Top Tips for Inclusive Science Teaching

How can we make sure that all students feel included and have what they need to thrive?

Communicate your high expectations of every student and find out about them, their needs, aspirations and motivations.

Create an inclusive classroom culture

1 Enable all students to participate

Some students relish classroom discussions and practical activities while others may need alternative ways to participate.

Use tools like mini whiteboards and role cards for practical and group work.

2 Examine and challenge stereotypes, biases and assumptions

It's important that teachers and students have a broad view of what science is, what scientists are like, who belongs in science and future pathways.

Monitor your interactions with students to check the participation of different groups. Show students people from a diverse range of backgrounds using science in their work.

3 Model inclusive language and expect it from students

All students should feel safe and that they belong in your class.

Challenge any discriminatory language, think carefully about pronouns and other ways to actively counter stereotypes.

Find out more:
iop.org/LimitLess

Make the learning relevant

4 Value students' existing knowledge and experience of science

If students don't feel that people like them 'belong' it's difficult to feel confident and competent in the science.

Help students to recognise themselves as someone who is 'sciencey'. Identify each student's unique knowledge and expertise that's relevant to science - recognise, value and build on it!

5 Teach about a range of jobs and careers that use science and science skills

Students are more likely to continue to study science if they can see it will help them with jobs that they might want to do in the future.

Regularly showcase jobs that use science in your lessons and homework, and discuss different pathways into them. Share stories from former students if possible.

6 Give students opportunities to make links between their learning and their lives, interests and local area

Students are motivated when they can see how the learning is relevant to their lives. Having a sense of why something matters supports understanding.

Use contexts that link to your students' lives, interests and local area. Make learning relatable by using everyday materials.

Build numeracy and literacy for science

7 Build scientific vocabulary

There's a correlation between students' literacy levels and their science attainment.

Use everyday language, models and analogies to build understanding before introducing new keywords and technical language.

8 Get students talking and listening

Oracy builds students' understanding and confidence to use scientific vocabulary and helps them rehearse answers in preparation for writing.

Scaffold discussions so all students are able to communicate scientifically.

9 Make time for maths

Remember that maths is often taught differently to science. Students may need support to transfer knowledge and skills from one discipline to another.

Liaise with your maths department so teaching is well aligned between the subjects, and make effective use of worked examples.

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