

MAKING THINKING VISIBLE

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Beyond Bloom

- ▣ Knowledge and understanding don't happen in a sequence
- ▣ Deep learning is a more active constructive process than memorization of knowledge and facts
- ▣ Understanding is a primary goal of teaching

Thinking about Thinking

- ▣ Is a messy, complex process
- ▣ Identify purposes of thinking
 - Why is it we want students to think?
 - When is thinking important?
 - What purposes does it serve?
- ▣ Understanding isn't a type of thinking but one of the goals of thinking
- ▣ What kinds of thinking do we value and want to promote in the classroom?
- ▣ What kinds of thinking does the lesson force students to do?

THINKING for UNDERSTANDING:

1. Observing closely and describing what is there
2. Building explanations and interpretations
3. Reasoning with evidence
4. Making connections
5. Considering different viewpoints and perspectives
6. Capturing the heart and forming conclusions
7. Wondering and asking questions
8. Uncovering complexity and going below the surface of things

OTHER KINDS OF THINKING to solve problems, make decisions, and form judgments

- Identifying patterns and making generalizations
- Generating possibilities and alternatives
- Evaluating evidence, arguments and actions
- Formulating plans and monitoring actions
- Identifying claims, assumptions and bias
- Clarifying priorities, conditions, and what is known

QUESTIONS to promote thinking

- ▣ **Ask:**
- ▣ What is going on in your head? Focuses on cognitive actions
- ▣ What makes you say that? Focuses on reasoning
- ▣ **Instead of:**
- ▣ What are you doing? Focuses on physical actions
- ▣ Why? Focuses on answering

ROUTINES FOR INTRODUCING AND EXPLORING IDEAS

Introducing and exploring ideas

- ▣ See, Think, Wonder
 - the use of observation to further student thinking
 - A good choice for the beginning of a unit
 - Can use a photo, painting, artifact, video clip, excerpt of text, political cartoon, chart, object
 - Image should contain significant elements to be noticed
 - Image should have some ambiguity

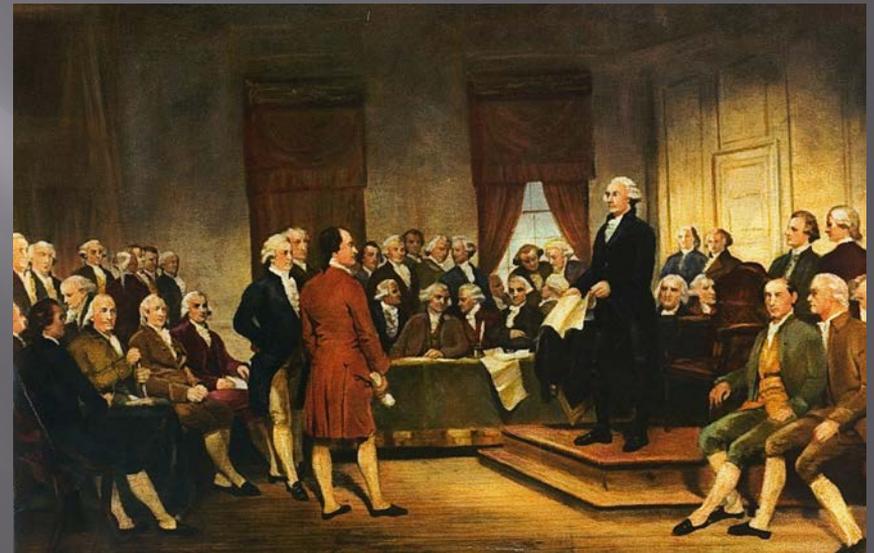
See, Think, Wonder



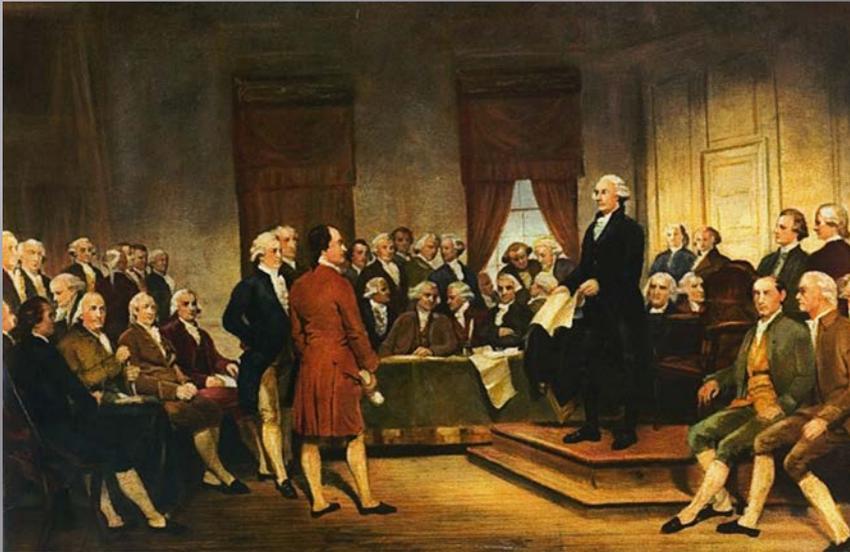
- ▣ **SEE:** examine the photo and, without talking, list on paper what you see.
- ▣ Only list things you can observe in the photo
- ▣ Do not interpret what you see at this point.

See, Think, Wonder

- ▣ **THINK:**
 - Take a minute to think about what all of this means.
 - What does it make you think?
 - What kinds of interpretations can we form based on your observations?
 - What else is going on here?
 - What do you see that makes you say that?



See, Think, Wonder



- ▣ **WONDER:**
 - What does all of this makes them wonder?
 - What broader questions do you have about what you are looking at?
 - Write 2 “I wonder” statements on 2 separate pieces of white paper.
 - Share your wonderings.
 - Post wonderings on the back bulletin board to be revisited at another time. Hang the photo as well.

Share thinking

Make connections to what you know and what is coming in this course/unit, etc.



Purpose?

- ▣ Get students thinking about government
 - Recognize the time period is different
 - Recognize it is all men
 - Maybe the seriousness of their work
- ▣ Get students thinking
- ▣ Make connections between what they see and what we will be studying

Variations

- ▣ Depending on the image or your purpose
 - Give them all 3 prompts at once
 - ▣ What do you see?
 - ▣ What do you think about it?
 - ▣ What question does it raise?/What do you wonder?
 - Then repeat with other things they see

Is it working?

- ▣ Look for depth of what they **see**
- ▣ Look for the support they give when **thinking**
- ▣ Can they answer What makes you say that?
- ▣ Look for broad questions to come from the **wonder**

Zoom In

- ▣ This routine focuses on a close examination of parts of a photo and making interpretations
- ▣ At each step have students record/discuss what they see with partners and develop hypotheses about what it is or what it means
- ▣ Consider sharing some of those hypotheses before the next reveal

Look Closely at the small bit of image That is
revealed

What do you see?



What is your hypothesis or interpretation of what this might be
based on what you are seeing?

Zoom In

- ▣ Uncover more of the image and ask learners to identify anything new that they see
- ▣ You could ask, What is the relationship between the people in the photo?

What new things do you see?

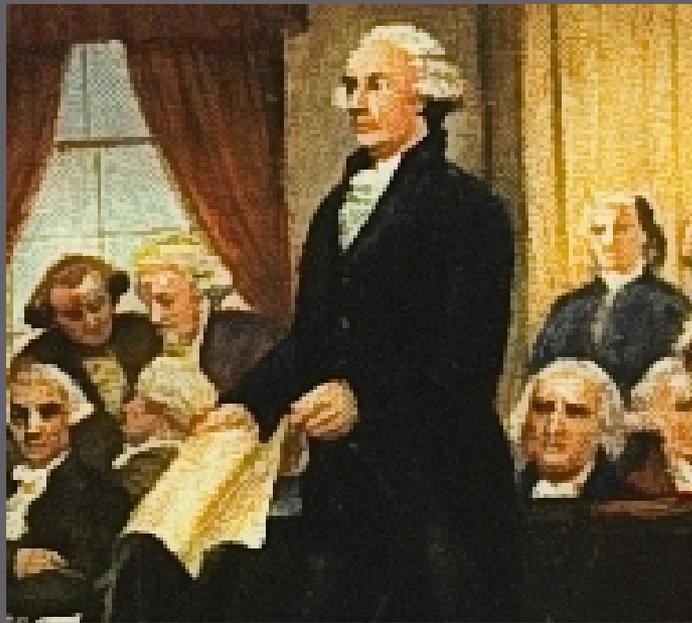
How does this change your hypothesis? Has the new information answered any of your wonders or changed your previous ideas?



Zoom In

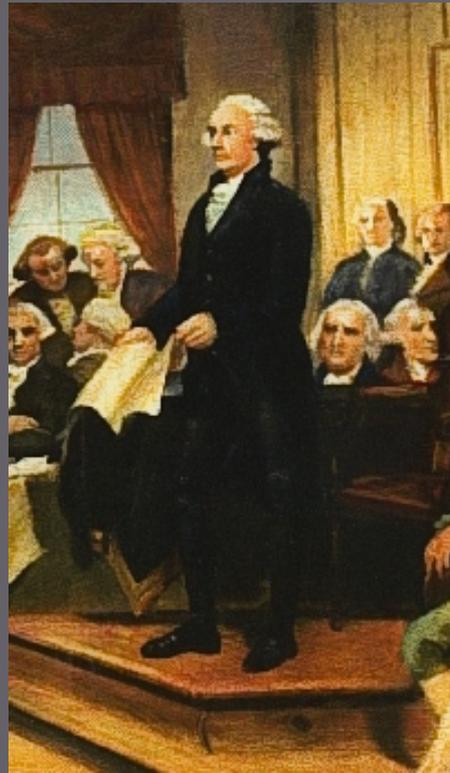
- ▣ Ask, do you have a prediction of what the next section looks like?

What new things are you wondering about?



What new things are you wondering about?

Why is he standing there? What could he be doing?



What is it?

What lingering questions remain for you about this image?



Share Thinking

- ▣ How did your interpretations change over the course of the reveal?
- ▣ How did seeing more of the image influence their thinking?
- ▣ What parts were full of information?
- ▣ What does this photo tell you about our unit of study?

Variations

- ▣ In the book page 66 – an example of using the technique to reveal setting of a story
 - Show a piece of the photo and ask students
 - ▣ What can you feel?
 - ▣ What can you see, smell, and hear?
 - ▣ What do you notice?

Have students record their responses and share them to help build the setting of the story in their minds before they begin.

Is it Working?

- ▣ Are students paying attention to detail?
- ▣ Do they support their assumptions by referring to the image?
- ▣ Are they synthesizing new information with each reveal?
- ▣ Do they build on the ideas of others?

For each Routine

- ▣ Share Thinking
- ▣ Purpose of routine
- ▣ Variations
- ▣ Is it working?

Think-Puzzle-Explore

- ▣ Consider the (Government: Judicial Branch) of government
- ▣ • What do you think you know about it?
- ▣ • What questions or puzzles do you have about it?
- ▣ • How might you explore the puzzles we have around it?

- ▣ Purpose of Routine: connect to prior knowledge, plan for independent or group inquiry
- ▣ Variations: Use step one at the end of the unit to reflect on what they have learned throughout, Could have students create their own inquiry for Explore
- ▣ Is it working: Are students formulating new ideas to wonder about? Can they investigate or create an inquiry?

Chalk Talk

- ▣ Looking at the topic or question written on the chart paper (Sociology: dominant and minority groups)
- ▣ What ideas come to mind when you consider this idea, question, or problem?
- ▣ • What connections can you make to others' responses?
- ▣ • What questions arise as you think about the ideas and consider the responses and comments of others?

3-2-1 Bridge

- ▣ Thinking about (History: war), identify:
- ▣ **Initial Response**
 - 3 words
 - 2 questions
 - 1 metaphor/simile
- ▣ **New response**
 - 3 words
 - 2 questions
 - 1 metaphor/simile
- ▣ **Bridge** – Identify how your new responses connect to or shifted from your initial response.

Compass Points

- ▣ Considering the idea, question, or proposition before you (History: prejudice and discrimination)
- ▣ E=Excitements. What excites you about this idea or proposition? What's the upside?
- ▣ W=Worries. What do you find worrisome about this idea or proposition? What's the downside?
- ▣ N=Needs. What else do you need to know or find out about this idea or proposition?
- ▣ S=Stance, Steps, or Suggestions. What is your current stance or opinion on the idea or proposition? What should your next step be in your evaluation of this idea or proposition? What suggestions do you have at this point?

The Explanation Game

- ▣ Taking a close look at the object you are trying to understand (Phys Ed: kinda ball) or (Math: pi).
- ▣ **Name it.** Name a feature or aspect of the object that you notice.
- ▣ **Explain it.** What could it be? What role or function might it serve? Why might it be there?
- ▣ **Give reasons.** What makes you say that? Or why do you think it happened that way?
- ▣ **Generate alternatives.** What else could it be? And what makes you say that?

ROUTINES FOR SYNTHESIZING AND ORGANIZING IDEAS

Headlines

- ▣ Think of the big ideas and important themes in what you have been learning (World Language – discussing daily routines in present tense)
- ▣ Write a headline for this topic or issue that summarizes and captures a key aspect you feel is significant.

CSI: Color, Symbol, Image

- ▣ Think of the big ideas and important themes in what you have just read, seen, or heard.
(English: The American Dream)
- ▣ **Choose** a color that you think best represents the essence of that idea.
- ▣ **Create** a symbol that you think best represents the essence of that idea.
- ▣ **Sketch** an image that you think best captures the essence of that idea

Generate-Sort-Connect-Elaborate: Concept Map

- ❑ Select a topic, concept, or issue for which you want to map or understand. (Science: Water)
- ❑ **Generate** a list of ideas and initial thoughts that come to mind when you think about this topic or issue.
- ❑ **Sort** your ideas according to how central or tangential they are. Place central ideas near the center and more tangential ideas toward the outside of the page.
- ❑ **Connect** your ideas by drawing connecting lines between the ideas that have something in common. Explain and write on the line in a short sentence how the ideas are connected.
- ❑ **Elaborate** on any of the ideas or thoughts you have written so far by adding new ideas that expand, extend, or add to your initial ideas.

Connect-Extend-Challenge

- ▣ Consider what you have read, seen, or heard, then ask yourself: (Latin: Poster)
- ▣ How are the ideas and information presented **connected** to what you already knew?
- ▣ What new ideas did you get that **extended** or broadened your thinking in new directions?
- ▣ What **challenges** or puzzles have come up in your mind from the ideas and information presented?

The 4 C's

- ▣ After reading a text:
- ▣ **Connections:** What connections do you draw between the text and your own life or your other learning?
- ▣ **Challenge:** What ideas, positions, or assumptions do you want to challenge or argue with in the text?
- ▣ **Concepts:** What key concepts or ideas do you think are important and worth holding on to from the text?
- ▣ **Changes:** What changes in attitudes, thinking, or action are suggested by the text, either for you or others?

The Micro Lab Protocol

- ▣ **Reflect** individually on the issue or topic (Western Studies: Political Leaders) being examined, then working in triads:
- ▣ **Share:** The first person in the group shares for a set time (usually 1-2 minutes). The other members listen attentively without comment or interruption.
- ▣ **Pause** for 20-30 seconds of silence to take in what was said.
- ▣ **Repeat** for persons two and three, pausing for a moment of silence after each round.
- ▣ **Discuss** as a group (5-10 minutes), referencing the comments that have been made and making connections between the responses of the group.

I Used to Think. . . , Now I Think. . .

- ▣ Reflect on your current understanding of this topic (Government: powers of the president before and after DT), and respond to each of these sentence stems:
 - ▣ I used to think. . .
 - ▣ Now I think. . .

ROUTINES FOR DIGGING DEEPER INTO IDEAS

What Makes You Say That?

- ▣ Why do we recycle?

- ▣ In follow-up to a statement, assertion, or opinion expressed by someone, ask:
 - ▣ What makes you say that?
 - For each response hereafter you ask the same question
 - In group discussions the students are required to ask it of each other.

Circle of Viewpoints

- ▣ Identify the different perspectives that could be present in or affected by what you have just read, seen, or heard.
- ▣ Record these in a circle with the issue or event at the center.
- ▣ Choose one of the perspectives to explore further, using the following prompts as a starting place:
 - I am thinking of [name the event/issue] from the point of view of. . .
 - I think. . .[describe the topic from your viewpoint. Be an actor – take on the character of your viewpoint]. Because. . . [explain your reasoning]
 - A question/concern I have from this viewpoint is. . .

Step Inside

- ▣ Think about a person (Donald Trump) or an object that is a part of or connected to the event or situation you are examining.
- ▣ Place yourself within the event or situation to see things from this point of view. Some questions to consider:
 - What can this person or thing see, observe, or notice?
 - What might the person or thing know, understand, hold true, or believe?
 - What might the person or thing care deeply about?
 - What might the person or thing wonder about or question?

Red Light, Yellow Light

- ▣ As you read, view, or listen to the material before you, consider the following questions:
- ▣ What are the red lights here? That is what things stop you in your tracks as a reader/listener/observer because you doubt their truth or accuracy?
- ▣ What are the yellow lights here? That is, what things slow you down a bit, give you pause, and make you wonder if they are true and accurate or not?

Claim-Support-Question

- ▣ Drawing on your investigation, experience, prior knowledge, or reading:
- ▣ Make a **claim** about the topic, issue, or idea being explored. A claim is an explanation or interpretation of some aspect of what is being examined.
- ▣ Identify **support** for your claim. What things do you see, feel, or know that lend evidence to your claim?
- ▣ **Raise a question** related to your claim. What may make you doubt the claim? What seems left hanging? What isn't fully explained? What further ideas or issues does your claim raise?

Tug-Of-War

- ❑ Place a line across the middle of your desk or table to represent a tug-of-war rope. Working with a dilemma that can be considered from multiple perspectives or stances:
- ❑ Identify and frame the two opposing sides of the dilemma you are exploring. Use these to label each end of your tug of war rope.
- ❑ Generate as many “tugs,” or reasons that “pull you toward,” that is, support each side of the dilemma as you can. Write these on individual sticky notes.
- ❑ Determine the strength of each tug and place it on your tug-of-war rope, placing the strongest tugs at the farthest ends of the rope and the weaker tugs more toward the center.
- ❑ Capture any “What if. . .?” questions that arise in the process. Write these on sticky notes and place them above the tug-of-war rope.

Sentence-Phrase-Word

- ▣ In your discussion group, review the text that you have read and each select your own:
- ▣ Sentence that was meaningful to you, that you felt captures a core idea of the text
- ▣ Phrase that moved, engaged, or provoked you
- ▣ Word that captured your attention or struck you as powerful
- ▣ As a group, discuss and record your choices. Begin by each sharing your words, then phrases, then sentences. Explain why you made the selections you did. Looking at your group's collective choices of words, phrases, and sentences, reflect on the conversation by identifying:
 - What themes emerge?
 - What implications or predictions can be drawn?
 - Were there aspects of the text not captured in your choices?

Ritchhart, Ron, et al. *Making Thinking Visible*.

San Francisco, CA: Jossey-Bass, 2011. Print.