Best Practices for Adapting Science Lessons with UDL

BEST PRACTICES BY ACTIVITY TYPE

Accommodations for labs and hands-on investigations:

- When explaining or modeling a procedure, slow down and add intentional pauses. This gives the interpreter time to sign and can help students focus on each step.
- Be sure that your student is watching what you are doing, it might be wise to seat them closer to where you are presenting.
- Share directions in multiple formats so that students access them in a way that they are comfortable with. For example, verbally give directions prior to the start of the lab, provide written directions for each lab group to look at during the lab, and also have directions written up on the board for a large-print format.
- Provide multiple ways to participate - verbal explanation, directing a peer, digital manipulation, and/or tactile modeling..
- Use tactile models, high-contrast visuals, and raised-line or pre-marked materials to support students with visual or fine-motor needs.
- Break procedures into clear, manageable chunks with written and visual supports.
- Allow flexible roles within lab groups (e.g., observer, recorder, director, materials manager) so participation does not depend on physical movement or precise motor skills.
- Ensure lab activities can be completed at desk height and do not require unnecessary movement around the room.

Accommodations for discussions and whole-class instruction:

- Share discussion questions in written and visual formats, not just verbally.
- Use sentence frames to help students enter academic conversations.
- Offer alternatives to paper-and-pencil responses, such as whiteboards or digital tools, especially for students with motor challenges.
- Use clear turn-taking structures to support students with hearing impairments (e.g., a talking piece, visual timer, etc.).
- Allow multiple participation modes, including written responses, digital chat, or small-group discussion before whole-class sharing.

Accommodations for group work and collaborative sensemaking:

- Provide written prompts, checklists, and visuals so group work doesn't rely only on spoken discussion.
- Normalize multiple forms of contribution, such as verbal reasoning, directing peers, organizing ideas, or synthesizing group consensus.
- Provide visual and symbolic support for students with hearing impairments and verbal walk-throughs for students with visual impairments.
- Encourage groups to document thinking using shared digital tools or manipulatives instead of paper-only formats.
- Heterogeneous grouping allows students with learning disabilities to fully participate in the lab while not being held back by any challenges in reading or comprehending the material.

Accommodations for videos, visual media, and demonstrations:

- Use closed captions on any video shown in class. This not only helps students who are deaf or hard-of-hearing, as well as students with auditory processing differences, but also helps all students with reading and helps them to build new vocabulary.
- Provide audio descriptions or narrated summaries for students who are blind or have low vision..
- Offer a condensed written summary highlighting key takeaways to reduce cognitive load.
- Allow students to pause, replay, or rewatch videos to support varied processing speeds.
- When possible, pair videos with hands-on or physical representations of the same concept.

Accommodations for drawing, modeling, and writing:

- Emphasize conceptual understanding over drawing precision or speed.
- Provide templates, labels, and arrows to reduce fine-motor demands.
- Allow use of digital drawing tools, tactile models, or oral explanations in place of hand-drawn diagrams.
- Support student expression through speech-to-text, partner scribing, or drag-and-drop interfaces.

Accommodations for notetakingg:

- Provide completed notes after you've gone over them in class. Students who struggle with written expression benefit from practicing their handwriting in class, and also have access to a typed out version that they can read clearly. Having notes available also helps students who may have missed class.

BEST PRACTICES FOR CLASSROOM SETUP:

- Arrange your classrooms to allow for different level lab tables and surfaces for individuals in wheelchairs, students who need to stand or fidget, and students who want to sit in higher chairs. Some students work well in table clusters, while others prefer to be more separate from their peers to allow them to focus better. There is added depth and engagement when students choose where they learn the best.
- Provide adjustable desks for differing height needs.
- Consider positioning of materials during demonstrations/presentations - how can students best see or interact with the materials?