

LESSON 5

How does air move and change when a storm is forming?

Adaptations for:

STEP 1: Observed Warmed and Cooled Air (pg. 18)

STEP 2: Air on the Move (pgs. 19-21)

EXPLANATION:

Aspects of the Mylar balloon demonstration that depend on visual observations or creating visual diagrams are limiting to students who are blind, have low vision, or are deafblind. These students also require different modalities in order to create diagrams showing how air molecules behave due to changes in temperature, humidity, and convection.

ADAPTATIONS FOR THE BALLOON DEMONSTRATION (STEP 1):

UDL Principle: [Multiple Means of Engagement](#)

- Provide alternative seating closer to the teacher or demonstration. In addition to supporting students who are blind, have low vision, are deafblind, or are hard of hearing, alternative seating can be a good option for students who focus better when seated closer to the teacher or demonstration.
- Provide alternative lighting, such as low-light for light sensitivity or spot lighting to help visual targeting. Lower lighting can have a calming effect on students who may experience higher energy or agitation in brighter lighting. While providing a spotlight or an isolated brighter light can still provide the necessary accommodation for a student who requires it for visual targeting.
- Create background contrast which helps lab materials to stand out better. This helps all students to focus on the demonstration.
- Have students observe and touch lab materials (i.e., balloon, string, blow dryer) before, during, and after the demonstration. In addition to helping students with vision and hearing impairments, hands-on experiences are proven to be beneficial for students who are more kinesthetic learners.
- Describe the lab materials and the demonstration. Providing verbal descriptions before, during, and after lab demonstrations not only gives more access to students who are blind, low-vision, or hard of hearing, but also supports students who are naturally auditory learners and those who need to experience information in more than one kind of format.

ADAPTATIONS FOR DRAWING DIAGRAMS (STEPS 1 & 2):

UDL Principle: [Multiple Means of Action and Expression](#)

- Provide tactile options for creating diagrams (e.g., sticky dots, Wikki Stix, textured paper, etc.). Allowing students to create diagrams with materials other than pencils or markers enhances the enjoyment of learning for everyone, especially the more artistic and kinesthetic learners.

ADAPTED MATERIALS:

N/A

IMPLEMENTATION NOTES:

Many students who are blind or have low vision are missing information that is learned incidentally and may need time to observe or explore the lab materials before the activity. As educators, we must not assume that our students who are blind or have low vision have previously encountered the same objects and materials as their nondisabled peers. Provide opportunities to touch materials for labs and demonstrations, whenever this can be done safely and without interference with lab results. Students with low vision may need to get closer to the lab or demonstration, or may need alternative lighting or background contrast to ensure full access.

MY STUDENTS' UNIQUE NEEDS:

I work with students who are blind, have low vision, are deafblind, or are blind/hard of hearing. My students need access to demonstration materials, readings, and diagrams in alternative formats or with specific accommodations. All students who are blind, have low vision, or are blind/hard of hearing will benefit from detailed verbal descriptions of lab materials, procedures, and results before, during, and following the lab demonstration. Students who are deafblind or blind/hard of hearing will also need full hands-on access to materials, need to be placed closer to the teacher, or use FM systems or other audio equipment to hear instruction. Lastly, students who are blind, have low vision, are deafblind, or are blind/hard of hearing will require access to appropriate assistive technology (e.g., braille writer or braille display device, screen-reading software on laptop, voice-over for iOS devices, magnification software, video magnification devices, etc.) in order to access activity worksheets and record written observations.

