Today’s Guiding Question

How will I integrate literacy in my science lessons?
Participants Will:

1. Work in a collaborative group to understand the importance of a constructivist approach;

2. Understand how constructivist strategies provide a cross-curricular bridge that not only increases understanding but also increases a student's ability to think critically;

3. Work on an interactive activity to know what it takes to integrate literacy into the science content.

Get to know your groups
Get to know your groups

- Tell your name.
- What do you like to read or watch?
  - The person with the longest hair goes first.
  - The person with the shortest hair will be the timer.
  - We will have 3 min to introduce.

What do you currently do in your classroom to promote literacy?
What is Science Literacy?

Inquiry
Exploration
Vocabulary Development
Writing

Is it important?

What value comes from activities such as these?
Engagement, Critical Thinking, Inquiry
Ferdie and Niddle
A look at how Science builds Reading


1. Where did Ferdie and Niddle gabble?
2. What did Ferdie twaddle?
3. What did Niddle do after he peedled? *Critical Thinking
4. Where else might Ferdie and Niddle gabble?
Ferdie and Niddle
A look at how Science builds Reading


How successful were you?

Making Meaning
Movies in their mind

- Give students the opportunity to observe and experience to help them build mental images

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2. What did Ferdie twaddle?
3. What did Niddle do after he peedled?
*Critical Thinking
4. Where else might Ferdie and Niddle gabble?
When students read....
we want them to.......

• See the movie/picture
• Ask Questions
• Think Critically

Science will help reading and writing.

Science, Reading, and Writing
Science as an Engine to take Reading and Writing to the next level.
Literacy

Students should have literacy skills that draw from……

- prior experiences
- text
- communication
- labs
- demonstrations
- media
- video

evaluate those sources and assemble it into an understanding and application of a topic that they can USE

---------- to solve problems in the world.

The Question is…When to Read?
What do you want your students to do with scientific text?
Explore
Experience the Phenomenon

Reflections
Surface Tension

K-2: Write a story of a water strider walking across the water.

3-5: The narrator of the video described a water strider as “a high-speed artist of the invisible world.” What do you think this means?

Middle: Write from the perspective of the water strider what it is like to walk on water. Are you afraid of sinking?

High School: When raindrops are drawn, they are usually represented by a pear shape (small and pointed at the top and larger at the bottom). Research raindrops to discover whether this representation is correct. If not, what is an accurate depiction of the shape of liquid rain?

Reading vs. Science Exploration Skills

With your break out group find a consensus on where each word on the list should be placed in the Venn Diagram.

Place these words in the appropriate area:
✔ Observing
✔ Classifying
✔ Predicting
✔ Inferring
✔ Communicating
✔ Problem-Solving
Reading vs. Science Exploration Skills

Place these words in the appropriate area:
- ✔ Observing
- ✔ Classifying
- ✔ Predicting
- ✔ Inferring
- ✔ Communicating
- ✔ Problem-Solving

Which approach results in greater scientific understanding?

1. Doing an investigation then reading and writing about it.
2. Reading science text and then doing an investigation.
3. Integrating doing, reading and writing about science.

*“Linking Science & Literacy in the K-8 Classroom”, Rowena Douglas, 2006, NSTA"
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When Students Read, Write and Discuss they...

1. Link new science knowledge with experiences.
2. Anchor the learning to the scientific principles.
3. Connect with many different representations.
4. Use science ideas to explain the phenomenon.
5. Engage in the real practice of scientific argumentation.

THANK YOU!

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