WRITING

DEMONSTRATION

W-I-L-D SCIENCE

INQUIRY

LEARNING

TEACHING STRATEGIES FOR GED SCIENCE

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What students think about science

Science is boring and alien

Science should
fun and familiar

Science is very irrelevant

Science should be
relevant and meaningful

Science is very difficult

Science should be easy

Science is very abstract

Science should be concrete

Inquiry based learning (minds-on): a different approach

Recall question. . . . . Example: what is density?	VS	Reasoning question. . . . Example: which of these will sink in water?
Conclusive response Example: that is correct!	VS	Challenging the students' reasoning Example: Why did you choose the . .
Information sharing activity	VS	Intellectual engagement activity

Discussion questions for inquiry learning: few ideas to begin with

- Provide hypothetical problem situations
  - Use false assumptions or myths as subject of discussion
    - Use of pictures or charts

Demonstration (hands-on): a different approach

Teacher demonstrates

VS

Students demonstrate

Foreign materials

VS

Local materials

Passive summary

VS

Opportunity to present and defend result

- Questions
- Comments
- Observations

INQUIRY-BASED DEMONSTRATION ON HUMAN DISEASE

Discuss common misconceptions regarding the transmission, prevention and treatment of infectious diseases

- All bacteria cause diseases
- Antibiotics can be used to prevent the transmission of diseases
- The flu vaccine will give you flu

	Activity	Discussion question	Lessons
1	Fill distilled water in identical cups to make them half full. Also fill an unknown solution in one of the cup.	Which of the cups is infected and how can you tell?	• Types of pathogens • Symptoms of diseases
2	Put two cups on the table close to each other.	If the water in one of the cups is infected or contaminated, can the water in the other cup be contaminated by merely placing it next to the first cup?	• Contagious and non-contagious diseases • Spread of diseases

	Activity	Discussion question	Lessons
3	Pour half of your solution into a classmate's cup. Then pour the same amount from your classmate's cup back into your cup. Now your cup contains a mixture of the two solutions. Repeat the process with two other classmates. Keep record of who you exchanged solutions with and in which order.	Since it is not easy to determine who has the infected cup, what can you do to avoid being infected during the exchange of solution.	• Contagious and non-contagious diseases • Spread of diseases • Personal hygiene • Vaccine
4	After you have exchanged solutions with three classmates, add three drops of "pathogen"-detecting solution to your cup. If your solution turns pink, your cup has been infected. Only one person in your class began with the pathogen in his/her cup. How can you determine whose cup had it?	In real-life examples, how do we detect if we have an infection or not?	• Contagious and non-contagious diseases • Spread of diseases • Personal hygiene

- Questions
- Comments
- Observations

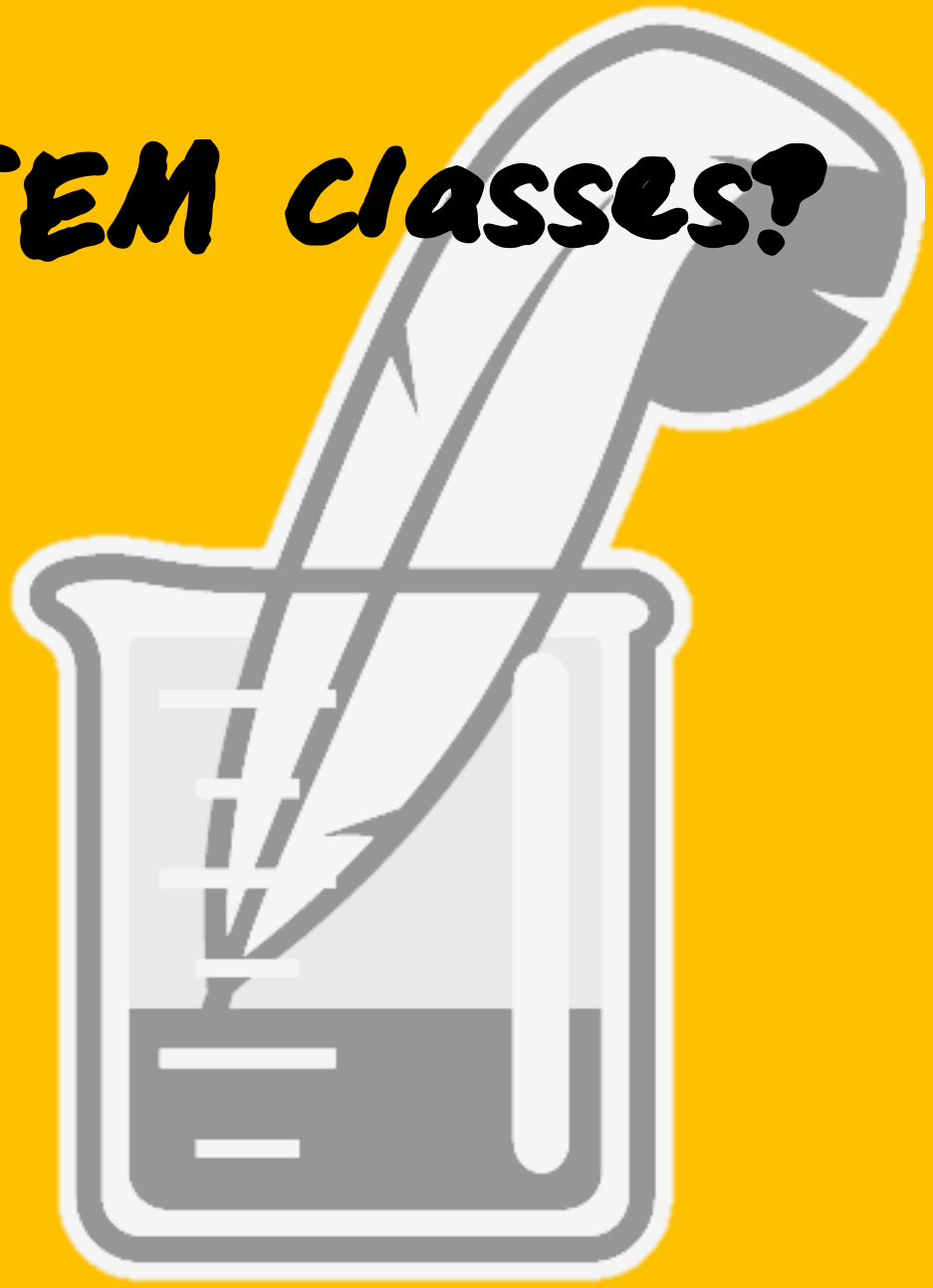
- TELL ME AND I FORGET
- SHOW ME AND I REMEMBER
- INVOLVE ME AND I UNDERSTAND

TELL ME AND I FORGET
SHOW ME AND I REMEMBER
INVOLVE ME AND I UNDERSTAND

Using Writing Effectively in STEM classes

Why use writing in STEM classes?

- To check for understanding
- Required for GED and NEDP STEM writing tasks

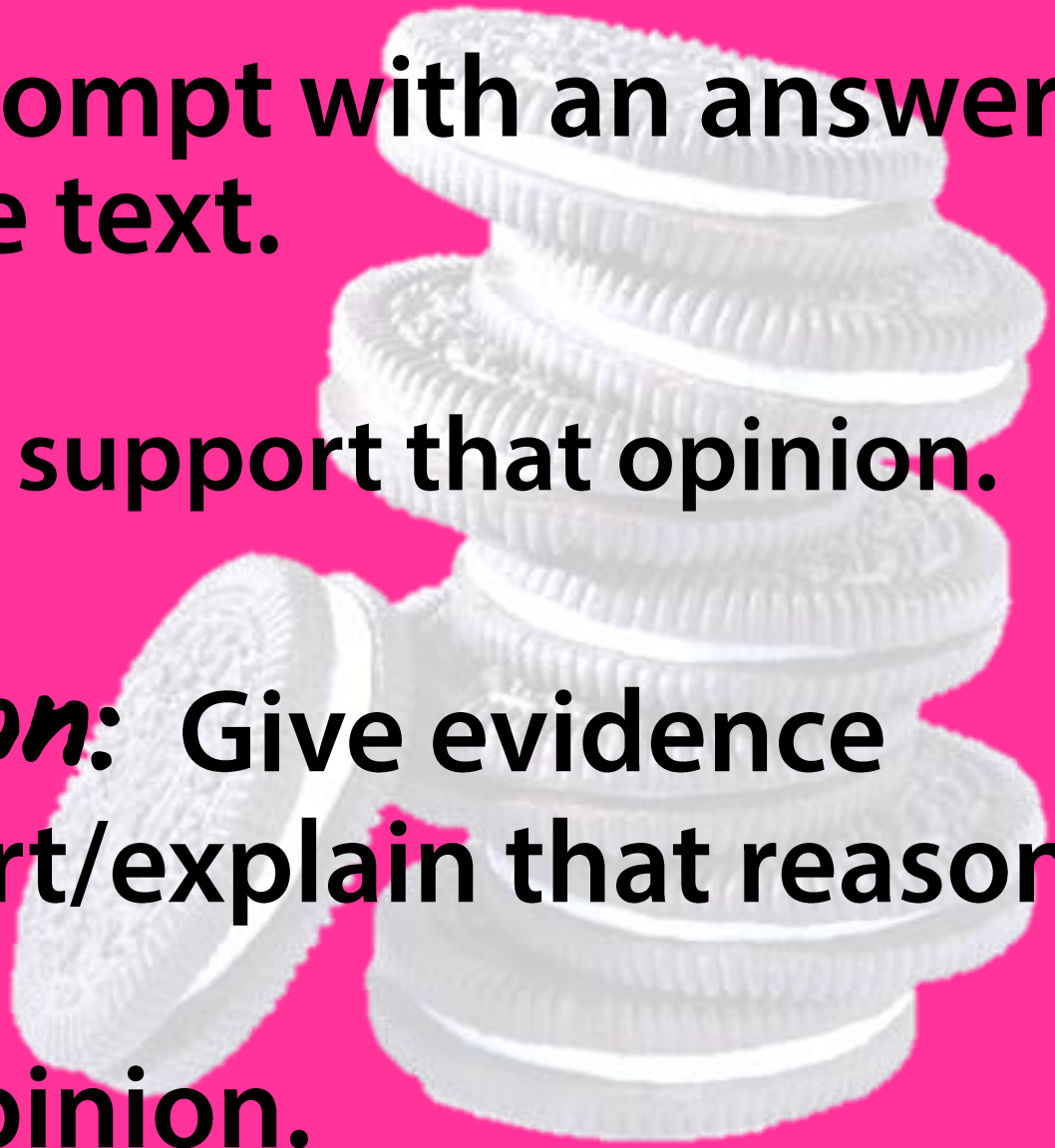


Opinion: Answer the prompt with an answer that is supported in the text.

Reason: Give a reason to support that opinion.

Evidence/Explanation: Give evidence from the text to support/explain that reason

Opinion: Restate the opinion.



This is about...

This is really about...

This is about…	This is really about…

S horter than the text

U se your own words

M ain ideas only

25-Word Abstract

Paraphrasing

- Must do this on GED science short response

Non-scorable Responses (Score of 0/Condition Codes)

Response exclusively contains text copied from source text(s) or prompt
Response demonstrates that the that test-taker has read neither the prompt nor the source text(s)
Response is incomprehensible
Response is not in English
Response has not been attempted (blank)

- Primary objective of NEDP Science writing
- Easy way to check for reading comprehension

Put things in your own words

Avoid copying the text

Rearrange similar text

Ask yourself if you included all the important points

Replace the underlined words with synonyms.

Researchers know a virus like Zika could mutate to become stronger, allowing it to transmit more easily from one host to another in order to survive.

Scientists recognize a virus like Zika is able to mutate to become tougher, letting it spread without trouble from one organism to another so it can continue to exist.

Paraphrase the following sentence, starting with the stem provided.

Researchers know a virus like Zika could mutate to become stronger, essentially allowing it to transmit more easily from one host to another in order to survive.

Zika could survive better, according to researchers, if… it could move between hosts more easily after mutating to become stronger.

Paraphrase the following sentence, starting with the stem provided. Do not use any of the underlined words in your version.

Researchers know a virus like Zika could mutate to become stronger, allowing it to transmit more easily from one host to another in order to survive.

If it mutates, Zika could _____

_____

_____

OREO organizers and frames guide students to successful responses.

Email us

- Meghan@aohdc.org --- Reading and Writing Strategy Packet
- Richmond@aohdc.org --- Science Inquiry and Demonstration Ideas
- Daquanna@aohdc.org --- Programing and Professional Development