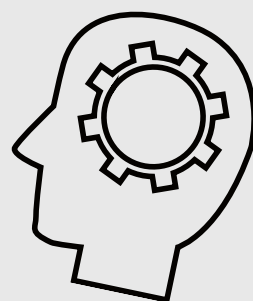
THE RIGHT AMOUNT OF HELP

When answering questions, be careful not to give them too much help or answer the question for them. Find out what they know and ask them to explain their problem solving approaches. If you see a mistake, guide them towards alternative solutions.



GIVE TIME AND SPACE

Try to give your students a chance to solve the problem for themselves as much as possible. It allows them to learn from their mistakes. Give them a bit of time to do it themselves and check on them in 5 minutes. Hovering over students while they are thinking can be intimidating, so give them space to think.



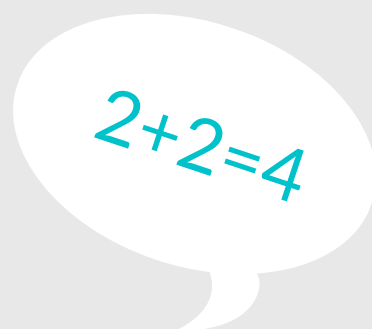
RECURRING QUESTIONS

If you find that you are being asked the same question by multiple individuals or everyone is struggling with the same problem, consider giving a short summary to the whole class to help them understand the question and to find a solution.



TALK THROUGH YOUR LOGIC

If you are answering questions or teaching by solving the problem yourself, talk through the logic of how you solve it and why you choose to apply certain approaches. This way you can model the type of thinking you want your students to emulate when they solve similar problems themselves.



USING GROUPS

Ask students to work in groups only if they will benefit from meaningful discussion and collaboration. Complex problems or those with multiple solutions are conducive to group working. Give students time to think about the problem independently first so that they can contribute to a group discussion more effectively.



SHARE SOLUTIONS

Sharing solutions to problems will help students see how others solved them and see where they went wrong. Do not call on individuals spontaneously if they are not expecting it as this can increase anxiety. Ask for volunteers or agree with individuals in advance to share their solutions. Consider if there are ways you can share solutions anonymously, e.g. through post-its or other online tools. If students are working in groups, assign reporters ahead of time or ask them to self nominate someone.



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IT'S OK TO BE WRONG

A large part of problem-solving is to learn from mistakes. Cultivate an environment where it's OK to be wrong and encourage students to learn from them. If you make a mistake, be honest about it. Ask students to help you solve it.



ENGAGE EVERYONE

Don't concentrate on one particularly vocal group or individual, gently bring in any shy people by encouraging them to help each other. Remember that online students will also need individual support so make sure you monitor individual engagement and needs as you would in the classroom.



CONNECT TO THE REAL WORLD

Making connections to the real world and how you apply techniques and concepts to your own research can help students to understand the reason for what they are doing. Share your enthusiasm for the subject and bring in your own knowledge and experiences.



BE KIND

Your students may be new to problem-solving tutorials. Be kind and understanding if students don't seem to be getting it right or understanding the questions. Take the time to understand why. Try not to get frustrated. Do not judge them for wrong answers.



YOU ARE A ROLE MODEL

Though tutorials can seem like a relaxed space, be mindful of your own professional conduct. You are a role model as a tutor, so model professional attitudes and behaviours.



DO THE BEST YOU CAN

All will be well!

