



Health Science for All Students

Differentiation in the Health Science Classroom

Friday, September 22nd

10:00-10:50am

Materials Access:

<https://goo.gl/z1gz1u>



Indiana
DEPARTMENT OF
EDUCATION

Working Together for Student Success

Introduce ELA Literacy Team

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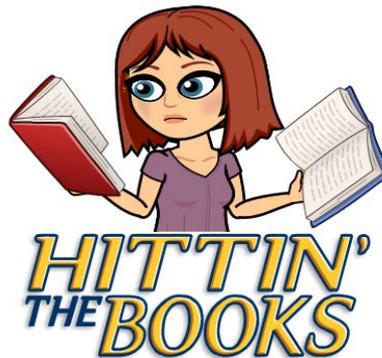
LET ME KNOW



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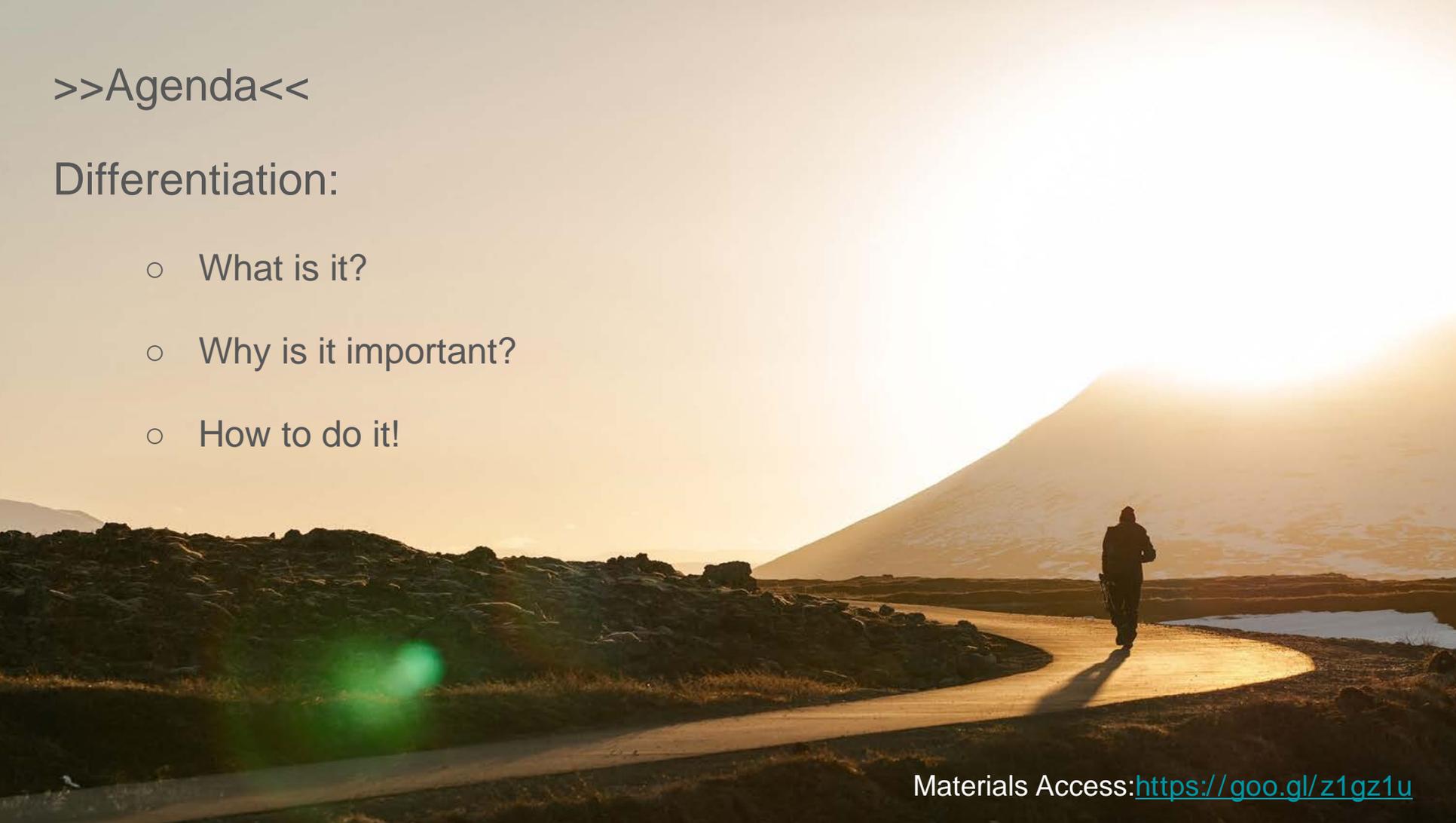
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>>Agenda<<

Differentiation:

- What is it?
- Why is it important?
- How to do it!



“Differentiation—tailoring instruction and/or assessment to meet individual students’ needs.”



Edutopia

Differentiation is making sure that the right students get the right learning tasks at the right time.



Lorna Earl, author of [Assessment as Learning](#)

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What is it?

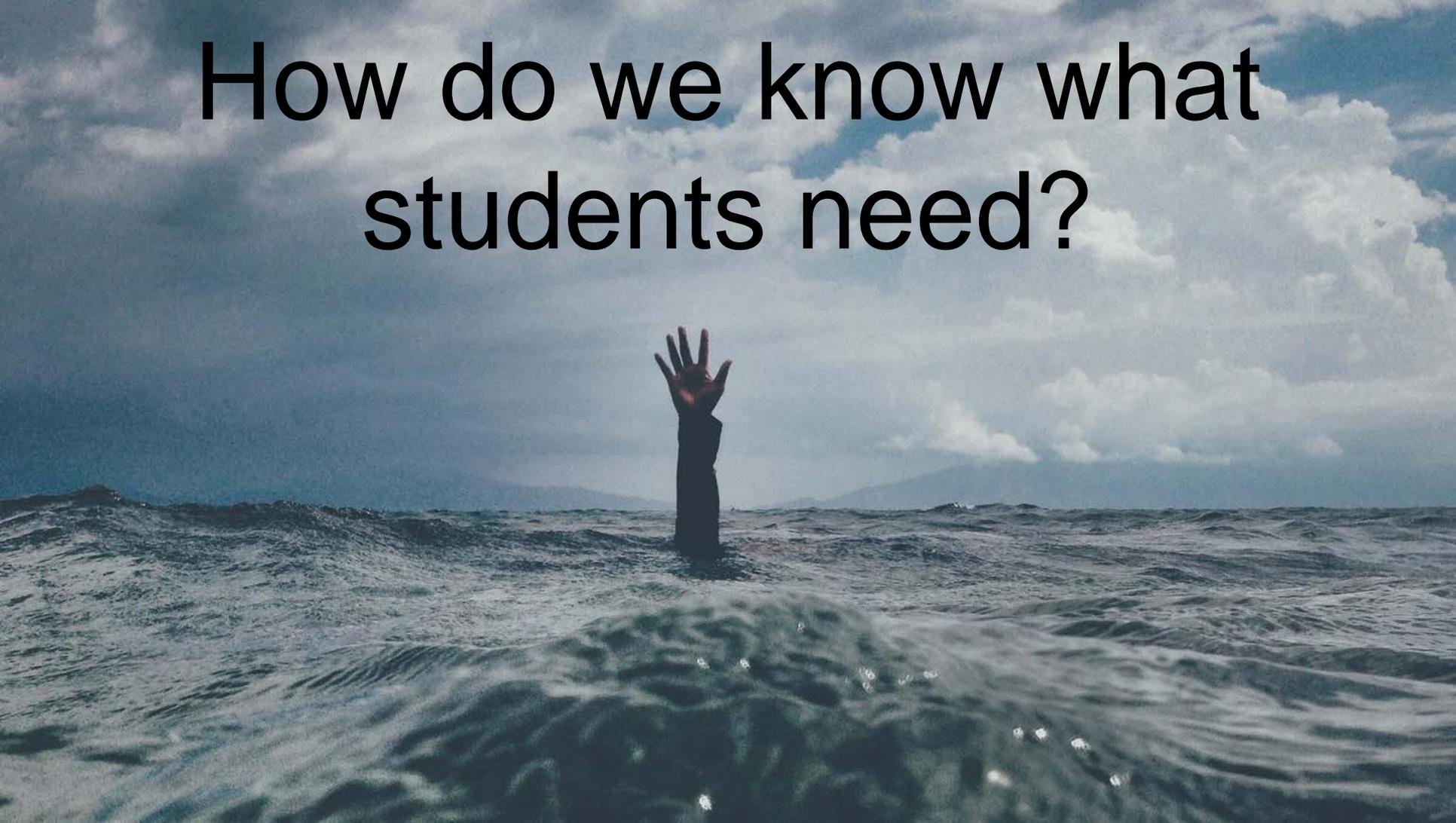
Tailoring instruction to meet individual needs based on student readiness, interest, or learning profile

Content, process, products, or learning environment

Use of flexible grouping and ongoing assessment makes differentiated instruction successful



How do we know what
students need?



Differentiated Instruction



- Can excite the **advanced student** while simultaneously structuring curriculum to support **struggling students**
- One standard approach to teaching will not meet the needs of all-or even- most students
- Need to vary instruction to eliminate the boredom of some and the baffling of others
- Trying to reach ALL students

Differentiated Instruction

Source: Tomlinson, Carol Ann. *The Differentiated Classroom: Responding to the Needs of All Learners*. Alexandria, VA: ASCD, 1999.

Teachers Differentiate Via Based on 1.) Student Readiness, 2.) Interest, or 3.) Learning Profile

Content (*what students learn*)

- Curriculum topics, concept or themes;
- Provides students with choices in order to add depth to learning;
- Provides students with additional resources that match their levels of understanding

Process (*how students learn*)

- Reflects student learning styles and preferences
- Refers to how students make sense or understand the information, ideas, and skills

Product (*the end result of student learning*)

- Tends to be tangible
- Reflects student understanding
- Differentiates by providing challenge, variety, and choice

Learning Environment (*the way the classroom works and feels*)

Content

- Using reading materials at varying readability levels
 - Use a variety of informational delivery methods: video, infographic, audio, text, guest speaker
- Using vocabulary lists at readiness levels of students
- Small group meetings & conferences
 - to re-teach an idea or skill for struggling learners or
 - to extend the thinking or skills of advanced learners



Process

- Tiered activities through which all learners work with the same concepts, but have different levels of support, challenge, or complexity
- Personal agendas
 - Task lists written by teacher with student containing common class work, but also addresses needs of learner
 - Varying length of time a student has for a task
 - support struggling learners or encourage advanced learners to go greater in-depth





Products

- Giving students options of how to express required learning
- Flexible grouping to work on products
- Provide choice



Source: Tomlinson, Carol Ann. *The Differentiated Classroom: Responding to the Needs of All Learners*. Alexandria, VA: ASCD, 1999.

Learning Environment

- Physical: Different spaces within classroom
 - Quiet work spaces for individual work
 - Space that invites student collaboration
 - Cultural diverse materials
 - Developing routines that allows teacher to work with students
- Affective: the social-emotional environment within the classroom
 - Safe and accepting atmosphere
 - Develop Team spirit for learning
 - Empathy and Rapport





Turn and talk!

What's one thing you already do in class that can be differentiated for your students?

What do you want to know more about?





Strategies for Differentiated Instruction

- **Know, Understand, and Do (KUD)**

- Teacher planning tool, creates focus in a unit/lesson
- Explicitly detail
 - What you want students to KNOW
 - What you want students to UNDERSTAND
 - What you want students to DO



EXAMPLE—Medical Terminology

K:

Students will know what cells, tissue organs, and systems are.

U:

Students will understand how cells, tissue organs and systems function in the human body.

D:

Students will write to describe the relationships between between cells, tissue organs, and systems in the human body.



In the moment differentiation: *Checks for understanding*

- Color Cards

- Red = "Stop, I need help."
- Green = "Keep going, I understand."
- Yellow = "I'm a little confused."

- Exit Slip

- Have students reflect on the lesson as they leave class

- Misconception check

- Given a common misconception about a topic, students explain why they agree or disagree with it.



Menus

- Offers students a way to make decisions
- Could be a single lesson, a week-long session, or a unit of study

Possible Format:

- **Appetizers (Negotiables)**
 - a list of tasks, students select one item
 - DOK 2/3 tasks
 - expands upon the imperative task
- **The Main Dish (Imperatives)**
 - a task that everyone must complete
- **Side Dishes (Negotiables)**
 - a list of tasks, students select two items
- **Desserts (Options)**
 - optional but irresistible tasks
 - high interest and challenging
 - could be extra credit enrichment





The Main Dish: Complete **ONE** of the following items to explain basic cleaning techniques of animal kennels and bedding, examination rooms, and surgical suites.

- A pamphlet
- An instructional video
- An infographic
- A how-to newspaper article

Dessert: Complete **ONE**

- Interview veterinary assistant about the challenges of their job
- Join a Twitter Chat about veterinary issues
- Create an advertisement for a veterinary clinic

Side Dishes: Complete at least **TWO** to demonstrate your knowledge of pharmacy and pharmacology commonly performed in veterinary facilities

- Write a persuasive editorial about the process of storing and dispensing pharmacological and biological agents
- Create a graphic organizer to classify common drugs used in veterinary offices
- Create a dramatic recreation of scenarios where a veterinarian has to simplify medical technology for a client.
- Create a commercial advertising a pharmacological product. Be sure to include a description of side effects and common uses



Cubing (could create/use a physical cube)

- Pick a topic and look at from six different angles

Tip: This works really well with a dice! In groups, have students taking turns rolling to see how they interact with the concept.

1. Describe
2. Compare
3. Associate
4. Apply it
5. Analyze
6. Argue



Tic-Tac-Toe

- Design 9 different tasks
- Students have to get 3 in a row



Tic Tac Toe Example

Prepare a 20 questions quiz with answers about genetics and heredity. Be as specific as possible, multiple-choice, true & false, etc.

Design a board game based on genetics and heredity. Use vocabulary from the unit.

Create a ppt or movie covering survival of the fittest. Who is Charles Darwin? Identify behaviors, instincts, adaptations, and any other survival instincts.

Create a crossword puzzle using the vocabulary words from the text. Must include a blank copy and an answer key!

Construct a poster or art creation demonstrating punnett squares and how they are used to understand% chances for offspring. Explain dominant vs. recessive traits.

Research & explain the importance of Watson and Crick, Franklin, and Mendel. Identify what each is known for and how they are relevant to this course.

Compose a poem using the vocabulary words from the text

Create a concept map to show the symbiotic relationships with examples.

Compare cell division. Explain difference between purposes; growth and repair and reproduction: single cell organisms vs. multi cell organisms

Socratic Seminar

- Provide students with a text
- Students respond to thoughtful questions by the instructor or peers

Good Socratic questions are always open-ended, thought-provoking, and clear.

Open-ended: Questions are designed to elicit multiple perspectives. Numerous answers can be correct as long as the students stay on topic. ... Then, they should challenge students to evaluate and synthesize their ideas.

Train your students to think deeply about your subject by teaching them how to write these!





Task cards

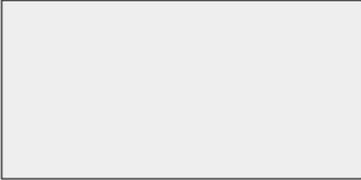
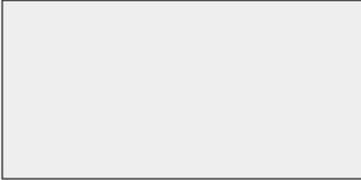
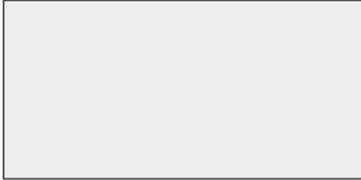
- Different level of tasks assessing the same content
- Example; learning styles

<p><i>Visual</i> Create a digital illustration demonstrating the connection between personal oral hygiene and patient care. Use images and illustrations in text to support your ideas.</p>	<p><i>Auditory</i> After listening to the news report about current dietary trends, record a follow-up news report about the different dietary guidelines at different stages of life connecting to the report you first listened to.</p>
<p><i>Verbal</i> Read about the major factors that influence nutrition and dental health, then create a one-pager to share with future patients.</p>	<p><i>Kinesthetic</i> Create a real-life scenario in which a patient has a concern about dental disease but is also concerned about cost for care.</p>



Retention: Openers and Closers



<p>What the research shows!</p>	<p>Great Lesson</p>	<p>Opener + Great Lesson</p>	<p>Opener + Great Lesson + Closer</p>
<p>Unit Test w/o review</p>			
<p>3 Weeks Later w/o review</p>			



What is an Opening Strategy?



- A hook to engage students in learning
- Provide a connection between what is known and what is to be learned
- Communication among students
- Should occur at beginning of lesson - not always the beginning of the period
- Is NOT “Bell Work”
- Is NOT usually quiet

Examples of openers:

- Using relevant songs to pique interest
- Instructional video clips
- Comics and cartoons
- An intriguing image
- Storytelling
- Interesting quote or question



Discussion



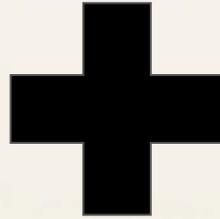
What is a Closing Strategy?

- How teacher ends lesson
- Students should be actively engaged
- Opportunity for student to process and reflect what they have learned
- Allows brains to link and construct meaning
- Should be collaborative among students
- Should provide teacher with feedback for future planning
- Is NOT asking if there are questions
- Is NOT teacher summarizing lesson



Examples of closers:

- Exit tickets
- Statement of insight stems
- One-word summaries
- 3-2-1



Discussion



Notice that all of these include discussion.

When students articulate their learning, it helps fossilize it in their brain.

Find more openers and closers [here!](#)



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BYE!



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References

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McCarthy, J. (2016). Differentiating Classroom Instruction. *Edutopia*. Retrieved from: <https://www.edutopia.org/collection/differentiating-classroom-instruction-john-mccarthy>

