Teaching Diverse Learners in the Science Classroom

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Every child has a different learning style and pace. Each child is unique, not only capable of learning but also capable of succeeding.

Robert John Meehan

I CANNOT TEACH ANYBODY ANYTHING. I CAN ONLY MAKE THEM THINK.

- Socrates
Overview

× To make meaning from a text, students need support before reading, while reading and after reading.
× Here you will learn different strategies you can apply to your classroom to support science literacy.
Before Reading Support
Vocabulary Building

- Vocabulary exposure vs. vocabulary instruction
- Vocabulary instruction strategies
  1. Vocabulary Powerpoint
  2. Question of the Day
Vocabulary Exposure vs. Instruction

Vocabulary Exposure
- Looking up words
- Isolated vocabulary drills
- If it pops up
- Only **bolded** words from texts

Vocabulary Instruction
- Seeing words in rich context provided by authentic texts
- Get students actively engaged
- Multiple opportunities for exposure
Researchers estimate that it could take as many as 17 exposures for a student to learn a new word.

- J. F. Baumann, et. al.
Vocabulary instruction

1. Dedicate a portion of the regular classroom lesson to explicit vocabulary instruction

2. Use repeated exposure to new words in multiple oral and written contexts and allow sufficient practice sessions

3. Give sufficient opportunities to use new vocabulary in a variety of contexts through activities

4. Provide students with strategies to make them independent vocabulary learners

http://www.adlit.org/article/27738/#:~:text=Words%20are%20usually%20learned%20only%2C%20an%20extended%20period%20of%20time.
1. Vocabulary Powerpoint

- Start of Unit
- Homework/ in-class work
- Collaborative
- Reference
- Scaffolding
- Formative Assessment
- Differentiation
- Students have a blast!
- Multiple skills addressed
  - Executive function
  - Computer
  - Reading
  - Research
2. Question of the Day

- Already on the board at the start of class
- Different modes of answering the question:
  - Reading /Writing
  - Drawing a picture
  - Making a video
- Opportunities for class collaboration
Question of the Day cont.

Reading/writing for vocabulary enrichment

- Newsela

https://newsela.com/read/natgeo-conservation-matter-changes/id/50295?search_id=19597d9c-d389-4477-aa39-f0c5688d9d7f
Opportunity for class collaboration
Sticky notes are your BFF!

- Rumors
- Around the Room
During Reading Support
Three-Level Guide

Designed to enable learners to access, analyze and interpret information from complex texts.

- Level 1
- Level 2
- Level 3
Three-Level Guide

Crosscutting Concepts
1 Patterns
2 Cause and effect
3 Scale, proportion, and quantity
4 Systems and system models
5 Energy and matter
6 Structure and function
7 Stability and change

Reading between the lines: Use the graph to respond to the following prompts:

At rest, what is the O₂ concentration in arterial blood?

At rest, what is the O₂ concentration in venous blood?

Describe the relationship between exercise and the concentration of O₂ in arterial blood.

Describe the relationship between exercise and the concentration of O₂ in venous blood.

Describe the difference between the O₂ concentration in arterial blood and the O₂ concentration in venous blood during exercise.
After Reading Support
Help students recognize organizational patterns in a text, steps in a process, and the importance of sequential order.
Opportunities for differentiation:
1. Have struggling readers categorize cards based on key vocabulary
2. Number of cards
Thanks!

Any questions?
You can contact me at brittany.voll@ksd.kyschools.us
Special thanks to all the people who made and released these awesome resources for free:

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