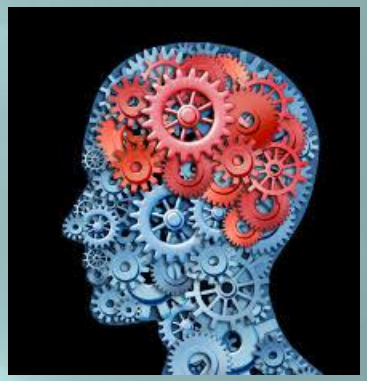


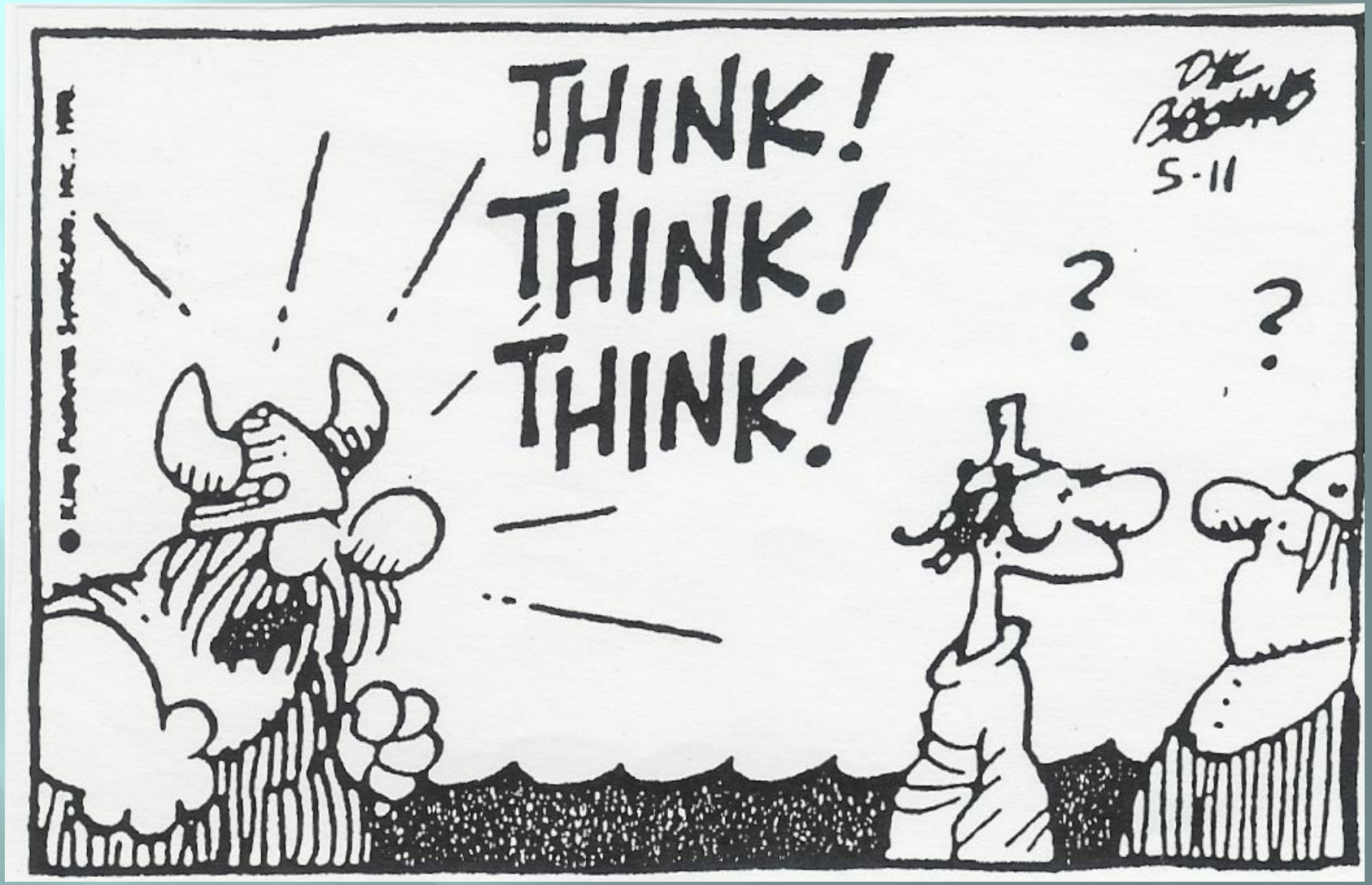
GUIDING STUDENTS TOWARD DEEP AND COMPLEX THINKING

PACE Meeting

Monday, March 10, 2014

Adapted from Dr. Sandra Kaplan

LISTEN GOOD! I'M GOING TO SAY THIS ONCE, AND ONE TIME ONLY, AND I'M NOT GOING TO REPEAT IT!!


THINK!
THINK!
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5-11
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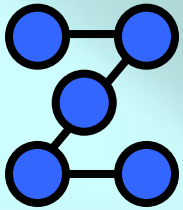


What is Depth?

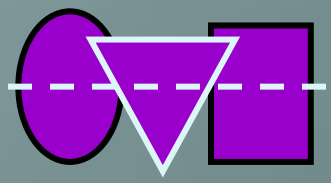
The eight elements of depth help students

- approach or study something from the concrete to the abstract, from the known to the unknown.
- examine topics by determining the facts, concepts, generalizations, principles and theories related to them.
- uncover more details and new knowledge related to a topic of study.
- adopt perspectives and to see patterns and connections.

The eight elements of depth help teachers facilitate learning within a discipline at differing levels of sophistication.

What is Complexity?

The three elements of complexity help students…



- make relationships.
- connect and layer concepts.
- provide a why/how approach that connects and bridges to other disciplines to enhance the meaning of a unit.
- relate concepts and ideas at more sophisticated levels.
- see associations among diverse subjects, topics or levels
- find multiple solutions from multiple points of view.

The three elements of complexity help teachers facilitate learning by focusing on the relationships between and across various disciplines.

Why Depth and Complexity?

Each of these eleven tools are considered essential elements one needs to master a subject.

For example, chemists need to understand the language of a chemist, the different points of view in chemistry, the rules that govern chemistry, the ethical decisions chemists face, etc.

Likewise, a master of chess would be an expert in the language of chess, the patterns of chess games, the rules to follow, and the way the game has changed over time.

When students think using these tools, they learn to approach subjects from the point of view of an expert. In doing so, they will understand concepts in deeper and more complex ways.

Why Depth and Complexity?

Three Key Elements of Common Core

1. **Thinking Deeply: Emphasis on critical thinking requiring students to analyze, evaluate, justify and explain their thinking and show their understanding.**

1. **Integrating Learning: Emphasis on learning across the disciplines (reading with math and social studies/science combined into one task). Students spend more time working with different settings, structures and tools. Students are confronted with real-world problems and solutions.**

2. **Showing How They Know: Emphasis on proof and evidence. Students need to explain how they know the answers, and justify why they chose their response.**

Language of the Discipline

- Specialized vocabulary
- Names of skills or tasks
- Tools used by a specific discipline

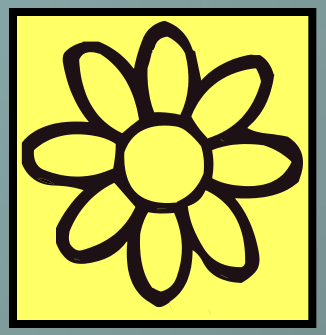
Questions

- What terms or words are specific to the work of the disciplinarian (biologist, physician, mathematician, archeologist, author, etc…)?
- What tools does the disciplinarian use?

In Literature

- What characteristics are specific to this genre?
- What descriptive and figurative language (similes, metaphors, alliteration, figures of speech, vocabulary, words specific to the story), special phrases or expressions does the author use?
- What is the significance of unique or special vocabulary?

Details



- Attributes
- Features, characteristics
- Factors, variables
- Who? What? When? Where? Why? How?

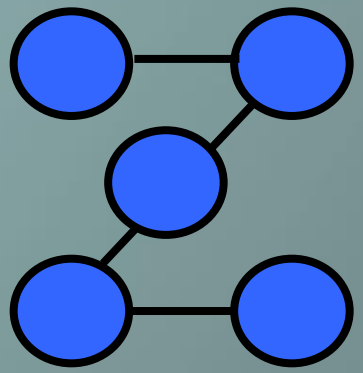
Questions

- What features characterize this?
- What specific elements define this?
- What distinguishes this from other things?

In Literature

- What is the setting, main character, plot, distinguishing traits, people, places, events, what details are most important? Evidence to support opinions/ideas?

Patterns



- Reoccurring elements
- Sequence or order of events
- Predictabilities

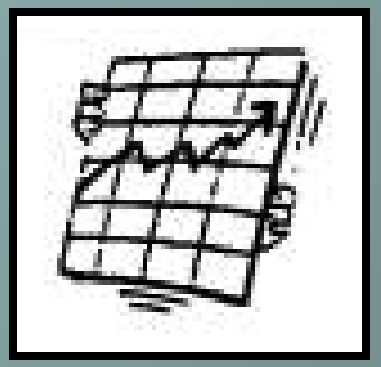
Questions

- What elements, events, ideas are repeated over time?
- What is the sequence or the order of events?
- How can we predict what will come next?

In Literature

- What is repeated?
- What is the order of events?
- What predictions can be made based on past events, elements/ideas/events repeated over time?
- What will happen next?

Trends



- Forces, Influences
- Direction, Course of Action
- Cause & Effect

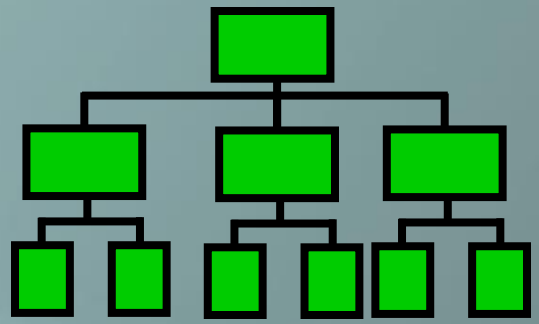
Questions

- What ongoing factors have influenced this study or topic?
- What factors have contributed to this study?
- What factors cause events to occur (social, economic, political, geographic, etc…)?

In Literature

- Identify patterns of behavior that occur throughout the story.
- Who/what influenced _____? What caused _____ to happen? Explain cause/effect relationships. If…. Then….

Rules



- Order, organization
- Structure, classification
- Explanation, reasons
- Hierarchy

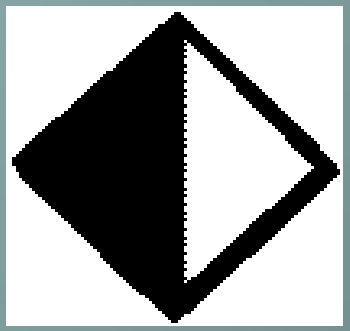
Questions

- How is this structured?
- What are the stated ad unstated causes related to the description or explanation of what we are studying?

In Literature…

- What is the structure of this genre/text?
- What guidelines/regulations affect_____?
- How would you explain_____? Give reasons to support your answer.

Ethics



- Points of view
- Different opinions
- Judging

Questions

- What dilemmas or controversies are involved in this topic/study/discipline?
- What elements can be identified that reflect bias, prejudice, and discrimination?

In Literature

- What moral principles are involved in_____?
- What controversies exist?
- What arguments could emerge from a study of this topic?
- How does your point of view differ from the narrator/author/character/others?
- What are the pros and cons of _____?

Unanswered Questions

- Discrepancies
- Missing parts,
- Unclear, incomplete ideas

Questions

- What is still not understood about this topic/study/discipline?
- What is yet unknown about this?
- In what ways is the information incomplete or lacking in explanation?

In Literature

- What information is unclear or missing?
- What might happen next in the plot?
- I wonder…
- Is anything ambiguous?

Big Ideas

- Generalizations
- Principles
- Theories

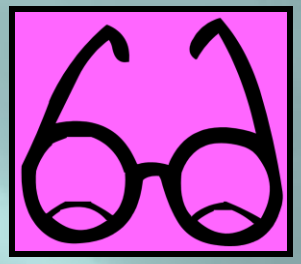
Questions

- What overarching statement best describes what is being studied?
- What general statement includes what is being studied?

In Literature

- Identify the main idea
- Prove with evidence
- Generalize
- What are the major themes?

Multiple Perspectives



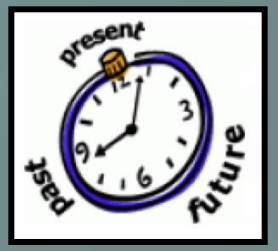
Multiple Perspectives, opposing viewpoints, differing roles and knowledge

- **What are the opposing viewpoints?**
- **How do different people and characters see this event or situation? Who agrees and disagrees?**
- **Relate, compare, contrast**

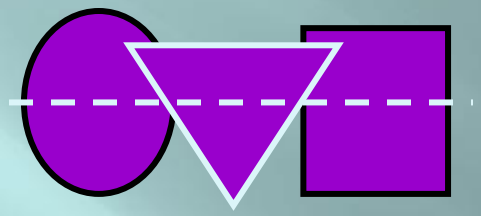
Changes Over Time

Relationship between the past, present and future, and within a time period

- **How are the ideas related between the past, present, and future?**
- **How are these ideas related within or during a particular time period?**
- **How has time affected the information?**
- **How and why do things change or remain the same?**



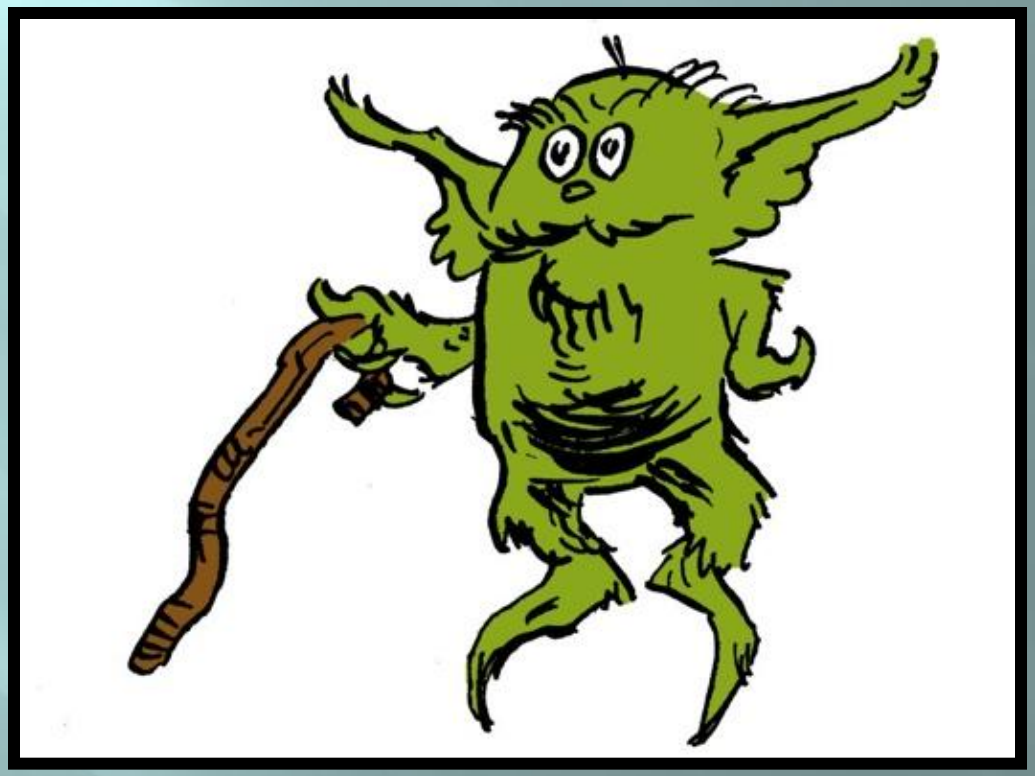
Interdisciplinary Relationships



Within the disciplines, between the disciplines, across the disciplines

- **What are common elements among topics from the different disciplines?**
- **How does this topic/concept relate to other disciplines?**
- **How do topics/ideas from across the disciplines contribute meaning to this idea?**

What if another creator created a creation?



Star Wars character remade in the style of Dr. Seuss

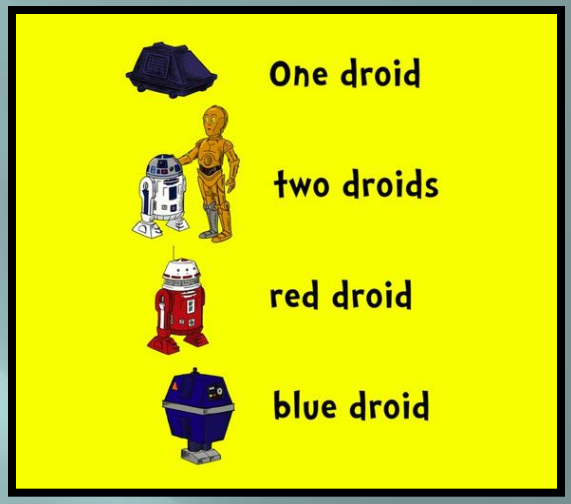
Multiple Perspectives, Point of View and Writing

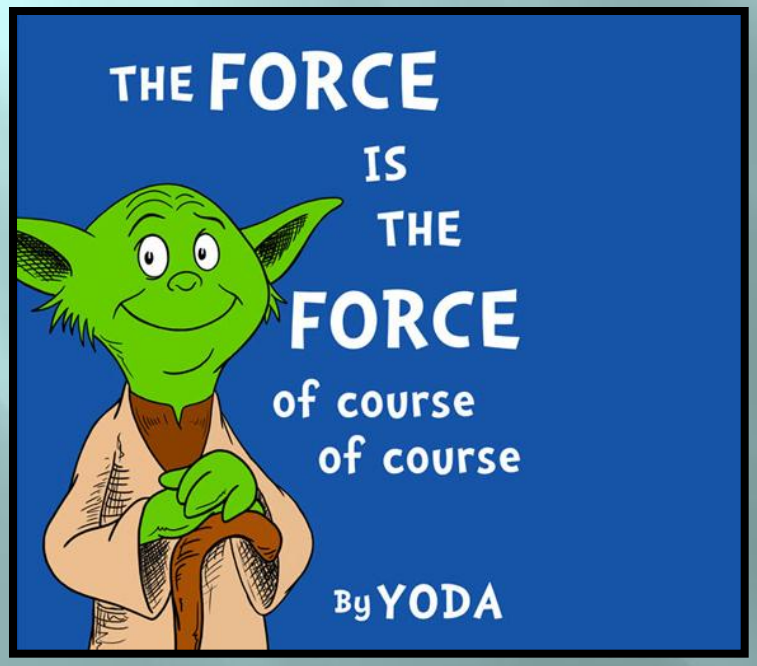
Recreate a story as if it were created by another author and illustrator.

- Requires an understanding of the original author's intent, as well as the new author's style.
- Helps students examine stories from the point of view of a creator. It will help students think about what makes authors unique, and how they can utilize those traits in their own writing.

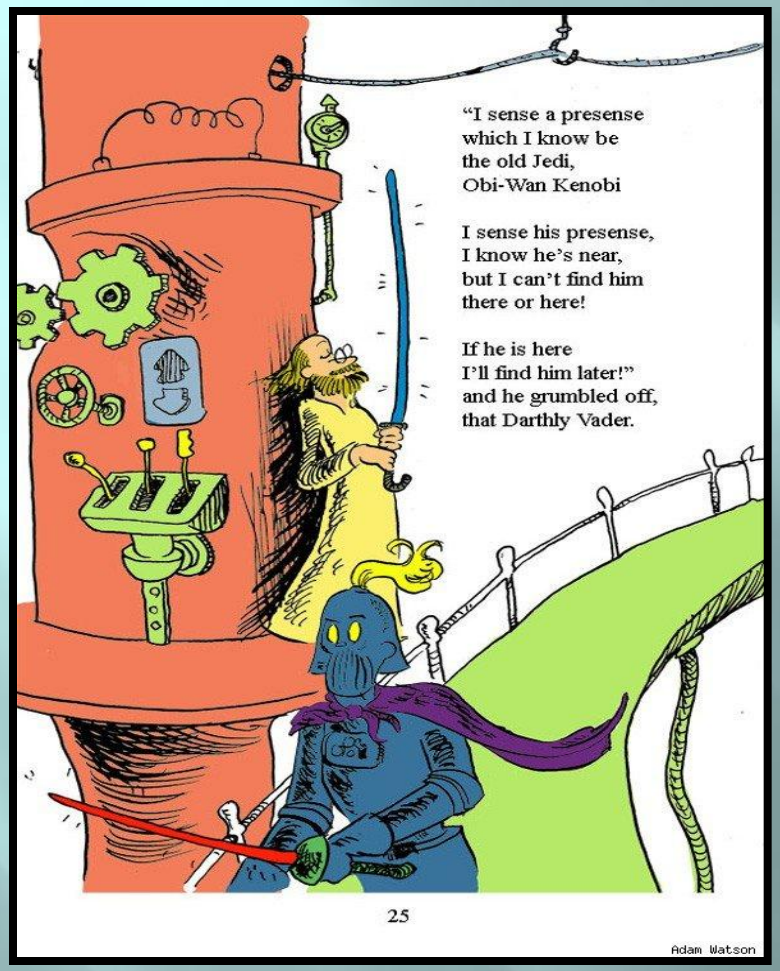
What Makes Dr. Seuss Unique?

Nonsense words
Simple Rhymes
Repetition
Simple Words
Sketchy Drawings





Illustrations:
Use of black lines to create shading
Swooping upper lips that define characters' mouths
Hairy details on character's arms and legs
Use of bright, primary colors with greens and pastel purples


"I sense a presense
which I know be
the old Jedi,
Obi-Wan Kenobi
I sense his presense,
I know he's near,
but I can't find him
there or here!
If he is here
I'll find him later!"
and he grumbled off,
that Darthly Vader.
25
Adam Watson

"This body is old.
but it's all that I've got.
When 900 you reach,
look so good you will not!"