Depth and Complexity: Creating Respectful Work for Critical Thinking Learners
Think like a _______ or one who ............

Apply or use the language of the disciplinarian to describe your study
Ex. dates/periods cause/effect facts/opinions places/people events/issues

Skills and Habits of Mind used by someone who is successful in this discipline:

Use these products of the disciplinarian
Books, artifacts, Professional journals, references Timeline, charts, tables, maps, internet articles Primary sources, letters, diaries, visuals, etc.

Thus we have a framework for depth and complexity
## Frames of the Discipline

<table>
<thead>
<tr>
<th>Accountant</th>
<th>Anthropologist</th>
<th>Architect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronomer</td>
<td>Biologist</td>
<td>Chemist</td>
</tr>
<tr>
<td>Computer Programmer</td>
<td>Ecologist</td>
<td>Economist</td>
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<tr>
<td>Editor</td>
<td>Electrician</td>
<td>Engineer</td>
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<tr>
<td>Environmentalist</td>
<td>Epidemiologist</td>
<td>FBI Agent</td>
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<td>Geneticist</td>
<td>Geographer</td>
<td>Geologist</td>
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<tr>
<td>Historian</td>
<td>Immunologist</td>
<td>Interior Designer</td>
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<td>Journalist</td>
<td>Lawyer</td>
<td>Marine Biologist</td>
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<td>Mathematician</td>
<td>Mayor</td>
<td>Meteorologist</td>
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<td>Microbiologist</td>
<td>Oceanographer</td>
<td>Pathologist</td>
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<td>Philosopher</td>
<td>Physicist</td>
<td>Political Scientist</td>
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<td>Poet</td>
<td>Psychologist</td>
<td>Public Speaker</td>
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<td>Publisher</td>
<td>Sociologist</td>
<td>Statistician</td>
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<tr>
<td>Toxicologist</td>
<td>Virologist</td>
<td>Zoologist</td>
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</tbody>
</table>
Think like a deep thinker, or one who...........

This would be the terminology we would use to talk about thinking:

Skills and Habits of Mind used by a deep thinker include:

A deep thinker produces these “end products”:

Thus we have a framework for depth and complexity
Goals for Today’s Session

- Describe what “deep thinking” looks like
- Analyze how to add depth and complexity focus to your students’ learning activities
- Understand how to use Depth and Complexity icons to differentiate for different levels of instruction
Yup, that’s my job... I can’t think of anything more humiliating... I’m so ashamed. By the way, what do you do?

Plungie Wongie: The Least Celebrated Teletubby
Find Someone Who activity—

- Find several different “someones” in the room who are able to do the activities on the sheet.
- Make them demonstrate their knowledge or skill.
- No one may sign more than two of your boxes.
- When the song is finished, please return to your seats.

http://www.youtube.com/watch?v=34z5DGZMf_s
What else can you add to your Frame of the Discipline of a Deep Thinker?
Dimensions of Depth and Complexity

- **Language of the Discipline**
  - Details
  - Patterns
  - Trends
  - Rules
  - Ethics
  - Big Ideas

**Complexity**

- **Past-Present-Future**
- **Multiple Perspectives**
- **Across Disciplines**

- **Over Time**
- **Points of View**
- **Across Disciplines**

- Can be used in all disciplines
- Built with levels that take students deeper into the discipline
- Icons are used to prompt each level of depth and complexity
- Over time students will go deeper and gain a greater understanding of the content they are studying
Match ‘em Up

- **Materials needed:**
  - People Search
  - Pen
  - Packet of Depth and Complexity Icon Cards

- **Think-Pair-Share**
  - Use the packet of Depth and Complexity cards and their descriptions and decide which icons go with which activities in the boxes. Draw the icon(s) in the boxes.
  - Pair up with someone and share your findings.
  - What is an “unanswered question” that you have?
How to Use These

- As single icons
- Overlap 2 Depth icons
  - Big Ideas and Details
  - Language of the Discipline and Patterns
  - Ethics and Unanswered Questions
- Overlap a Depth and a Complexity icon
  - Language of the Discipline and Relate Over Time
  - Ethics and Multiple Perspectives
  - Patterns and Across Disciplines
- Overlap 2 Depth and a Complexity icon
  - Details, Patterns, and Multiple Perspectives
  - Details, Rules, and Relate over Time
  - Trends, Big Ideas, and Across Disciplines
Let’s Try This Out

- **Materials needed:**
  - Your Depth and Complexity icon cards
  - “The Big Wait” article from Educational Leadership
  - A pen

- **Listen as I read the introduction to you.**
  - What are the “Big Ideas” that this article might be about?
Choose two...Read and Justify...

- The Teenage Twilight Zone
  - Trends
- Making Adolescence More Adult
  - Patterns
- Relevance
  - Rules
- Real-World Feedback
  - Multiple Perspectives
- Responsibility
  - Trends
- Respect
  - Language of the Discipline
- Water for the Thirsty
  - Details

With a partner, choose four of the sections listed on the left—two for you and two for your partner.

Read your sections focusing on the D/C icon. Make any notes as needed.

Share the technique and your findings with your partner when the music finishes.

http://www.youtube.com/watch?v=l-dYNttdgl0&feature=related
EXIT TICKET: DEPTH AND COMPLEXITY
Name_________________________________ Date_________________________________

1. What is something from today’s workshop that you think you will definitely think about after spring break?

2. Which icons do you see as being particularly relevant to your content?

3. Which icons do you think your students would struggle with? Why?

4. What additional information or support do you think you might need to implement this model into your units?
Depth and Complexity Slides

ADDITIONAL EXPLANATIONS AND EXAMPLES OF USING THE ICON IN A CONTENT AREA
Language of the Discipline—use of vocabulary (terms/ symbols) that experts in the discipline use to describe/discuss events, issues, change, pattern, questioning, etc.

Example:

Historians might use terms like “underlying causes” to describe long-term causes of a specific event like war or “immediate causes” or “turning point” to explain a central event leading to shift in a trend of occurrences.
Details

Details are facts which expanded upon by giving evidence and specific examples that support the facts.

- Example
  - American cities grew during the late 19th century.
    - cities developed along major transportation routes
    - local and federal govt. gave railroads subsidies of land & money
    - railroads advertised sale of land that drew immigrants from Europe
    - most immigrants settled in cities because of the availability of jobs
    - new cities included Chicago, St Louis, San Francisco, etc.
    - transcontinental railroads were built, no longer dependent only waterways
    - migration from rural to urban
    - industrial growth provided jobs in urban areas
Patterns- regular or repetitive forms, orders, or arrangements; a predictable pattern of behavior or design.

- Example: By reading primary and secondary documents we see that following events took place in most cases in different regions of the country during that time period. What are the **re-occurring events** in the growth of cities?
  - land grants from government given to railroads
  - railroads companies lay track
  - companies advertise to sell off adjacent lands
  - individuals and businesses looking for new opportunity purchase and settle lands creating jobs leading to further settlement
Rules--The elements of this topic, concept, or discipline that are consistent and universally accepted by disciplinarians in the field.

- Example: Based on information written by recognized historians in journals and essays, a consensus is--

  - Cities of the 19th century grew
  - Rural to urban migration and migration of former slaves
  - Industrialization
  - Immigration
Trends—a general tendency, movement, or direction; on-going and significant factors that influence a topic, concept or discipline.

- Example: What **contributing factors** lead to the growth of cities in the 19th century?

By observing and interpreting data from maps, charts, graphs and tables we determine where most cities were located.

- along transportation routes
- near deposits of natural resources
- near major industries
- migration from rural areas increased to cities
- immigration from Europe increases and immigrants generally settled in cities
Unanswered Questions

- Unanswered questions: What questions are the disciplinarians in this field grappling with today?
- Example: In what ways might the information on the growth of cities be lacking?
- Issues not addressed in the growth of cities during the 19th century thus far
- How were these cities governed?
- What were living conditions in cities like?
Ethics—the study of moral standards and how they affect conduct; a system of moral principles governing the appropriate conduct for a person or group

- Examples:
  - Did cities of the 19th century offer a better quality of life than rural areas?
  - In your view, did the governor anything in his treatment of the Native Americans in his state that was morally wrong?
Big ideas--a generalization that flows directly from the study that is always true (yesterday, today and in the future).

- **Example:**
  - People move to new locations to meet economic and/or social needs.
Complexity

Over Time

Points of View

Interdisciplinary

Relate over time

Multiple perspectives

Across disciplines
Over Time

- How are the ideas related from the past, present, to the future?
- How are the ideas related within or during a particular time period?
- How has time affected the topic, concept, discipline?
- How and why do things change or remain the same?
What are the multiple perspectives on the topic, concept, discipline?

How do different perspectives shape the topic, concept, discipline?
Interdisciplinary

- What are the common elements among the topics from different disciplines?
- How does this idea relate to all of these topics across disciplines?
- How do each of these topics across the disciplines contribute meaning to this idea?