GT Update: Depth & Complexity Framework Part 1 (Grades 6-12)

CURRICULUM DIFFERENTIATION THROUGH DEPTH AND COMPLEXITY

Presented by

Ryan Harvey
“The biggest mistake of past centuries in teaching has been to treat all children as if they were variants of the same individual, and thus feel justified in teaching them the same subjects in the same ways.”

- Howard Gardner
Intended Learning Outcomes!

- Prepare lessons and units that meet or exceed the state standards using the depth and complexity framework and tools
- Employ the prompts/dimensions/icons of depth and complexity to differentiate student thinking about any core content
- Learn about and practice integrating other components of the Depth & Complexity Framework – including Content Imperatives, Universal Concepts & Generalizations, and Disciplinarian Thinking
- Use 21st century learner skills in lessons and units that encourage students to think and problem solve like disciplinarians and professionals.
# Framework Overview

## Depth & Complexity

1. Creating an Environment
2. Differentiation: What it is & What it isn’t
3. Thinking Tools: ICONS
   1. Depth and Complexity
   2. Content Imperatives
4. Implementing ICONS
   1. Introducing ICONS
   2. Frames
   3. Lessons/Task Statements

## Other Components

1. Differentiated Task Statements
2. Becoming an Expert
3. Individualized Learning
4. Universal Concepts
5. Generalizations
6. Other
Depth & Complexity Framework

21st Century Learner

Bloom’s Taxonomy

TEKS

Universal Design
Differentiation: Not just a “gifted” word

- Amount
- Peer Interaction
- Teacher Interaction
- Curriculum
Asynchronous Development

Is a discrepancy between cognitive, emotional, social and physical development.

Typical 12 year old:

Atypical 12 year old = Asynchronous Gifted Child
Example: Researching Greek Mythology and fighting over the front seat.
Imagine the rings of a tree's trunk. The outer-most ring tells us the chronological age of the tree. Using similar imagery, this circle, with its pie shaped sections, is a simplified depiction of typical child development. Typical children develop at a typical rate, achieving developmental milestones and grade level learning within a typical age range.
Asynchronous = uneven development. Gifted children in their development are out of step with their same-age peers. Also, each gifted child is different in their asynchronous development. For example, imagine a lever on the end of each pie shape which would pull or push the area of development according to the individual child. ASYNCHRONOUS development is the HALLMARK of giftedness.
Asynchronous Development

<table>
<thead>
<tr>
<th>Below 3\textsuperscript{rd} Grade</th>
<th>3\textsuperscript{rd} Grade</th>
<th>Above 3\textsuperscript{rd} Grade</th>
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<tr>
<td>Emotional</td>
<td>Physical Age Intellectual</td>
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<tr>
<td>Social</td>
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<td>Intellectual</td>
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</table>
Qualitative Differentiation

To proactively plan and carry out various approaches to content, process, product, and environment in anticipation and response to differences in students’ readiness, interests, and learning needs.
Pathways
Academic Rules

- We respect individuality.
- Everyone gets an equal opportunity.
- Everyone is expected to be challenged.
- Everyone is expected to improve.
- Everyone is expected to do his/her best.
Academic Rules

Respect

- Everyone is expected to improve.
- Everyone is expected to be challenged.
- Everyone is expected to do his/her best.
- Everyone gets an equal opportunity to learn.
Systems have parts that work together to perform a function.
The main topic is “Teaching with Icons.”
Have a discussion in groups of four.
This activity will take about 5 minutes.
Depth and Complexity and the Content Imperatives

- Dr. Sandra Kaplan, University of Southern California, Bette Gould, Sheila Madsen
- CA Golden State Exam, AP and IB Programs
- Inherent in all disciplines of study
- Increases sophistication of content
- Fosters the skills necessary to think critically, analytically and creatively
- Positively impacts gifted and non-gifted student understanding across the disciplines
Why Use Depth & Complexity

Depth & Complexity’s foundation, the “Differentiation Equation” already accounts for Bloom’s varied thinking skills as well as DOK’s four levels.

T/S + C (D/C) + R + P

Depth & Complexity creates a renewed excitement in the classroom.

It’s the “how to” for eliciting complex thinking and applying knowledge to real-world experiences.

As DOK is a tool to ensure teachers are teaching to certain levels of cognitive demand, Depth & Complexity is a conceptual “toolbox” that prompts students to think in abstract, high-level ways similar to disciplinarians.

The Depth & Complexity “toolbox” extends through and across all four levels of Depth-of-Knowledge (DOK).

Depth & Complexity bridges the gap between describing levels of cognitive rigor (DOK) and designing appropriately differentiated instruction that demands and ensures challenging, rigorous learning experiences.
Depth

- Refers to approaching or studying something from the concrete to the abstract, from the known to the unknown.
- Requires students to examine topics by determining the facts, concepts, generalization, principles and theories related to them.
Complexity encourages students to

- Relate **concepts and ideas** at a more sophisticated level
- See **associations among diverse subjects**, topics or levels
- Find multiple solutions from **multiple perspectives**
Start with your curriculum! (Step 1)

THE FRAMEWORK ALLOWS FOR A DIFFERENTIATED EXPERIENCE FOR ALL LEARNERS, FROM ALL AGES AND ALL SUBJECTS.
<table>
<thead>
<tr>
<th>ICONS (Step 2)</th>
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<tbody>
<tr>
<td>![Icon 1]</td>
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<td>![Icon 15]</td>
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</tbody>
</table>
ICONS: How to Begin

Remember, the icons are tools to challenge learners to venture deeper and to broaden their understanding of the areas of study.

- Post all of the icons in your room to show that you value the icons as intellectual tools.

- Look for appropriate icons within your lessons.

- Integrate 1 or 2 icons into your lessons.

- Add icons to worksheets.
ICONS: How to Begin

- Use icons as graphic organizers.
- Use the Big Idea icon to summarize or end lessons.
- When you “brainstorm” during a lesson, use the icons to label the information on the chart.
- Allow the students to choose their own icons to develop their own questions for study.
ICONS: How to Begin

- Use the icons in center activities and to differentiate the tasks at the centers.

- Frame anything: teacher, student, story, concept, chapter, lesson, poem, art, etc. (this will be covered later on today)

- Use icon cards/blocks for discussion purpose.
## Icons and TEKS

<table>
<thead>
<tr>
<th>Grade</th>
<th>Subject</th>
<th>TEKS</th>
<th>Icons</th>
</tr>
</thead>
</table>
| 6     | Math       | 6.7.A: Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:  
(A) generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization.                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ![Icons](https://example.com/icons.png)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8     | Science    | (2). Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:  
(A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;  
(B) design and implement comparative and experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;  
(C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;  
(D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and  
(E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.                                                                                                                                                                                                                                                                                                                                                           | ![Icons](https://example.com/icons.png)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 10    | Social Studies | US 4C US 4C  
Identify the causes of World War I and reasons for U.S. entry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ![Icons](https://example.com/icons.png)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
### Icons and TEKS (cont’d)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Subject</th>
<th>TEKS</th>
<th>Icons</th>
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</thead>
</table>
| 6     | Social Studies | (21) Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including electronic technology. The student is expected to: 
(B) analyze information by sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;  
(D) identify different points of view about an issue or current topic;  
(E) identify the elements of frame of reference that influenced participants in an event; and  
(F) use appropriate mathematical skills to interpret social studies information such as maps and graphs. |       |
| 9-12  | ELAR      | Figure 19: Reading/Comprehension Skills. Students use a flexible range of metacognitive reading skills in both assigned and independent reading to understand an author’s message. Students will continue to apply earlier standards with greater depth in increasingly more complex texts as they become self-directed, critical readers. The student is expected to:  
(B) make complex inferences e.g., inductive and deductive) about text and use textual evidence to support understanding |       |
### Math TEKS Process Standards

<table>
<thead>
<tr>
<th>(A) apply mathematics to problems arising in everyday life, society, and the workplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution</td>
</tr>
<tr>
<td>(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems</td>
</tr>
<tr>
<td>(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate</td>
</tr>
<tr>
<td>(E) create and use representations to organize, record, and communicate mathematical ideas</td>
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<tr>
<td>(F) analyze mathematical relationships to connect and communicate mathematical ideas</td>
</tr>
<tr>
<td>(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication</td>
</tr>
</tbody>
</table>
Task

- Break into four groups
  - Math
  - Science
  - Social Studies
  - ELA

- Choose TEKS – find two or three icons that would help you in teaching these TEKS
Robby loves playing fetch with his dog Spencer. Spencer always waits by sitting behind the dog before Robby throws the ball. When Robby throws the ball, Spencer runs to it and brings the ball back to the same spot. Robby throws the ball three times:

- The first time he throws it 8 meters.
- The second time he throws it twice as far as the first time.
- The third time he throws it 6 meters less than the second time.

How far does Spencer run in total?
“One hundred years later” repeats to emphasize that the Emancipation Proclamation has not resulted in freedom.

“America...bad check” illustrates that the promise of equality was a lie for African Americans.

“One hundred years” anaphora.

MLK Speech

Supporters
Those in the crowd
All undecided
The oppressed
Precipitation, transpiration

Apply the language of the discipline to each aspect of your frame by adding vocabulary to the inner frame.

Satellite images show differences in various areas of earth.
Thinking first in Math

Explain how examining the ______ helps us to understand the ________.
Frame Example (preview)
Frame Example (preview)
**Q³ CARDS**

**Q’lick, Q’uality, Q’uestion Cards**
for Differentiating Content with Dimensions of Depth & Complexity

**BIG IDEA**

What are some of the theories that have been proposed to explain ________?

**MULTIPLE PERSPECTIVES**

Research ________ debate both sides of the issue.

**ACROSS THE DISCIPLINES**

Find examples of ________ in science, social studies, math, and language arts.

**LANGUAGE OF THE TASK**

How might a ________ describe/explain ________?

What distinguishes ________ from ________?

---

**THE ICON GAME**

**Responding to Literature with Depth and Complexity**

- **Details**: What details does the author include to indicate where and when the story took place?
- **Big Idea**: What conclusions can you draw based on the characters in this story?
Q-3 Cards

- Use your grade level content (What are you teaching at the beginning of the school year?)
- Each person needs a Q3 from the set given
- Take some time to develop a question related to your standard/content from your content
- Beginning with the person at the table who traveled the shortest distance today, ask the table group your question.
Q3 Cards

- What did the card bring to your subject area planning?
But remember,

We are not teaching the icons; we are teaching concepts to new levels of depth and complexity using pictures to stand for the thinking strategies. Depth and complexity is NOT a program.
Depth & Complexity - prompts (icons) that help students better understand the curriculum by eliciting levels of reasoning as a means to acquire and apply knowledge. This repetitive reasoning creates patterns in the brain where children make and understand deep and complex connections.

These prompts were defined as the common features to each discipline. (Burker, 2003)

Referred to as “Thinking Curriculum” because it increased the level of challenge for all students. (CDE, 2005)

Academic Discipline: Fields with departments, graduate programs, and professional associations (Burker, 2003).
• **Depth and Complexity** represented an approach to curriculum differentiation for gifted students, that originated from a California Department of Education document in 1994. (CDE, 2005)

Derived from 3 sources

• 1) A review of Advanced Placement curriculum and assessment
• 2) A study of California Golden State Exam requirements
• 3) Conventional wisdom about the accelerated needs of gifted students and the nature of academic disciplines

*(Experts’ perspectives on the Application and Relevancy of Depth and Complexity to Academic Disciplines of Study; Lauer, Joanna L. A Dissertation Presented to the Faculty of the USC Rossier School of Education, University of Southern California, August 2010.)*
At its foundation the TEKS demand students to think in deeper ways about content.
21st Century Skills focus on critical thinking & problem solving skills, collaboration, effective communication, imagination, technology skills, and ability to adapt.
Universal Design for Learning (UDL) was developed to counteract the “one size fits all” learning approach pervading US Schools over the past several years.
INTEGRATING THE PROMPTS INTO GRADE LEVEL LESSONS– ONE AT A TIME

11.3 Triangles

You can identify triangles by the length of their sides:

- Equilateral: all 3 sides are the same length
- Isosceles: at least 2 sides are the same length
- Scalene: all sides are different lengths

You can also classify triangles by the measure of their angles:

- Right triangle: one right angle

Acute triangle: all 3 angles are acute
 obtuse triangle: one obtuse angle

The sum of interior angles of any triangle is always 180°

To find a missing angle:
1. Find the sum of the known angles
2. Find the difference between that sum and 180°

You Try: Find the missing angle. Then classify the triangle based upon its angles and sides.
In Isolation: Details and Patterns

While reading, listen for details that impact the story, such as characters, setting, problem and solution.

While reading, listen for patterns that occur over and over. Listen for the events or behaviors that repeat and can be predicted.

Identify the pattern of events and character behavior by listening to a picture book read aloud. Participate in a group discussion to share your understanding and create a visual using pictures and words to share your findings with the group.
Examples

Native American Group

Yurok (1800s)
- Ceremonies
- Small doors in plank houses
- Women collected
- Men hunted
- Used every part of buffalo
- Berries to preserve meat
- Mostly did one job

Lakota (1500-1800)
- Rectangular houses
- Crops
- Brush Dance
- Language
- Strings=money
- Made teepees
- Language: French
- Winter Count
- Use materials found in environment (ocean + woods)
- Named people for what they do
- 20 different languages

Maya (900)
- Calendar - 365 days
- Using stars + planets
- Have enough food for all
- First in Americas
- Writing system
- Pyramids
- Eats squash, corn, nuts, berries, fish
- Pyramid shaped mounds
- Traded

Mound Builders
- Mississippi River
- Ohio River
- Earth structure to celebrate religion
- Worship corn
- God
- Buried in temp
- Plants to heal
- Burned land - fertile
- Burial
- Ceremonies
- Winter Count
- Medicines
Examples
Read and Respond Log

- Key [image] from my reading:
- Developing [image] so far:
- What [image] considerations arose? How does this help develop the [image] of the author?
- What [image] exist so far in your reading? How do these ambiguities further the author’s [image]?
Narratives
Social Studies
## Problem Solving

<table>
<thead>
<tr>
<th>What is being asked?</th>
<th>What are the conditions? What do you bring to the problem that can help?</th>
<th>What questions do you have?</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>Title:</td>
<td>Author:</td>
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</tr>
<tr>
<td>Setting:</td>
<td>Climax:</td>
<td></td>
</tr>
<tr>
<td>Protagonist:</td>
<td>Resolution:</td>
<td></td>
</tr>
<tr>
<td>Conflict:</td>
<td>Falling Action:</td>
<td></td>
</tr>
<tr>
<td>Antagonist:</td>
<td>Theme:</td>
<td></td>
</tr>
<tr>
<td>Wish:</td>
<td>Point of View:</td>
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</tbody>
</table>

|   |   |   |   |   |
Frames
Frame Yourself
Frames
Math
Wanda is quiet, absent, sat in the back.
- no friends, wore a blue dress.
- lived on Boggin Heights, didn’t talk much, poor.
- brother named Jake, tracks in dirt/mud, court.
- have 100 dresses, shoes.
- lonely, no one noticed about behind her, derisively.
- what is family like? Old Man Svenson’s.
- shoes 100 dresses.
- girls don’t believe “hundred dress” mistreated.
- always wear blue, Maggie’s poor.
- shoes all color Boggin Heights.
- silk, velvet Bill Byron.
- Wanda Petronski.
- Peggy/Maddie parish.
- silent/quiet, teasing, incredulously.
- admiringly, dazzling.
- Why are the teasing me? Obviously.
- being mean?
- funny that I have 100 dresses.
- inseparable.
- invented properly, intruders.
- soft, predictable, politics.

The Hundred Dresses (Ch 1)

Wanda: "Why does she wear 100 dresses?"

Dan: "She talks much? doesn’t like attention.
- where was? wants to be noticed a little.
- she born? wants friends.
- does she wear 100?"
The Sunset Towers faced east even though the sunset was in the west. Barney Northrup lied to Sydelle Blaski; that about 20 people wanted the apartment that was reserved for Sydelle. Grace Wexler was really impressed with Sunset Towers while her husband, Jake Wexler, didn’t like it itself is similar because just as the classy, gorgeous, elegant, enthusiastic, trifles, overjoyed, oohed, blast, plush, glittery, dim, joyous, approving, wobbled, oohed, calmed, gasped, excellent, husband, ceiling, chandeliers, carpeting.

An unusual chain of events happens when sixteen heirs are gathered together at the death of Sam Westing. The heirs compete for Sam Westing’s fortune and, although Sam Westing may be dead, that won’t stop him with his family.

Why does Sunset Towers face east? Why did Barney Northrup choose those particular people? Who was the mistake? Was Grace Wexler as enthusiastic about her apartment afterward? How does Barney Northrup know the price of the heirs’ previous houses?
Example

Captain John Smith's ship crashed into some rocks and they try to get as close as possible to the shore because they are sinking.

I could relate this book to social studies. It was about a man who had a John Smith men.

Grasp wounded Gravelly Argument Green Arrow.

When the Susan Constant carrying Captain John Smith and Samuel, they heard two old men. Why because they were going it to there territory.

Why are the Indians raiding John Smith's fort? Why do the Indians treat visitors in their area like hens? Will Captain Newport find.
Whole Class Example

- Shape repeat in different colors
- "sideways" positive and negative space
- Organic shapes
- Overlapping layers
- Different style to grab attention
- "No more portraits"
- People wanted something new
- Represent a big thing using many colors and shapes (Ocean)

- Beasts of the Sea
  Henri Matisse

- Fauvism: an art movement noted for the use of flamboyant, bold colors. Distorted forms.
- Complimentary colors
- Water
- "Abstract"
- Unique
- Sea creatures, sea eagle

- People like the vibrant colors
- People would buy it because of the ocean
- All different people like it because it is not limited (like portraits)
Framing Walk Through
Deductive and Inductive Reasoning
Use to guide questions about a subject.

- **Unanswered Questions**
- **Rules**
- **Apply the dimensions of the frame to what you are studying.**

**Details**
Deductive and Inductive Reasoning
Google Docs
Disciplinarians

Native

Settler

Colonization

Geographer

Political Scientist
Practice Time

- Create frame based on upcoming unit
  - Start with the TEKS
  - Match Icons to TEKS
  - Change verbiage of TEKS to differentiate task
Dramatic Structure

Exposition
Illustrate three ways the exposition contributes to our understanding of the characters' traits.

The onceler was traveling and found trufala trees. And barbaloots suite there are swimming. living here to. And humming fish.

Rising Action
Illustrate three adventures the characters go on as they approach the climax. How will these adventures contribute to the characters' change over time?

He chpped down a tree. he knotted a thread. The Lorax told the onceler he can't cut down trees. A man buys the Thread. A factory is built and the family is working. And the animals have to leave because there is no living action to live.

Climax & Falling Action
Illustrate the climactic scene and the immediate effects on the characters.

The last tree is cut down. Everyone's left. The Lorax seed so lifted himself the Lorax and left the word unless back.

Denouement
Illustrate how the denouement shows how the characters have changed.

trees.
Dramatic Structure

Exposition
Illustrate three ways the exposition contributes to our understanding of the characters' traits.

Rising Action
Illustrate three adventures the characters go on as they approach the climax. How will these adventures contribute to the characters' change over time?

Climax & Falling
Illustrate the dramatic scene and the immediate effects on the characters.

Dénouement
Illustrate how the dénouement shows how the characters have changed.

Chop trees
Last tree chop
Come down

Chopping a tree
The last tree
was like a man

The huntsman
The last tree

<table>
<thead>
<tr>
<th>Idea</th>
<th>Reaction/Reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>a bad ant</em></td>
<td>I think these two bad ants should learn the ants and try again.</td>
</tr>
<tr>
<td>The scout found a crystal for the queen.</td>
<td>I think it was very important for the scout to bring a crystal for the queen.</td>
</tr>
<tr>
<td>The other ants found the crystal.</td>
<td>Because he was thorough and took care of the queen.</td>
</tr>
<tr>
<td>a bad ant stayed while the other ants went back home.</td>
<td>After they had journey they decide to find the crystals.</td>
</tr>
<tr>
<td>The two bad ants kept on getting into dangerous situations.</td>
<td>I think that was a very bad idea because they could be in danger.</td>
</tr>
<tr>
<td>They were bitten by a spider.</td>
<td>I think the two ants decided to go through these dangerous situations because they would learn their lesson.</td>
</tr>
<tr>
<td>The two ants soon learned their lesson and they went back home.</td>
<td>When really dangerous situations happen the ants are killed.</td>
</tr>
<tr>
<td></td>
<td>I think it was really good that the ants learned their lesson because hopefully they won't do it again and they got to go home after their dangerous journey.</td>
</tr>
</tbody>
</table>
**Cornell Notes**

**Topic:** The Spanish in the Americas

**Questions:**
- Was it only the Spanish Catholic Church who wanted to persuade the natives to accept their faith?
- How did they persuade them?
- Is encomienda related to the word economy?
- Is this really fair? What if the natives did not want to be Christian?

**Notes:**
- Monarchs: rulers of countries like kings and queens
- Spain conquered for wealth and power
- Catholic church wanted to persuade natives to accept their faith
- In today’s Mexico the Spanish beat the Aztecs.
- By 1500s Spain had large colony in New World
- Gold and silver made Spain rich
- Native Americans were forced into slavery to work in mines
- Ranching and farming took place on encomienda
- Encomienda: grant of land from Spain which gave settlers right to control natives
- Settlers were supposed to care for natives and teach them Christianity
- Natives were supposed to work for settlers
- Slaves were also brought from Africa
- Class structure:
  - Peninsulares: Spanish-born in Spain
  - Criollos: Born in New World to Spanish parents
  - Mestizos: Mixed Spanish and Native American backgrounds
  - American Indians and African Slaves
Frayer Model

Frayer Model
Of Concept Attainment

Definition
- I think the definition of a thesis statement is the main idea you get from a story; the lesson the author is trying to give.

Characteristics
- A thesis statement must have at least 3 characteristics:
  1. It is a complete sentence.
  2. It is the last sentence in the last paragraph.
  3. It is a response to a question.

Topic
- A thesis statement is the big idea of the story. It is the last sentence in the last paragraph and the last sentence in the last sentence of the story. It's a complete sentence.

Examples
- “Bobby learns how to survive while being invisible.”
- “Kira learns how to survive with a twisted leg.”

Non-Examples
- “I...”
- “You...”
- “We...”

Thesis Statement
- “The Borrowers is a great book. It cannot be a series with details from the story.”
- “In the face of common dangers, snow differences are being forgotten.”
- “If you teach, you must expect evil.”
- “Prophet today for the needs of tomorrow.”

Examples
- “Bobby learns how to survive while being invisible.”
- “Kira learns how to survive with a twisted leg.”

Non-Examples
- “I...”
- “You...”
- “We...”

- A thesis statement is the big idea of the story. It is the last sentence in the last paragraph and the last sentence in the last sentence of the story. It’s a complete sentence.

Frayer Model
Of Concept Attainment

Definition
- A thesis statement is the main idea you get from a story; the lesson the author is trying to give.

Characteristics
- A thesis statement must have at least 3 characteristics:
  1. It is a complete sentence.
  2. It is the last sentence in the last paragraph.
  3. It is a response to a question.

Topic
- A thesis statement is the big idea of the story. It is the last sentence in the last paragraph and the last sentence in the last sentence of the story. It’s a complete sentence.

Examples
- “Bobby learns how to survive while being invisible.”
- “Kira learns how to survive with a twisted leg.”

Non-Examples
- “I...”
- “You...”
- “We...”

Thesis Statement
- “The Borrowers is a great book. It cannot be a series with details from the story.”
- “In the face of common dangers, snow differences are being forgotten.”
- “If you teach, you must expect evil.”
- “Prophet today for the needs of tomorrow.”
Frayer Model
Thinking Maps

From text

Text + Head

From head
The Differentiation Equation for all levels of learners

- Thinking Skills - T/S
- Depth & Complexity - D/C
- Content - C
- Research/Resources
- Product - P

\[ T/S + (D/C) C + R + P \]
To develop learning objectives for individualized instruction

<table>
<thead>
<tr>
<th>Thinking Skills</th>
<th>Differentiation of Content</th>
<th>Resources/Research Skills</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>T/S</td>
<td>C + D/C &amp; C/I</td>
<td>R/S</td>
<td>P</td>
</tr>
</tbody>
</table>

**Thinking Skills**
- Identify
- List
- Define
- Describe
- Solve
- Compare
- Categorize
- Create
- Design
- Redesign
- Judge with Criteria
- Prove with Evidence

**Differentiation of Content**
- Language Arts
- Math
- Science
- Social Science
- Art
- Music

**Resources/Research Skills**
- Reading
- Observing
- Writing
- Solving
- Listening

**Product**
- Advertisement
- Brochure
- Chart
- Comic book
- Commercial
- Diary entry
- Discussion
- Display
- Game
- Glossary
- Journal
- Model
- Mobile
- Multimedia Presentation
- Newspaper Article
- Philosophical Chair
- Report
- Time line
## Differentiation Equation = Task Statement

To develop learning objectives for individualized instruction

<table>
<thead>
<tr>
<th>Thinking Skills</th>
<th>+</th>
<th>Differentiation of Content</th>
<th>+</th>
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</thead>
<tbody>
<tr>
<td>T/S</td>
<td></td>
<td>C + D/C</td>
<td></td>
<td>R/S</td>
<td></td>
<td>P</td>
</tr>
<tr>
<td>Sequence</td>
<td></td>
<td>Events of the story +</td>
<td></td>
<td>Reading text</td>
<td></td>
<td>Cause and effect chain</td>
</tr>
<tr>
<td>Identify attributes</td>
<td></td>
<td>Characters +</td>
<td></td>
<td>Novel/picture book</td>
<td></td>
<td>Dramatization</td>
</tr>
<tr>
<td>Prove with evidence</td>
<td></td>
<td>Word Origins +</td>
<td></td>
<td>Text, Dictionary, Thesaurus</td>
<td></td>
<td>Diagram</td>
</tr>
</tbody>
</table>

- T/S: Thinking Skills
- C: Content
- D/C: Differentiation of Content
- R/S: Research Skills
- P: Product

- Sequence: Events of the story, Cause and effect chain
- Identify attributes: Characters, Novel/picture book, Dramatization
- Prove with evidence: Word Origins, Text, Dictionary, Thesaurus, Diagram
Differentiation Equation = Task Statements

\[ \frac{T}{S} + (D/C) C + R + P \]
Students will analyze the American Revolution through Change Over Time and Ethics through the use of the textbook and primary sources to take a position on how revolutionary the American Revolution actually was in a debate.
# Learning Objective

## Task Statement

\[ \text{T/S} + (\text{C + D/C & C/I}) + \text{R/S + P} \]

<table>
<thead>
<tr>
<th>Content</th>
<th>T/S</th>
<th>C + D/C &amp; C/I</th>
<th>R/S</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequence</td>
<td>Events of the story</td>
<td>+</td>
<td>Reading text</td>
<td>Cause &amp; effect chain</td>
</tr>
</tbody>
</table>

### Language Arts

- Identify Characters + Novel/ Dramatization
- Attributes picture book
- Prove with Word origins + Text/ Diagram
evidence dictionary
Learning Objective

Task Statement \([T/S + (D/C + C) + R/S + P]\)

Students will ________ the _______.
(thinking skills - T/S) (dimension of differentiation - D/C)

related to the study of __________________________.
(content - C)

Students will get/organize information by ___________
(resources/research skills - R/S)

and share their findings by/in _________________________.
(product - P)
The Differentiator

- Byrdseed.com
4 (5) Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:

(A) represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity;

Justify the reasonableness of solutions to multistep problems by working with a classmate to evaluate each other’s solutions. Use details and the language of the discipline to construct a viable argument.
Describe the patterns within multiplication. Use manipulatives to create models to help you understand the concept of multiplication. Research with a partner to find evidence of multiplication in the real world. Share your findings with the class.
Create a grade-level objective.

Use the Differentiated Equation/Task Statement formula \( T/S + (C + D/C \& C/I) + R/S + P \)
Creating a Tiered Lesson

- Identify the subject for the lesson
- Identify the objective that you are targeting
- Identify the key concept and generalization
- Determine the area you will tier:
  - the content – what you want the students to learn
  - the process – the way the students make sense of the content
  - the product – the outcome of the lesson
- Determine how many tiers you will need
- Tier according to readiness (below, at, above grade level)
- Create on-level task first then adjust up and down
- Determine what characters are like by what they say and do and how the author portrays them...

**Task Statement [T/S + (C + D/C) + R/S + P]**

<table>
<thead>
<tr>
<th>Level</th>
<th>T/S</th>
<th>C + D/C</th>
<th>R/S</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>Comp/Contrast</td>
<td>main characters</td>
<td>text w/partner</td>
<td>graphic organizer</td>
</tr>
<tr>
<td>Core</td>
<td>Comp/Contrast</td>
<td>main character</td>
<td>text w/partner</td>
<td>graphic organizer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>presentation</td>
<td>presentation</td>
</tr>
<tr>
<td>Below</td>
<td>Comp/Contrast</td>
<td>main character</td>
<td>text w/small group</td>
<td>graphic organizer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>volunteer</td>
<td>volunteer</td>
</tr>
</tbody>
</table>
Create Your Own Tiered Lesson

- Determine the area you will tier:
  - the content – what you want the students to learn
  - the process – the way the students make sense of the content
  - the product – the outcome of the lesson
Prompts are used in isolation to provide specific focus for student learning.

Prompts are used together, paired in a set to provide increased sophistication or complexity of the study.

Intersections blend two prompts. Two prompts are combined to elicit critical thinking enabling students to determine the consequences of the two prompts joining together.

Several Prompts are used to provide a pathway that fosters critical and analytical thinking which ultimately yields increased understanding of the study.
Combining the Icons: Sets and Intersections

Who can \textit{elaborate} and describe the details of the pattern?

How do the details of the pattern \textit{relate} to the big idea "One change leads to another?"
Iconic Pathway

Reason For Reading

Use the following to frame your iconic statement.

Examining
Changing
Understanding
Analyzing

(thinking tool)

helps us:
understand
realize
change
see

(thinking tool)
Choose an icon to guide your thinking to lead you to the big idea.

Example:

- Examining ______ helps me see _______.
Iconic Pathway

Name: ____________________________

Subject/Title: _______________________

[Diagram with various sections and icons]
High School Literature Circles

**Objective:** Increase our Understanding of Literature Through *Meaningful, Interpretive, and Evaluative Analysis, Discussion, and Presentation*

<table>
<thead>
<tr>
<th>ROLE</th>
<th>TASK [a brief overview of each role]</th>
<th>THINKING SKILLS</th>
<th>PATHWAY [suggested]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profiler</strong></td>
<td>After careful <strong>analysis</strong> of the selected text and the character, the Profiler can present a profile of the plot, conflict, character, and or setting in a FRAME Also, <strong>multiple perspectives</strong> may be considered regarding the plot or conflict of the selected text. <strong>OVERALL,</strong> the Profiler is responsible for tracking the changes in the character with her/his presentation of the graphic organizer <strong>WITH A FRAME</strong></td>
<td>Identify, Consider, Compare, Speculate, Prove with Evidence</td>
<td></td>
</tr>
<tr>
<td><strong>Word Finder</strong></td>
<td>As you read, Identify 5-8 words [nouns, verbs, adjectives, adverbs, metaphors, similes] Select the top 4 words of the selected text to highlight. She/he will <strong>note the definition, location, reason for the selection, and why the words are important to the text.</strong> Present the four words with the completed task in a FRAME</td>
<td>Identify, Define, Consider Impact/Significance</td>
<td></td>
</tr>
<tr>
<td><strong>Connector</strong></td>
<td>The Connector will consider possible similarities or differences of the literature to the real world. Connect with any of the characters, events, conflict, setting, etc. Relate with anything from the story to world events, moments in history, personal experiences, other stories/characters/events.</td>
<td>Determine, Relate, Compare, Make Analogies, Differentiate</td>
<td></td>
</tr>
<tr>
<td><strong>DISCUSSION DIRECTOR</strong></td>
<td><strong>LITERARY LUMINARY</strong></td>
<td><strong>ILLUSTRATOR</strong></td>
<td><strong>OTHER OPTIONS</strong></td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------</td>
<td>-----------------</td>
<td>------------------</td>
</tr>
<tr>
<td>opens, facilitates, and closes the Discussion.</td>
<td>The Literary Luminary will select a quote or a short passage that best represents the big idea of the selected text. The L.L. is the resource for textual evidence to support any interpretation the group may have.</td>
<td>Present to your Lit. Circle your “visualization” of the selected reading. Illustrate based on what inspires you.</td>
<td>Using the <strong>TASK CARD for Role EXTENSIONS</strong> [or Lit. Circle Pathways] you can combine/modify some of the elements of any of the roles listed above and create/synthesize your own tasks for appreciating the selected literature.</td>
</tr>
<tr>
<td>☑ Helps Circle consider multiple perspectives, connections, interpretation of theme, etc.</td>
<td>☑ Present passages, based on what you find interesting and/or helpful using a FRAME</td>
<td>☑ Present your Illustration with a quote or exposition</td>
<td>You choose</td>
</tr>
<tr>
<td>☑ After leading the discussion, the Director will summarize the highlights of the group’s discussion. The Director is responsible for stating the big idea.</td>
<td>☐ Consider the theme, characters, key events, or literary devices</td>
<td>☑ Design and plan your final illustration using a FRAME</td>
<td>You choose</td>
</tr>
<tr>
<td>☑ Use a Frame to develop your questions [interpretation &amp; evaluation]</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
It is concluded from myriad specific purposes that the disciplinarians communicated in this study that Depth and Complexity is a conceptual ‘toolkit.’*

...when applying concepts of Depth and Complexity to the study of disciplines, students are being prompted to think in similar ways that disciplinarians do when engaging in research and scholarly work.*

Paivio’s “dual-coding” (1991), which states that pictures hold an advantage over words because they can be encoded using both verbal and visual pathways...

* from Lauer, Joanna, Experts’ Perspectives on the Application and Relevancy of Depth and Complexity to Academic Disciplines of Study, c 2010
Now What?

- Integrate at least 1 or 2 icons into your lessons daily
- Understand that the Depth & Complexity icons are only part of the Depth & Complexity Framework.
The main topic is “My Plans to Incorporate Icons.”

Have a discussion in groups of four.

This activity will take about 5 minutes.
J Taylor Education

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