

Table of Contents:

1. Chalk Talk Routine
2. Artful Thinking Palette
3. Article-“Interrogating Texts: 6 Reading Habits to Develop in Your First Year at Harvard”
4. See/Think/Wonder Routine
5. Compass Points Routine
6. Zoom in Routine
7. Headlines Routine
8. Thinking Routines Matrix
9. Resources

Chalk Talk

- 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?

Purpose: What kind of thinking does this routine encourage?

This routine asks learners to consider ideas, questions, or problems by silently responding in writing both to the prompt and the thoughts of others. The "silent" conversation allows learners the time to follow through thoughts without interruption and by choosing when they are ready to consider others points of view and make comments.

Application: When and where can it be used?

The prompt or prompts for a Chalk Talk can be single words or phrases related to a topic of study. However, questions tend to generate a richer level of discussion and interactivity. Chalk Talk can also be used for reflection. As such, think about what issues, topics, or learning moments you want students to reflect upon.

Steps:

1. Set up

Write each prompt on a large sheet of chart paper or butcher's paper and place on tables or hang on the wall around the room. Place markers at each table or pass them out to individuals. Decide whether you want to assign students to groups for the purposes of the Chalk Talk or you want them to freely move about the room. If students will stay together as a group, decide how much time you will give for the first round of the Chalk Talk.

2. Present the Chalk Talk Prompt

Invite learners to think about their reactions to the prompt and record their ideas and questions. Encourage learners to read and add to each other's responses with additional comments and questions.

3. Circulate

Provide time for learners to circulate around the Chalk Talk paper, reading and adding to the prompts and responses as they build. If being done with groups, you may want to have groups stay with one recording sheet for a specific time to allow for conversation to develop.

4. Facilitate

You may need to prompt the class about types of responses they can make as they read: connecting ideas, elaborating on others ideas, commenting on what others have written, asking other not respond with more detail, and so on. There is no reason you cannot be an active participant as well. Modeling is a powerful tool with Chalk Talk.

5. Share the thinking

If people have rotated as a group, allow them to return to their original starting places to read what others have written on “their” Chalk Talk paper. Allow time for the class to review the various Chalk Talks if there is more than one. Ask the class what themes they noticed emerging. Where did they see common issues and reactions? What questions surprised them? Debrief the process itself, asking the class how their thinking developed during the Chalk Talk.

Artful Thinking Palette



Reasoning



Questioning & Investigating



Observing & Describing



Exploring Viewpoints



Finding Complexity



Comparing & Connecting



Interrogating Texts: 6 Reading Habits to Develop in Your First Year at Harvard

Critical reading--active engagement and interaction with texts--is essential to your academic success at Harvard, and to your intellectual growth. Research has shown that students who read deliberately retain more information and retain it longer. Your college reading assignments will probably be more substantial and more sophisticated than those you are used to from high school. The amount of reading will almost certainly be greater. College students rarely have the luxury of successive re-readings of material, either, given the pace of life in and out of the classroom.

While the strategies below are (for the sake of clarity) listed sequentially, you can probably do most of them simultaneously. They may feel awkward at first, and you may have to deploy them very consciously, especially if you are not used to doing anything more than moving your eyes across the page. But they will quickly become habits, and you will notice the difference--in what you "see" in a reading, and in the confidence with which you approach your texts.

1. Previewing: Look "around" the text before you start reading.

You've probably engaged in one version of previewing in the past, when you've tried to determine how long an assigned reading is (and how much time and energy, as a result, it will demand from you). But you can learn a great deal more about the organization and purpose of a text by taking note of features other than its length.

Previewing enables you to develop a set of *expectations about the scope and aim* of the text. These very preliminary impressions offer you a way to focus your reading. For instance:

- What does the presence of *headnotes*, an *abstract*, or other *prefatory material* tell you?
- Is the *author* known to you already? If so, how does his (or her) *reputation* or *credentials* influence your perception of what you are about to read? If the author is unfamiliar or unknown, does an editor introduce him or her (by supplying brief biographical information, an assessment of the author's work, concerns, and importance)?
- How does the disposition or *layout of a text* prepare you for reading? Is the material broken into parts--subtopics, sections, or the like? Are there long and unbroken blocks of text or smaller paragraphs or "chunks" and what does this suggest? How might the parts of a text guide you toward understanding the line of inquiry or the arc of the argument that's being made?
- Does the text seem to be arranged according to *certain conventions of discourse*? Newspaper articles, for instance, have characteristics that you will recognize; textbooks and scholarly essays are organized quite differently. Texts demand different things of you as you read, so whenever you can, register the type of information you're presented with.

2. Annotating: Make your reading thinking-intensive from start to finish.

Annotating puts you actively and immediately in a "*dialogue*" with an author and the issues and ideas you encounter in a written text. It's also a way to have an ongoing conversation with yourself as you move through the text and to record what that encounter was like for you. Here's how:

- *Throw away your highlighter*: Highlighting can seem like an active reading strategy, but it can actually distract from the business of learning and dilute your comprehension. Those bright yellow lines you put on a printed page one day can seem strangely cryptic the next, unless you have a method for remembering why they were important to you at another moment in time. Pen or pencil will allow you to more to a text you have to wrestle with.
- *Mark up the margins of your text with words and phrases*: ideas that occur to you, notes about things that seem important to you, reminders of how issues in a text may connect with class discussion or course themes. This kind of interaction keeps you conscious of the *reasons* you are reading as well as the *purposes* your instructor has in mind. Later in the term, when you are reviewing for a test or project, your marginalia will be useful memory triggers.
- *Develop your own symbol system*: asterisk (*) a key idea, for example, or use an exclamation point (!) for the surprising, absurd, bizarre. Your personalized set of hieroglyphs allow you to capture the important -- and often fleeting -- insights that occur to you as you're reading. Like notes in your margins, they'll prove indispensable when you return to a text in search of that perfect passage to use in a paper, or are preparing for a big exam.
- *Get in the habit of hearing yourself ask questions*: "What does this mean?" "Why is the writer drawing that conclusion?" "Why am I being asked to read this text?" etc. Write the questions down (in your margins, at the beginning or end of the reading, in a notebook, or elsewhere. They are reminders of the unfinished business you still

have with a text: something to ask during class discussion, or to come to terms with on your own, once you've had a chance to digest the material further or have done other course reading.

3. **Outline, summarize, analyze: Take the information apart, look at its parts, and then try to put it back together again in language that is meaningful to you.**

The best way to determine that you've really gotten the point is to be able to state it in your own words.

Outlining the argument of a text is a version of annotating, and can be done quite informally in the margins of the text, unless you prefer the more formal Roman numeral model you may have learned in high school. **Outlining** enables you to see the skeleton of an argument: the thesis, the first point and evidence (and so on), through the conclusion. With weighty or difficult readings, that skeleton may not be obvious until you go looking for it.

Summarizing accomplishes something similar, but in sentence and paragraph form, and with the connections between ideas made explicit.

Analyzing adds an evaluative component to the summarizing process—it requires you not just to restate main ideas, but also to test the logic, credibility, and emotional impact of an argument. In analyzing a text, you reflect upon and decide how effectively (or poorly) its argument has been made. Questions to ask:

- What is the writer asserting?
- What am I being asked to believe or accept? Facts? Opinions? Some mixture?
- What reasons or evidence does the author supply to convince me? Where is the strongest or most effective evidence the author offers -- and why is it compelling?

4. **Look for repetitions and patterns:**

The way *language is chosen, used, positioned in a text* can be important indication of what an author considers crucial and what he expects you to glean from his argument. It can also alert you to ideological positions, hidden agendas or biases. Be watching for:

- Recurring images
- Repeated words, phrases, types of examples, or illustrations
- Consistent ways of characterizing people, events, or issues

5. **Contextualize:** Once you've finished reading actively and annotating, *take stock for a moment and put it in perspective.*

When you contextualize, you essential "*re-view*" a text you've encountered, framed by its historical, cultural, material, or intellectual circumstances.

- When was it written or where was it published? Do these factors change or otherwise influence how you view a piece?

Also view the reading through the lens of your own experience. Your understanding of the words on the page and their significance is always shaped by what you have come to know and value from living in a particular time and place.

6. **Compare and Contrast: Set course readings against each other to determine their relationships (hidden or explicit).**

- At what point in the term does this reading come? Why that point, do you imagine?
- How does it contribute to the main concepts and themes of the course?
- How does it compare (or contrast) to the ideas presented by texts that come before it? Does it continue a trend, shift direction, or expand the focus of previous readings?
- How has your thinking been altered by this reading? How has it affected your response to the issues and themes of the course?

See/ Think/Wonder

- What do you see?
- What do you think about that?
- What does it make you wonder about?

Purpose: What kind of thinking does this routine encourage?

This routine encourages students to make careful observations and thoughtful interpretations. It helps stimulate curiosity and sets the stage for inquiry.

Application: When and where can it be used?

Use this routine when you want students to think carefully about why something looks the way it does or is the way it is. Use the routine at the beginning of a new unit to motivate student interest or try it with an object that connects to a topic during the unit of study. Consider using the routine with an interesting object near the end of a unit to encourage students to further apply their new knowledge and ideas.

Steps:

1. Set up

Ask students to make an observation about an object – it could be an artwork, image, artifact, video clip, excerpt of a text, political cartoon, chart, science object—really anything that can be observed. The image should have some ambiguity to it, is not already known by students, offers many different layers of explanation and possesses a degree of detail that is likely to emerge after extended learning.

Project the image up. Allow students time for silent observation – 1-3 minutes.

2. See (observe/notice)

Ask learners to state what they noticed. Emphasize that you are not looking for interpretation simply what do the students observe. Tell students that an observation is something you could actually put your fingers on within the image/object. You could do a think-pair-share to debrief their observations.

3. Think (interpret, connect, synthesize, analyze)

- Ask learners what they think is going on in the image/object.
- Based on what we are seeing and noticing, what does it make us think about? What kinds of interpretations can we form based on our observations?
- What else is going on here?
- What do you see that makes you say that? – This requires learners to respond with supporting evidence.

4. Wonder (question, research)

Ask learners what they are wondering about based on what they have seen and have been thinking. Separating thinking and wondering may be tricky initially. Suggest to them that wondering is about asking broader questions that push us beyond our interpretations to look at issues and ideas raised by the image and the object.

5. Share the thinking

Students are sharing their thinking at each step in the routine. This allows the class to build on the group's thinking at the previous stage and often results in richer discussions that might be had alone. The teacher can document the thinking at each stage, but it's not always necessary. Wonderings can be written down and posted around the room to encourage ongoing consideration and students can be encouraged to add to the wonderings over time as new ideas occur.

Compass Points

Considering the idea, question, or proposition before you:

E = Excitements

What excites you about the 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 of 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?

Purpose: What kind of thinking does this routine encourage?

Compass Points enable groups of learners to consider an idea or proposition from different angles. By exploring issues from multiple perspectives and identifying areas where more information is needed, individuals can avoid rushing into judgment.

Application: When and where can it be used?

This routine works well when the topic, idea, or proposition is one form which there are dilemmas or dissenting points of view or when some people are so attached to their perspectives it is difficult for them to consider the idea more broadly without some sort of structure to assist them in doing this.

Steps:

1. Set up

Frame the issue, event or proposition and present it to the learners. If the proposition is new, allow for questions of clarification to ensure that learners have some sense of the topic. This can be done as a class, with groups, or individually. To document you could use four sheets of white paper, place the points on the whiteboard/smart board, or on an individual sheet of paper.

2. Identify excitements

Ask, "What excites you about this idea or proposition? What's the upside?" Allow time for learners to think, write, and post their ideas on the E chart or section. Follow this process with the other three points.

3. Share the thinking

Invite learners to review the comments made by others. This can be done at each juncture or at the end. However, often more powerful “needs” emerge if people are aware of the group’s excitements and worries. The same can happen with the “steps, stances, or suggestions.” Invite comments on the themes that emerged in each category.

ZOOM In

Look closely at the small bit of image that is revealed

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

Reveal more of the image

- What new things do you see?
- How does this change your hypothesis or interpretation? Has the new information answered any of your wonders or changed your previous ideas?
- What new things are you wondering about?

Repeat the reveal and questioning until the whole image has been revealed

- What lingering questions remain for you about this image?

Purpose: What kind of thinking does this routine encourage?

This routine focuses on looking closely and making interpretations. The difference with this routine is that it reveals only portions of an image over time. The idea that our interpretations in history, as well as in other disciplines, are tentative and limited by the information we have at hand is a metaphor about learning embedded in the routine itself. The routine asks learners to observe a portion of an image closely and develop a hypothesis. As new information is presented the learner is asked to again look closely and then reassess their initial interpretation in light of the new information.

Application: When and where can it be used?

When selecting content for this routine, keep in mind that only sections of the image will be visible until the end. This means that you might be able to use a familiar image depending on which sections you reveal initially. Once you have chosen an image, consider what information will be conveyed by each part of the image you choose to reveal at each stage.

Steps:

1. Set up

Display a section of the selected image and invite learners to look attentively at it, allowing time for careful observation. You might want to begin with observations before moving to invite learners to develop hypotheses or interpretations based on what they have seen. This could be done individually, in groups, or as a class.

2. Reveal

Uncover more of the image and again ask learners to identify anything new they are seeing and consider how this new information affects their previous interpretations and hypotheses.

3. Repeat

Continue the process of revealing and interpreting until the entire image has been revealed and invite learners to state any lingering question they have.

4. Share the thinking

Discuss the process with learners. Ask them to reflect on how their interpretation shifted and changed over time. How did seeing more of the image influence their thinking? What parts were particularly rich in information and had a dramatic effect? Which were more ambiguous? What would the effect have been if the reveals had happened in a different order?

Headlines

- Think of the big ideas and important themes in what you have been learning
- Write a headline for this topic or issue that summarizes and captures a key aspect that you feel is significant and important.

Purpose: What kind of thinking does this routine encourage?

This routine encourages students to synthesize ideas, impressions or key ideas about the topic being explored.

Application: When and where can it be used?

Use this routine when you want students to reflect and synthesize, identifying the essence or core of a situation or learning experience. If students aren't able to grasp the heart of what they are learning, they will find it difficult to make meaningful connections to these ideas in future learning.

Steps:

1. Set up

After students have had some learning experiences, have them consider what they think some of the core ideas in what they've been learning seem to be. They should reflect and synthesize as they identify the essence or core of a situation or learning experience.

2. Write a headline

Ask the students to write a "headline for this topic or issue that captures an important aspect or core idea that we would want to remember." This can be done individually or with partners, whatever the teacher desires.

3. Share the thinking

Once students have an opportunity to draft a headline, have them share the headlines with other students around them. It is important that students not only share their headlines, but also the story and reasoning behind their choice, unpacking the headline for others. This goal is to create a forum in which different perspectives and nuances surface.

4. Invite further sharing

Once pairs or small groups have shared their headlines and tell the stories behind them, you can create a class collection of headlines that document the group's thinking. Working with a collection of headlines, you might encourage your class to search for common themes or elements among the headlines. Taking notice of big ideas is critical to understanding. Documenting the group's headlines in some way helps students to consider a topic from multiple angles and creates a rich mental picture of what is important to keep front and center in their thinking.

Pay attention to each student's headline as well as the reasoning behind his or her choice. Has the student seen or noticed an idea that could have otherwise been missed? Has this student crafted a headline that highlights an issue that is worth the whole group's attention? Does this

headline do its job in synthesizing and distilling the event or does it focus on tangential elements? What does this headline reveal about the students' current understanding of the topic? Does the student need further clarification about the big idea?

Thinking Routines Matrix

from the upcoming book *Making Thinking Visible* by Ritchhart, Morrison & Church (Spring 2011)

Routine	Key Thinking Moves	Notes
<i>Routines for INTRODUCING & EXPLORING IDEAS</i>		
See-Think-Wonder	Description, Interpretation & Wondering	Good with ambiguous or complex visual stimuli
Zoom In	Description, Inference, & Interpretation	Variation of STW involving using only portions of an image
Think-Puzzle-Explore	Activating prior knowledge, wondering, planning	Good at the beginning of a unit to direct personal or group inquiry and uncover current understandings as well as misconceptions
Chalk Talk	Uncovers prior knowledge and ideas, questioning	Open-ended discussion on paper. Ensures all voices are heard, gives thinking time.
321 Bridge	Activates prior knowledge, questioning, distilling, & connection making through metaphors	Works well when students have prior knowledge but instruction will move it in a new direction. Can be done over extended time like the course of a unit.
Compass Points	Decision making and planning, uncovers personal reactions	Solicits the group's ideas and reactions to a proposal, plan or possible decision.
Explanation Game	Observing details and building explanations	Variations of STW that focuses on identifying parts and explaining them in order to build up an understanding of the whole from its parts and their purposes
<i>Routines for SYNTHESIZING & ORGANIZING IDEAS</i>		
Headlines	Summarizing, Capturing the heart	Quick summaries of the big ideas or what stands out
CSI: Color, Symbol, Image	Capturing the heart through metaphors	Non-verbal routine that forces visual connections
Generate-Sort-Connect	Uncovering and organizing prior knowledge to identify connections	Highlights the thinking steps of making an effective concept map that both organizes and reveals one's thinking
Elaborate: Concept Maps	Connection making, identify new ideas, raising questions	Key synthesis moves for dealing with new information in whatever form it might be presented: books, lecture, movie, etc.
Connect-Extend-Challenge	Connection making, identifying key concept, raising questions, and considering implications	A text-based routine that helps identifies key points of complex text for discussion. Demands a rich text or book.
The 4 C's	A protocol for focused discussion	Can be combined with other routines and used to prompt reflection and discussion
Micro Lab	Reflection and metacognition	Used to help learners reflect on how their thinking has shifted and changed over time.
I used to think		
<i>Routines for DIGGING DEEPER INTO IDEAS</i>		
What makes you say that?	Reasoning with evidence	A question that teachers can weave into discussion to push students to give evidence for their assertions.
Circle Viewpoints	Perspective taking	Identification of perspectives around an issue or problem.
Step Inside	Perspective taking	Stepping into a position and talking or writing from that perspective to gain a deeper understanding of it.
Red Light, Yellow Light	Monitoring, identification of bias, raising questions	Used to identify possible errors in reasoning, over reaching by authors, or areas that need to be questioned.
Claim Support Question	Identifying generalizations and theories, reasoning with evidence, counter arguments	Can be used with text or as a basic structure for mathematical and scientific thinking.
Tug of War	Perspective taking, reasoning, identifying complexities	Identifying and building both sides of an argument or tension/dilemma
Word-Phrase-Sentence	Summarizing and distilling	Text-based protocol aimed at eliciting what a reader found important or worthwhile. Used with discussion to look at themes and implications.

Visible and Artful Thinking Resources

Project Zero - Harvard Graduate School of Education

<http://projectzero.gse.harvard.edu/>

<http://www.pzartfulthinking.org/index.php>

<http://www.visiblethinkingpz.org/>

Making Thinking Visible

Ron Ritchhart, Mark Church, Karin Morrison

