Top Ten Tips for Creating More Accessible Lab Experiences

1. ## Be clear on the goal of each lab activity.

   This will allow you to better determine where flexibility in the mans for accomplishing that goal can be provided. For example, for microscopy, is the goal to learn how to manipulate the microscope, or to be able to identify specific elements? If the goal is the latter, you might be able to use accommodations such as providing accompanying pictures or connecting the microscope to a projector or large-screen TV to provide a larger view for students who need it.

2. ## Provide information in multiple formats.

   For example, make sure captions and a transcript are available for any video. This will benefit not only students who are Deaf or hard of hearing but also students who are learning English as their second language, those who are unfamiliar with the vocabulary, and more.

3. ## Explore tactile representations to represent information that relies on spatial relationships.

   For example, you can use an inexpensive 3D pen like the 3Doodler, to build 3D models of cells that can both make the information more accessible to students with visual disabilities and help other students better understand the relationships between the different parts and the whole.

4. ## Consider pairing up students.

   Paired up students can support each other as lab partners, but make sure to communicate that this does not mean doing the work for students with disabilities.

5. ## Communicate that you are open to learning from students.

   Be open about how you can best support them in terms of how information is presented. You might want to include a statement in your syllabus that welcomes students to share this information. This will go a long way toward creating a more welcoming lab environment where students feel safe to express what they need to be successful in completing lab activities.

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6. Start with inexpensive ways to make the lab environment easier to navigate.

One example is to make there are clear paths for reaching the different parts of the lab.

7. Ensure there is at least one lower-height table.

Or even better, use tables and benches that can be adjusted for students of different heights.

8. Create labels for key pieces of equipment in large enough type and with high contrast.

Black text on a white background often works best. You can also add tactile markings after working out a system with students that will assist them in identifying specific lab equipment without relying on vision.

9. Use plastic containers or glass containers with plastic handles.

While plastic containers can be safer, they may not always be practical for use with certain chemicals. When that is the case, look for glass containers that have plastic handles to make them easier to grasp for students with motor challenges.

10. Explore grants for procuring more specialized tools.

Talking equipment can provide information, such as weight, temperature, and color, in multiple modalities. Some of these are portable, which means they can be moved to different areas of the lab as needed, as well as used for research in the field.

Further Reading

- [Creating Disability-Friendly and Inclusive Accessible Spaces in Higher Education](#): This paper from CAST authors Luis Perez and Sam Johnston was commissioned for the National Academies of Sciences, Engineering, and Medicine Committee on Beyond Compliance: Promoting the Success of People with Disabilities in the STEM Workforce. It provides a deeper exploration of Universal Design for Learning in the context of STEM learning, including field and lab experiences.

- [DO-IT: Making Science Labs Accessible to Students with Disabilities](#): This publication from Sheryl Burgstahler at DO-IT provides many examples of accommodations for specific disabilities as well as universal design considerations for the lab space.

- [How Accessible Labs Can Support Scientists with Disabilities](#): This post from ThermoFisher Scientific provides many tips and ideas for modifications instructors can make to the lab space to make it more accessible for everyone.