



# **Stackable Instructionally- embedded Portable Science (SIPS) Assessments Project**

## **Grade 5 Science**

### **Unit 4: Differentiation Strategies and Resources**

#### **Earth and Its Gravitational Force and Motion**

**September 2023**

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# SIPS Grade 5 Unit 4 Differentiation Strategies and Resources

“Universal Design for Learning (UDL) is a framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn.” (CAST, 2022). Taking time to reflect on prior instruction when planning for accessible, differentiated, and culturally responsive instruction for diverse learners and culturally diverse classrooms serves to identify ways to improve future instructional practices. The [UDL Guidelines](#) provide a framework for this reflection. The guidelines include three principles, Multiple Means of Engagement, Multiple Means of Representation, and Multiple Means of Action & Expression as ways to focus on variety and flexibility in instructional practices.



Multiple Means of Engagement



Multiple Means of Representation




Multiple Means of Action & Expression

By examining instruction and instructional materials through the lens of each of these principles, we can identify and thus reduce or remove barriers to diverse learners. Accommodations typically reserved for students receiving special education, students who have a 504 plan, and English Learners can be made available to all students using the UDL principles, thus allowing all students to benefit from the accommodations.

This document provides strategies and examples for each UDL principle to support the design and delivery of accessible instruction and learning opportunities for all students aligned to the SIPS Grade 5 Unit 4 Instructional Framework.

## Multiple Means of Engagement

Providing Multiple Means of Engagement (e.g., allowing choices, authentic scenarios, varying demands, and clear goals), broadens the opportunities for gaining and sustaining students’ interest and cognitive engagement in learning the content.

 <p><b>Multiple Means of Engagement</b>          “Emotions drive our cognition, including our attention, memory, and planning/executive functions.” (Hartmann &amp; Posey, 2020)</p>	
Strategies	Examples
Provide choices.	<ul style="list-style-type: none"> <li>Allow students to choose how they want to model the relationship between distance and size.</li> <li>Allow students to choose how they want to graph the hours of daylight and dark (e.g., online graph, double bar graph, tactile, with drawings or photos, etc.).</li> <li>Provide choices for places to “adopt” (e.g., Japan, Guam, or Australia) to use to illustrate the difference in daylight between there and where the student lives.</li> </ul>



## Multiple Means of Engagement

“Emotions drive our cognition, including our attention, memory, and planning/executive functions.” (Hartmann & Posey, 2020)

Strategies	Examples
Allow ownership of parts of instructional tasks.	<ul style="list-style-type: none"><li>Resources: <a href="#">Google Earth</a></li><li>Have students establish their own goals (academic or behavioral) that work towards the goals and objectives of the unit (e.g., “I can ask questions when I do not know what to do.” “I can take five deep breaths when I get frustrated.”)</li><li>Allow students to choose how to practice the science vocabulary terms (e.g., use terms in a story, create a song about each, pair with illustrations that describe the term) and how to present what they did (e.g., perform live, record and share, with photos, written format, orally share).</li><li>Resources: <a href="#">Tips for Educators of ELLs: Teaching Vocabulary in Grades 4-12</a>, <a href="#">How to Teach ESL Vocabulary: Top Methods for Introducing New Words</a></li></ul>
Make work authentic and relevant.	<ul style="list-style-type: none"><li>Make the connection between the stars and student experiences by having students share what the stars look like from their home, from a trip they have taken, a video, or photographs.</li><li>Highlight a diverse group of scientists and their roles (e.g., incorporate in presentation, show videos, wall posters, etc.)</li><li>Share the goals in multiple ways (e.g., write on whiteboard, read aloud, include on handouts).</li><li>Resources: <a href="#">Deaf Astronomers Throughout History</a>, <a href="#">Wanda Díaz-Merced (astronomer with a visual impairment)</a>, <a href="#">16 Black Americans in Astronomy and Space</a>, <a href="#">Silvia Torres-Peimbert (Latina astronomer)</a></li></ul>
Provide safety and reduce distractions.	<ul style="list-style-type: none"><li>Be responsive to cultural differences when asking students to participate in class and/or small groups (e.g., Some cultures find talking over each other as normal while others wait for complete silence before contributing; some are comfortable with directness or do</li></ul>



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Strategies	Examples
	<p>not have the language level to be polite. Eye contact varies by culture.).</p> <ul style="list-style-type: none"><li>• Allow students to ask questions or seek help in multiple ways, including anonymously (e.g., individually, emailing the teacher, sticky note on board, small group, asking a peer, etc.).</li><li>• Resources: <a href="#">Cultural Differences in the Classroom</a>, <a href="#">What is tactile sensitivity?</a></li></ul>
Present clear and important goals and objectives.	<ul style="list-style-type: none"><li>• Explain scientific terms along with the goals so that students understand what they are working towards (e.g., give examples of different mediums when looking at wave properties and repeating patterns).</li><li>• Pair goals with steps to reach the goal, such as a checklist of questions to get answered (e.g., What happens to light and sound waves when they run into new matter?).</li><li>• Resources: <a href="#">Goal Setting for Students: Nurturing a Growth Mindset</a></li></ul>
Provide different levels of support and scaffolds.	<ul style="list-style-type: none"><li>• Incorporate accommodations and supports into tasks for everyone. Some students may be able to complete a multiple-step task with no support, while other students may need verbal or visual cues to complete each step.</li><li>• Provide extended time as needed.</li><li>• Resources: <a href="#">Task Analysis Worksheets</a></li></ul>
Encourage collaboration with partners and in groups.	<ul style="list-style-type: none"><li>• Be clear about the purpose and expectations of cooperative group activities (e.g., the task, student roles, expectation of contribution, freedom to share information within and across groups, cooperative and not competitive, etc.).</li><li>• Be intentional about how groups are formed so that each includes a variety of students (e.g., race, national origin, socioeconomic status, disability, etc.).</li><li>• Have a collaborative group work on a fun activity with the teacher modeling how to provide support to a student with a disability.</li></ul>



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Strategies	Examples
	<ul style="list-style-type: none"><li>• Ensure everyone has a means to contribute. For some this might be to assign a role that matches their strengths, for some, it might be to provide needed vocabulary on their <a href="#">AAC</a> system, and for some, it might be to reduce the size of the group and allow options for seating (e.g., exercise ball).</li><li>• Resources: <a href="#">Successfully Using Communication Practices in the Inclusive Class</a></li></ul>
Support self-reflection and evaluation.	<ul style="list-style-type: none"><li>• Provide support to help with transitions (e.g., a task list, a personal checklist, a visual timer, etc.).</li><li>• Have students use a self-reflection chart on which individual students can monitor his/her progress. Include ancillary behaviors such as asking questions, contributing to the group, and asking for help. Remind students to use the chart routinely.</li><li>• Provide tools to foster independence, prepare students for the next activity, break tasks into smaller steps, and aid transition.</li><li>• Resources: <a href="#">The Autism Helper: Self-Monitoring</a></li></ul>
Encourage communication about frustrations and guide self-management of the frustrations.	<ul style="list-style-type: none"><li>• When students show signs of frustration such as withdrawing or exhibiting distracting behaviors, encourage them to communicate what is frustrating them and what they think might help. For some students, this might be a frustration with the language barrier, and they need to take a break, for others, it might require a simple chart that includes symbols to indicate how they feel and options for dealing with the frustrations (e.g., I need a break. I need help. I need to work alone. etc.).</li><li>• Develop a plan with an individual student for managing disruptive or distracting behaviors and support the student in monitoring the plan (e.g., Develop a discrete signal (e.g., tap on student’s desk) to alert the student to</li></ul>



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Strategies	Examples
	initiate the pan (e.g., counting backward from 20.). <ul style="list-style-type: none"> <li>Resources: <a href="#">What Are Break Cards and How Do I Use Them?</a>, <a href="#">(Printable) Break Cards: How to Use Break Card Visuals at Home, School, and Special Education</a></li> </ul>

### Multiple Means of Representation

Providing Multiple Means of Representation (e.g., variety of presentation modes, clarifying vocabulary, activating background knowledge) allows for students to receive and comprehend the content.



### Multiple Means of Representation

“Representation is the process of collecting and presenting information to students in a way that students can understand, engage with, and learn from.” (Novak, 2021)

Strategies	Examples
Provide flexible ways to present information.	<ul style="list-style-type: none"> <li>Present constellations in multiple ways (e.g., video, photos, tactile).</li> <li>Provide students with notes to support information shared verbally and/or via a slide presentation.</li> <li>Create examples of graphs for graphing data of times of sunrise, sunset, daylight, and dark (e.g., pictograph, bar graph, tactile, etc.).</li> <li>Pair anchor chart information with graphics.</li> <li>Resources: <a href="#">Umbrella Sky Activities</a>, <a href="#">General Tips for Teaching Science to Students with Visual Impairments</a>, <a href="#">Tips for Teaching Science (Deaf and Hard-of-Hearing Students, Communication and Language Strategies for Science Inquiry Classroom (Part 2))</a>, <a href="#">Design Principles for Tactile Graphics</a>, <a href="#">Tactile Graphics</a></li> </ul>
Provide information in a variety of ways.	<ul style="list-style-type: none"> <li>Provide information online, in print, as graphics, and videos (e.g., magazine articles on shadows, moon phases, constellations, etc.).</li> <li>Wait time between a question and a person’s reply varies across cultures. Therefore, during classroom discussion (e.g., phases of the moon, the effect that distance and size have on brightness of stars), be aware of this and ensure everyone has the opportunity to contribute.</li> </ul>



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Strategies	Examples
	<ul style="list-style-type: none"><li>Resources: <a href="#">Shadow Facts for Kids</a>, <a href="#">The Science of Light and Shadows</a>, <a href="#">Phases of the Moon</a>, <a href="#">Phases of the Moon for Kids</a>, <a href="#">Astronomy for Kids</a>, <a href="#">Constellations</a>, <a href="#">Simple Adaptations to Increase Accessibility in Science Instruction</a>,</li></ul>
Describe the meaning of vocabulary and symbols.	<ul style="list-style-type: none"><li>Frontload vocabulary (e.g., rotation, revolution, gravity, friction, momentum, moon phases, etc.) by using a word wall or a glossary paired with pictures.</li><li>Provide a video describing terminology (e.g., Earth’s rotation, revolution, shadow.)</li><li>Provide illustrated vocabulary word banks in science journals.</li><li>Speak slowly and clearly combined with gestures or acting out words, phrases, and directions to help English Learners and students develop science vocabulary.</li><li>Describe the meaning, “Something that repeats in an expected way is a pattern.” vs. a formal definition, “a natural or chance configuration” <a href="#">Vocabulary.com</a>.</li><li>Resources: <a href="#">Shadow (video)</a>, <a href="#">Phases of the Moon : Astronomy and Space for Kids (video)</a>, <a href="#">Why Does the Moon Change? Earth’s Rotation and Revolution</a>, <a href="#">5<sup>th</sup> Grade Science TAKS Vocabulary</a></li></ul>
Explain the structure of graphs, charts, diagrams, models, etc.	<ul style="list-style-type: none"><li>Directly teach the purpose of arrows in a model.</li><li>Demonstrate how to graph.</li><li>Resources: <a href="#">The Importance of Arrows in Science</a></li></ul>
Provide support for decoding of written text and symbols.	<ul style="list-style-type: none"><li>Have peers read to each other, read aloud to the class, provide an audio version, provide a summarized version, etc.</li><li>Provide text with supporting pictures.</li><li>Digitize text and have students use a screen reader.</li><li>Resources: <a href="#">TIP #19: Creating Accessible Grade-level Texts for Students with Significant Cognitive Disabilities in Inclusive Classrooms</a>, <a href="#">Teaching Science in Special Education</a></li></ul>



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“Representation is the process of collecting and presenting information to students in a way that students can understand, engage with, and learn from.” (Novak, 2021)

Strategies	Examples
Support language acquisition (e.g., English Learners, AAC users, ASL users).	<ul style="list-style-type: none"><li>• Connect dominant language (e.g., English) with first language (e.g., Spanish).</li><li>• Have a student respond using first language and then translate into English. Check understanding on content and not on sentence structure and grammar.</li><li>• Allow students to use preferred and possibly multiple ways to communicate.</li><li>• Ensure that the needed vocabulary is in a student’s AAC system.</li><li>• Resources: <a href="#">Supporting ELL Success with STEAM and Hands-On Learning (Part 2)</a>, <a href="#">Getting to Know your ELLs: Six Steps for Success</a></li></ul>
Supply or activate background knowledge.	<ul style="list-style-type: none"><li>• Allow students to share and make connections with their personal and cultural experiences with night sky (rural vs. urban), seasons (rainy v dry, winter during our summer), and length of daylight (almost equal when closer to the equator).</li><li>• Use a variety of ways to remind students about previous learning and review vocabulary (e.g., graphic organizers, videos, photographs, simple texts, etc.).</li><li>• Resources: <a href="#">Activate Background Knowledge</a>, <a href="#">Activating Prior Knowledge with English Language Learners</a></li></ul>
Emphasize key information.	<ul style="list-style-type: none"><li>• Use graphic organizers to emphasize important information and key concepts.</li><li>• Create a QR code and place it on science posters, worksheets, study cards, etc. that will link to a specific online resource.</li><li>• Highlight key ideas by posting them on the wall, highlighting them on notes, repeating them during instruction, etc.</li><li>• Resources: <a href="#">Free Graphic Organizers</a>, <a href="#">Best Free QR Code Sites for Teachers</a></li></ul>
Provide models and scaffolds to aid in comprehension.	<ul style="list-style-type: none"><li>• Provide sentence frames or prompts to support student responses.</li></ul>





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Strategies	Examples
	<ul style="list-style-type: none"> <li>• Provide a variety of explicit prompts for each step or chunk of an activity (e.g., verbal, visual steps, checklist, checklist paired with graphics, tactile steps).</li> <li>• Provide opportunities for partner talks to allow students to build confidence in their knowledge and speaking prior to sharing with the class.</li> <li>• Resources: <a href="#">Scaffolds to Support English Language Learners in Writing and Discussion</a>, <a href="#">Mini Schedules</a>, <a href="#">Using Visual Schedules to Support Students with Autism</a></li> </ul>
Support transfer and generalization of skills and knowledge.	<ul style="list-style-type: none"> <li>• Include opportunities to review and practice prior knowledge and skills along with new knowledge and skills.</li> <li>• Make explicit connections between concepts (e.g., length of daylight, constellations, phases of the moon) and students’ personal experiences.</li> </ul>

### Multiple Means of Action & Expression

Providing Multiple Means of Action & Expression (e.g., a variety of methods to respond to instruction, and a variety of ways to interact with the instructional materials) helps students to use their strengths and abilities to access the instructional materials and express what they understand.



### Multiple Means of Action and Expression

“By divorcing the presentation mode from the learning, all learners can find a way to apply what they’ve learned and demonstrate proficiency.” (Hogle, 2018)

Strategies	Examples
Provide options for accessing instructional activities and materials.	<ul style="list-style-type: none"> <li>• Provide raised-lined graph paper and allow students to use bold markers, tape, Wikki Stix®, etc. to graph sunrise, sunset, daylight, and dark.</li> <li>• Ensure that all students can physically access and interact with all activities and materials (e.g., table high enough to allow wheelchair access, adaptation that allows access to print material, space to move to all areas in a classroom or lab, book holder, adapted keyboard, single switch, etc.).</li> </ul>



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Strategies	Examples
	<ul style="list-style-type: none"><li>• Ensure access is available for students who have a hearing impairment or visual impairment, who are blind, deaf, or deaf/blind (e.g., include audio description for video content, closed captions for video content, alternative text for graphics, preferential seating, an American Sign Language (ASL) interpreter, screen reader, enlarged text, etc.).</li><li>• Allow for differences in rate, timing, speed, and range of motion (e.g., Allow enough time for all students to process the question and formulate their responses; Allow enough time for all students to move from one activity to the next, or to perform a task.).</li><li>• Resources: Interactive Map: <a href="#">DIY Raised Line Paper and Other Simple Ideas</a>, <a href="#">Choosing high contrast color schemes for low vision</a>, <a href="#">Best Practices for Creating Accessible Video for Blind and Low-Vision Viewers</a>, <a href="#">Diagram Center – General Guidelines (alternative text)</a></li></ul>
Vary the ways for students to respond to questions or a task.	<ul style="list-style-type: none"><li>• Allow students to write their “driving questions” down or share with a partner before having everyone share as a class. This allows students who may need more time to actively participate in the class discussion.</li><li>• Ensure students who use American Sign Language (ASL) to communicate know the needed science vocabulary.</li><li>• Provide sentence starters, a writing template, or an expanded word bank.</li><li>• Allow students to dictate their science journals (e.g., daily observations of the sun, moon, stars, shadows).</li><li>• Allow students to use their preferred mode of communication to respond to questions and present information (e.g., writing in their first language and then transcribing into their second language, providing in writing, using AAC, etc.).</li></ul>



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Strategies	Examples
	<ul style="list-style-type: none"><li>• Ask questions that only require one-word responses or a physical response (e.g., pointing, gesturing, matching, sorting) for students who are developing language or beginning to learn English.</li><li>• Resources: <a href="#">ASL STEM</a>, <a href="#">Power-Assisted Writing for Science: Developing Expository Writing in a Multimedia Environment</a>, <a href="#">Better Living Through Technology – Keyboards for People with Disabilities</a>, <a href="#">Pathways to Reading to Learning for Students with Cognitive Challenges</a>.</li></ul>
Use technology or assistive technology (AT) to broaden access to instructional materials.	<ul style="list-style-type: none"><li>• Make use of technology such as spellcheckers, word prediction software, and text-to-speech software.</li><li>• Use three-dimensional objects for students who have fine motor limitations (e.g., small Legos® to graph the number of hours of daylight)</li><li>• Enhance 2-D models by adding tactile feedback (e.g., using Wikki Stix®).</li><li>• Have students be actively involved in presentations by using an adapted mouse to advance slides, an AAC system to orally share information, an ASL interpreter to share information, etc.</li><li>• Provide low-tech tools such as pencil grips, page-turners, reading guides/strips, slant boards, tactile rulers, manipulatives, etc.</li><li>• Resources: <a href="#">Mouse Alternatives</a>, <a href="#">The Use of Wikki Stix Within the Classroom</a>, <a href="#">Creating Large Print and Tactile Graphs</a>; <a href="#">DIY Reading Strips</a>, <a href="#">5 Benefits of a Slant Board for Writing</a>, <a href="#">Clusive™: An Accessible, Digital Reading Platform</a>, <a href="#">8 Examples of Assistive Technology and Adaptive Tools</a></li></ul>
Provide varied levels of support and practice.	<ul style="list-style-type: none"><li>• Provide captions for videos.</li><li>• Provide differentiated homework or seatwork that still practices the key concepts of the assignment (e.g., some students complete</li></ul>



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Strategies	Examples
	<p>sentence starters as opposed to writing paragraphs).</p> <ul style="list-style-type: none"><li>• Set bookmarks to specific online pages for students to research information.</li></ul>
Support planning and strategy skills.	<ul style="list-style-type: none"><li>• Include prompts to check their thinking and strategy for solving a task.</li><li>• Model think-alouds showing how to solve a problem or think through a task (e.g., When I hold the object close to the light source, the shadow . . . As I move the object away from the light source, the shadow . . .).</li><li>• Check in with students to see if they understand the task and if they need support to understand a concept.</li><li>• Resources: <a href="#">Interactive Think Aloud</a></li></ul>
Provide supports to help with managing information and resources.	<ul style="list-style-type: none"><li>• Provide the option, as available, for students to conduct initial research in their first language.</li><li>• Bookmark or place hyperlinks on the homepage of relevant online resources.</li><li>• Create a digital resource document that includes links to websites paired with graphics.</li><li>• Slip a page from a book, magazine, or worksheet into a plastic protector and highlight key information.</li><li>• Resources: <a href="#">3+ Digital Resources for Your Classroom</a>, <a href="#">How to Link to a Specific Part of A Webpage &amp; Share It</a>, <a href="#">Share pages with a QR Code</a></li></ul>

## Resources

1. [UDL: Action & Expression \(cast.org\)](https://udlguidelines.cast.org/action-expression)  
[https://udlguidelines.cast.org/action-expression]
2. [Design for Each and Every Learner: Universal Design for Learning Modules | Design for Each and Every Learner: Universal Design for Learning Modules | Institute on Community Integration Publications \(umn.edu\)](https://publications.ici.umn.edu/ties/universal-design-for-learning-modules/design-for-each-and-every-learner)  
[https://publications.ici.umn.edu/ties/universal-design-for-learning-modules/design-for-each-and-every-learner]
3. [Promoting Self-Determination Among Students With Disabilities: A Guide for Tennessee Educators \(vumc.org\)](https://vkc.vumc.org/assets/files/resources/psiSelfdetermination.pdf)  
[https://vkc.vumc.org/assets/files/resources/psiSelfdetermination.pdf]
4. [The Difference Between UDL and Traditional Education | Understood](https://www.understood.org/en/articles/the-difference-between-universal-design-for-learning-udl-and-traditional-education?_sp=4699b34b-0329-45fe-aaa9-03be1195cf0a.1643652688576)  
[https://www.understood.org/en/articles/the-difference-between-universal-design-for-learning-udl-and-traditional-education?\_sp=4699b34b-0329-45fe-aaa9-03be1195cf0a.1643652688576]
5. [Collaborative Group Techniques | Scientific Reasoning Research Institute \(umass.edu\)](https://www.srri.umass.edu/topics/collaborative-group-techniques/)  
[https://www.srri.umass.edu/topics/collaborative-group-techniques/]
6. [Impact of UDL on Academic and Cultural Diversity - A Study on Universal Design Learning \(google.com\)](https://sites.google.com/site/astudyonudl/impact-of-udl-on-academic-and-cultural-diversity)  
[https://sites.google.com/site/astudyonudl/impact-of-udl-on-academic-and-cultural-diversity]
7. [Universal Design for Learning Instructional Strategies \(storyboardthat.com\)](https://www.storyboardthat.com/articles/e/udl-universal-design-for-learning)  
[https://www.storyboardthat.com/articles/e/udl-universal-design-for-learning]
8. [Cultural Differences in the Classroom | Lifespan Development \(lumenlearning.com\)](https://courses.lumenlearning.com/suny-lifespandevlopment/chapter/cultural-differences-in-the-classroom/)  
[https://courses.lumenlearning.com/suny-lifespandevlopment/chapter/cultural-differences-in-the-classroom/]

## References

- CAST. (2022, February 1). *About Universal Design for Learning*. Retrieved from CAST: <https://www.cast.org/impact/universal-design-for-learning-udl>
- Hartmann, E., & Posey, A. (2020). *Teachers: Understand and Communicate about Emotions to Support Deep Learning (DL #14)*. Retrieved from TIES Center: <https://publications.ici.umn.edu/ties/building-engagement-with-distance-learning/teachers-understand-and-communicate-about-emotions-to-support-deep-learning>
- Hogle, P. (2018, November 29). *UDL is the Key to Culturally Inclusive Instructional Design*. Retrieved from Learning Solutions: <https://learningsolutionsmag.com/articles/udl-is-the-key-to-culturally-inclusive-instructional-design>
- Novak, K. (2021, March 28). *UDL: Providing Multiple Means for Representation*. Retrieved from Novak Education: <https://www.novakeducation.com/blog/udl-providing-multiple-means-for-representation>