

# 16 routines and activities compiled by



...that push students to do the “heavy lifting” — think critically, reflect, and justify their thinking, creatively & collaboratively.

Compass Points  
See Think Wonder  
Think Pair Share  
Think Puzzle Explore  
I Used to Think.. But Now I Think...  
What Makes You Say That?  
3-2-1 Bridge  
Connect Extend Challenge  
Color, Symbol, Images  
The Explanation Game  
Circle of Viewpoints  
Tug of War  
Generate, Sort, Collect, Elaborate  
Headlines  
Peel the Fruit  
Question Starts

The Visible Thinking Project is one of the organizations working at compiling and testing routines, activities, and methods for daily instruction aimed at Deeper Learning and in particular, metacognition. Their specific mission and more of their resources can be found at: <http://www.visiblethinkingpz.org/>

## COMPASS POINTS

### *A routine for examining propositions*

1. E = Excited  
What excites you about this idea or proposition? What's the upside?
2. W = Worrisome  
What do you find worrisome about this idea or proposition? What's the downside?
3. N = Need to Know  
What else do you need to know or find out about this idea or proposition? What additional information would help you to evaluate things?
4. S = Stance or Suggestion for Moving Forward  
What is your current stance or opinion on the idea or proposition? How might you move forward in your evaluation of this idea or proposition?

#### **Purpose: Why use this routine?**

To help students flesh out an idea or proposition and eventually evaluate it.

#### **Application: When and where can I use this routine?**

This routine works well to explore various sides and facets of a proposition or idea prior to taking a stand or expressing an opinion on it. For instance, the school may be considering the idea of a dress code, a teacher might present the class with idea of altering the room arrangement, a character in a book might be confronted with making a choice, a politician might be putting forth a new way of structuring taxes, and so on.

#### **Launch: What are some tips for starting and using this routine?**

The routine needs to be modeled with the whole group initially with responses recorded for the entire class to see. This enables students to build on each other's ideas. You might record responses using the directions of a compass to provide a visual anchor. That is, draw a compass in the center of the board and then record responses corresponding the appropriate direction: E, W, N, or S. It is generally easiest for students to begin with what is exciting or positive about the idea or proposition and then move to worrisome and need to know. Students might be asked to write down their individual stance or suggestion for moving forward after the initial group discussion.

You can also ask students to make an initial judgment or evaluation of the idea or proposition before doing the compass points and then ask them how their thinking has changed after discussion using the compass points routine.

## SEE / THINK / WONDER

*A routine for exploring works of art and other interesting things*

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

### **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.

### **Launch: What are some tips for starting and using this routine?**

Ask students to make an observation about an object – it could be an artwork, image, artifact or topic – and follow up with what they think might be going on or what they think this observation might be. Encourage students to back up their interpretation with reasons. Ask students to think about what this makes them wonder about the object or topic.

The routine works best when a student responds by using the three stems together at the same time, i.e., “*I see...*, *I think...*, *I wonder ....* “ However, you may find that students begin by using one stem at a time, and that you need to scaffold each response with a follow up question for the next stem.

The routine works well in a group discussion but in some cases you may want to ask students to try the routine individually on paper or in their heads before sharing out as a class. Student responses to the routine can be written down and recorded so that a class chart of observations, interpretations and wonderings are listed for all to see and return to during the course of study.

## THINK PAIR SHARE ROUTINE

*A routine for active reasoning and explanation*

Think Pair Share involves posing a question to students, asking them to take a few minutes of thinking time and then turning to a nearby student to share their thoughts.

### **Purpose: What kind of thinking does this routine encourage?**

This routine encourages students to think about something, such as a problem, question or topic, and then articulate their thoughts. The Think Pair Share routine promotes understanding through active reasoning and explanation. Because students are listening to and sharing ideas, Think Pair Share encourages students to understand multiple perspectives.

### **Application: When and where can it be used?**

Think Pair Share can be applied at any given moment in the classroom. For example, when approaching a solution, solving a math problem, before a science experiment, or after reading a passage or chapter of a book you may ask students to take a moment to think about a particular question or issue and then turn to their neighbor and share their thoughts. Sharing can also be done in small groups. Some times you will want to have pairs or groups summarize their ideas for the whole class.

### **Launch: What are some tips for starting and using the routine?**

When first introducing the routine, teachers may want to scaffold students' paired conversations by reminding them to take turns, listen carefully and ask questions of one another. One way to ensure that students listen to each other is to tell students that you will be calling on individuals to explain their partners thinking, as opposed to telling their own thoughts.

Encourage students to make their thinking visible by asking them to write or draw their ideas before and/or after sharing. Journals can also be useful. Student pairs can report one another's thoughts to the class and a list of ideas can be created in the classroom.

This routine is adapted from Frank Lyman: Lyman, F. T. (1981). The Responsive Classroom Discussion: The Inclusion of All Students. In A. Anderson (Ed.), *Mainstreaming Digest* (pp. 109-113). College Park: University of Maryland Press.

## THINK / PUZZLE / EXPLORE

*A routine that sets the stage for deeper inquiry*

1. What do you think you know about this topic?
2. What questions or puzzles do you have?
3. What does the topic make you want to explore ?

### **Purpose: What kind of thinking does this routine encourage?**

This routine activates prior knowledge, generates ideas and curiosity and sets the stage for deeper inquiry.

### **Application: When and where can it be used?**

This routine works especially well when introducing a new topic, concept or theme in the classroom. It helps students take stock of what they already know and then pushes students to identify puzzling questions or areas of interest to pursue. Teachers can get a good sense of where students are on a conceptual level and, by returning to the routine over the course of study, they can identify development and progress. The third question is useful in helping students lay the ground work for independent inquiry.

### **Launch: What are some tips for starting and using this routine?**

With the introduction of new topic—for example, earth, leaves, fractions, Buddhism—the class can engage in the routine together to create a group list of ideas. Between each phase of the routine, that is with each question, adequate time needs to be given for individuals to think and identify their ideas. You may even want to have students write down their individual ideas before sharing them out as a class. In some cases, you may want to have students carry out the routine individually on paper or in their heads before working on a new area.

Keep a visible record of students' ideas. If you are working in a group, ask students to share some of their thoughts and collect a broad list of ideas about the topic on chart paper. Or students can write their individual responses on post-it notes and later add them to a class list of ideas.

Note that it is common for students to have misconceptions at this point—include them on the list so all ideas are available for consideration after further study. Students may at first list seemingly simplistic ideas and questions. Include these on the whole class list but push students to think about things that are truly puzzling or interesting to them.

## I USED TO THINK..., BUT NOW I THINK...

*A routine for reflecting on how and why our thinking has changed*

Remind students of the topic you want them to consider. It could be the ideal itself—fairness, truth, understanding, or creativity—or it could be the unit you are studying. Have students write a response using each of the sentence stems:

- I used to think....
- But now, I think...

### **Purpose: What kind of thinking does this routine encourage?**

This routine helps students to reflect on their thinking about a topic or issue and explore how and why that thinking has changed. It can be useful in consolidating new learning as students identify their new understandings, opinions, and beliefs. By examining and explaining how and why their thinking has changed, students are developing their reasoning abilities and recognizing cause and effect relationships.

### **Application: When and where can it be used?**

This routine can be used whenever students' initial thoughts, opinions, or beliefs are likely to have changed as a result of instruction or experience. For instance, after reading new information, watching a film, listening to a speaker, experiencing something new, having a class discussion, at the end of a unit of study, and so on.

### **Launch: What are some tips for starting and using this routine?**

Explain to students that the purpose of this activity is to help them reflect on their thinking about the topic and to identify how their ideas have changed over time. For instance:

*When we began this study of \_\_\_\_\_, you all had some initial ideas about it and what it was all about. In just a few sentences, I want to write what it is that you used to think about \_\_\_\_\_. Take a minute to think back and then write down your response to "I used to think..."*

*Now, I want you to think about how your ideas about \_\_\_\_\_ have changed as a result of what we've been studying/doing/discussing. Again in just a few sentences write down what you now think about \_\_\_\_\_. Start your sentences with, "But now, I think..."*

Have students share and explain their shifts in thinking. Initially it is good to do this as a whole group so that you can probe students' thinking and push them to explain. Once students become accustomed to explaining their thinking, students can share with one another in small groups or pairs.

## WHAT MAKES YOU SAY THAT?

*Interpretation with Justification Routine*

1. What's going on?
2. What do you see that makes you say that?

### **Purpose: What kind of thinking does this routine encourage?**

This routine helps students describe what they see or know and asks them to build explanations. It promotes evidential reasoning (evidence-based reasoning) and because it invites students to share their interpretations, it encourages students to understand alternatives and multiple perspectives.

### **Application: When and where can it be used?**

This is a thinking routine that asks students to describe something, such as an object or concept, and then support their interpretation with evidence. Because the basic questions in this routine are flexible, it is useful when looking at objects such as works of art or historical artifacts, but it can also be used to explore a poem, make scientific observations and hypothesis, or investigate more conceptual ideas (i.e., democracy). The routine can be adapted for use with almost any subject and may also be useful for gathering information on students' general concepts when introducing a new topic.

### **Launch: What are some tips for starting and using this routine?**

In most cases, the routine takes the shape of a whole class or group conversation around an object or topic, but can also be used in small groups or by individuals. When first introducing the routine, the teacher may scaffold students by continually asking the follow-up questions after a student gives an interpretation. Over time students may begin to automatically support their interpretations with evidence with out even being asked, and eventually students will begin to internalize the routine.

The two core questions for this routine can be varied in a number of ways depending on the context: What do you know? What do you see or know that makes you say that? Sometimes you may want to precede students' interpretation by using a question of description: What do you see? or What do you know?

When using this routine in a group conversation it may be necessary to think of alternative forms of documentation that do not interfere with the flow of the discussion. One option is to record class discussions using video or audio. Listening and noting students' use of language of thinking can help you see their development. Students words and language can serve as a form of documentation that helps create a rubric for what makes a good interpretation or for what constitutes good reasoning.

Another option is to make a chart or keep an ongoing list of explanations posted in the classroom. As interpretations develop, note changes and have further discussion about these new explanations. These lists can also invite further inquiry and searches for evidence. Other options for both group and individual work include students documenting their own interpretations through sketches, drawings, models and writing, all of which can be displayed and revisited in the classroom.

## 3-2-1 BRIDGE

*A routine for activating prior knowledge and making connections*

Your initial responses to the topic	Your new responses to the topic
3 Thoughts/Ideas	3 Thoughts/Ideas
2 Questions	2 Questions
1 Analogy	1 Analogy

Bridge:  
Explain how your new responses connect to your initial responses?

**Purpose: What kind of thinking does this routine encourage?**

This routine asks students to uncover their initial thoughts, ideas, questions and understandings about a topic and then to connect these to new thinking about the topic after they have received some instruction.

**Application: When and where can it be used?**

This routine can be used when students are developing understanding of a concept over time. It may be a concept that they know a lot about in one context but instruction will focus their learning in a new direction, or it may be a concept about which students have only informal knowledge. Whenever new information is gained, bridges can be built between new ideas and prior understanding. The focus is on understanding and connecting one's thinking, rather than pushing it toward a specific outcome.

**Launch: What are some tips for starting and using this routine?**

This routine can be introduced by having students do an initial 3, 2, 1 individually on paper. For instance, if the topic is "democracy," then students would write down 3 thoughts, 2 questions, and 1 analogy. Students might then read an article, watch a video, or engage in an activity having to do with democracy. Provocative experiences that push students thinking in new directions are best. After the experience, students complete another 3,2,1. Students then share their initial and new thinking, explaining to their partners how and why their thinking shifted. Make it clear to students that their initial thinking is not right or wrong, it is just a starting point. New experiences take our thinking in new directions.



## CONNECT / EXTEND / CHALLENGE

*A routine for connecting new ideas to prior knowledge*

<b>CONNECT:</b>	How are the ideas and information presented <b>CONNECTED</b> to what you already knew?
<b>EXTEND:</b>	What new ideas did you get that <b>EXTENDED</b> or pushed your thinking in new directions?
<b>CHALLENGE:</b>	What is still <b>CHALLENGING</b> or confusing for you to get your mind around? What questions, wonderings or puzzles do you now have?

### **Purpose: What kind of thinking does this routine encourage?**

The routine helps students make connections between new ideas and prior knowledge. It also encourages them to take stock of ongoing questions, puzzles and difficulties as they reflect on what they are learning.

### **Application: When and where can it be used?**

The natural place to use the Connect-Extend-Challenge routine is after students have learned something new. It doesn't matter how *much* they have learned – it can be a lesson's worth, or a unit's worth. The routine is broadly applicable: Use it after students have explored a work of art, or anything else in the curriculum. Try it as a reflection during a lesson, after a longer project, or when completing a unit of study. Try using it after another routine!

### **Launch: What are some tips for starting and using this routine?**

This routine works well with the whole class, in small groups or individually. Keep a visible record of students' ideas. If you are working in a group, ask students to share some of their thoughts and collect a list of ideas in each of the three categories. Or have students write their individual responses on post-it notes and add them to a class chart. Keep students' visible thinking alive over time: Continually add new ideas to the lists and revisit the ideas and questions on the chart as students' understanding around a topic develops.

## CSI: Colour, Symbol, Image Routine

*A routine for distilling the essence of ideas non-verbally*

As you are reading/listening/watching, make note of things that you find interesting, important, or insightful. When you finish, choose 3 of these items that most stand out for you.

- For one of these, choose a colour that you feel best represents or captures the essence of that idea.
- For another one, choose a symbol that you feel best represents or captures the essence of that idea.
- For the other one, choose an image that you feel best represents or captures the essence of that idea.

With a partner or group first share your colour and then share the item from your reading that it represents. Tell why you choose that colour as a representation of that idea. Repeat the sharing process until every member of the group has shared his or her Colour, Symbol, and Image.

### **Purpose: What kind of thinking does this routine encourage?**

This routine asks students to identify and distill the essence of ideas from reading, watching or listening in non-verbal ways by using a colour, symbol, or image to represent the ideas.

### **Application: When and where can it be used?**

This routine can be used to enhance comprehension of reading, watching or listening. It can also be used as a reflection on previous events or learnings. It is helpful if students have had some previous experience with highlighting texts for important ideas, connections, or events. The synthesis happens as students select a colour, symbol, and image to represent three important ideas. This routine also facilitates the discussion of a text or event as students share their colours, symbols, and images.

### **Launch? What are some tips for starting and using this routine?**

After the class has read a text, you might ask the class to identify some of the interesting, important, or insightful ideas from the text and list these on the board. Write CSI: Colour, Symbol, Image on the board. Select one of the ideas the class has identified. Ask students what colour might they use to represent the essence of that idea? What colour captures something about that idea, maybe it is the mood or tone. Select another idea and ask the class what symbol they could use to represent that idea. *You might define a symbol as a simple line representation or uncomplicated drawing, such as two crossed lines to denote an intersection of ideas, or a circle to represent wholeness or completeness.* Then pick another idea from the list and ask students what image they might use to represent that idea. *You might define an image as a visual image or metaphor that is more complex and fully developed than just a symbol.*

## THE EXPLANATION GAME

*A routine for exploring causal understanding*

The routine focuses first on identifying something interesting about an object or idea:

I notice that....

And then following that observation with the question:

Why is it that way? or Why did it happen that way?

### **Purpose: What kind of thinking does this routine encourage?**

This is a routine for understanding why something is the way it is. This routine can get at either causal explanation or explanation in terms of purposes or both.

### **Application: When and where can it be used?**

You can apply it to almost anything: a pencil, cell phones, forms of government, historical documents, and events. Students can work in pairs or groups of larger size, even a whole class. The explanation game can also be used solo. The first time the routine is used, the teacher may need to take an active role in scaffolding the conversation and modeling how to ask questions of explanation and clarification if others. Over time, students can begin to emulate the conversational moves and questioning they have seen modeled.

### **Launch: What are some tips for starting and using this routine?**

Begin with something “on the table”—an object like a cup or a compass, a document like a poem, a picture, an historical event, a scientific theory, etc. The first person (this might be the teacher initially) points out an interesting feature of the object: “I notice that.... That’s interesting. Why is it that way?” or “Why did it happen that way?” (or some similar why question). The other people in the group try to answer the question or at least to propose possible explanations and reasons. As these students share their ideas, the person asking the original question follows up by asking, “What makes you think so?” The group works together to build explanations rather than merely deferring to an outside source, the teacher or a textbook, to provide an answer.

Student questions and explanations become visible to the class as they are shared. Responses to the routine also can be written down and recorded so that there is a class list of evolving ideas. A few key issues or puzzles might then be chosen for further investigations. A conversation could also be recorded as a chart with four columns representing the key structures of the conversation: 1) the *Observation* that is initially made, 2) the *Question* that comes out of that observation, 3) the various *Explanations/Hypotheses* that the rest of group puts forth, 4) the *Reasons/Justifications* that are given in support of the explanations.

## CIRCLE OF VIEWPOINTS ROUTINE

*A routine for exploring diverse perspectives*

Brainstorm a list of different perspectives and then use this script skeleton to explore each one:

1. I AM THINKING OF ...*the topic* ... FROM THE POINT OF VIEW OF...*the viewpoint you've chosen*
2. I THINK...*describe the topic from your viewpoint. Be an actor--take on the character of your viewpoint*
3. A QUESTION I HAVE FROM THIS VIEWPOINT IS...*ask a question from this viewpoint*

WRAP UP: *What new ideas do you have about the topic that you didn't have before? What new questions do you have?*

### **Purpose: What kind of thinking does this routine encourage?**

This routine helps students consider different and diverse perspectives involved in and around a topic. Understanding that people may think and feel differently about things is a key aspect of the Fairness Ideal.

### **Application: When and where can it be used?**

This routine can be used at the beginning of a unit of study to help students brainstorm new perspectives about a topic, and imagine different characters, themes and questions connected to it. It can be used after reading a book or chapter. Provocative topics and issues are encouraged and the routine also works especially well when students are having a hard time seeing other perspectives or when things seem black and white. The routine can be used to open discussions about dilemmas and other controversial issues.

### **Launch: What are some tips for starting and using this routine?**

After identifying a topic, ask students to brainstorm various viewpoints about this topic. This can be done solo, or as a class, but make sure to give the initial brainstorm enough time for students to really stretch and explore diverse ideas. If students need help thinking of different viewpoints, try using the following prompts:

- How does it look from different points in space and different points in time?
- Who (and what) is affected by it?
- Who is involved?
- Who might care?

After the brainstorm, ask each student to choose one of these viewpoints. Give them time to prepare to speak about the topic from that perspective and to embody the viewpoint using the script skeleton to structure what he or she says.

Once students have prepared their “characters”, the class should be ready to go around the circle and act out their various perspectives. Taking turns, ask students to speak briefly about their chosen viewpoint using the script skeleton. Invite them to stand up and use gestures and movement if necessary. The discussion at this point might move fairly quickly, capitalizing on the immediacy of the experience as each student goes through the script and presents a perspective. The array of responses will hopefully be broad and distinct, as each student should strive to produce a unique viewpoint. If some students choose the same character, encourage them to perform differently. For example, if several students choose the viewpoint of an explorer, one may be trying to seek out wealth through trade, another explorer might be adventurous or want to become famous. Ask them to raise different questions in order to elaborate their viewpoints.

Viewpoints connect to the idea of physical perspective taking and you may notice that your students interpret this literally at first by naming and describing what their characters *see*. While it is fine to help students get started with concrete examples, try to move your students to consider *thoughts and feelings* of characters, rather than describing a scene or object.

As students perform their viewpoint in the circle, their ideas can be recorded or written on the board so that a class list of perspectives is created. The last question of the routine asks students to think of a question they might have from their chosen viewpoint. Collect these questions or ask students to write them down and answer them as they think more about the topic as it is studied in class. Once everyone in the circle has spoken, the teacher can lead a discussion by asking: “What new ideas do you have about the topic that you didn’t have before?” and “What new questions do you have?”

## TUG OF WAR

*A routine for exploring the complexity of fairness dilemmas*

1. Present a fairness dilemma.
2. Identify the factors that “pull” at each side of the dilemma. These are the two sides of the tug of war.
3. Ask students to think of “tugs”, or reasons why they support a certain side of the dilemma. Ask them to try to think of reasons on the other side of the dilemma as well.
4. Generate “what if?” questions to explore the topic further.

### **Purpose: What kind of thinking does this routine encourage?**

This routine builds on children’s familiarity with the game of tug of war to help them understand the complex forces that “tug” at either side of a fairness dilemma. It encourages students to reason carefully about the “pull” of various factors that are relevant to a dilemma of fairness. It also helps them appreciate the deeper complexity of fairness situations that can appear black and white on the surface.

### **Application: When and where can it be used?**

This routine can be used in any situation where the fairness dilemma seems to have two obvious and contrasting ways of being resolved. Dilemmas can come from school subjects or everyday life: testing of medicine on animals, adding people to a game once it has started, censoring a book in a library, and so on.

### **Launch: What are some tips for starting and using this routine?**

The routine works well as a whole class activity. Present the dilemma to the class. Draw or place a rope with the two ends representing the opposing sides of the dilemma and ask students to think about what side of the dilemma they would be on and why. Students can write their justifications on post-it notes. Encourage students to think of other reasons or “tugs” for both sides of the dilemma, and then have students add their post-it notes to the rope. Stand back and ask students to generate “What if’s:” questions, issues, factors or concerns that might need to be explored further to resolve the issue. Write and post these above the rope. Finish the lesson by asking students to reflect on the activity. What new ideas they have about the dilemma? Do they still feel the same way about it? Have they made up minds or changed their minds?

The display of the tugs and What if’s? on the rope helps to make students’ thinking visible. Most importantly, their ideas are displayed in a way that shows their interconnectedness. The collaborative thinking process of the group as a whole is represented through the “action” of the tug of war. This is a key point about making thinking visible: It shows the dynamic interaction of people’s thoughts in a context of a shared inquiry. Documenting thinking and making it visible in the classroom can facilitate this interaction in order to make the inquiry richer.

## **Generate, Sort, Connect, Elaborate: Concept Maps**

*A routine for organizing one's understanding of a topic through concept mapping*

Select a topic, concept, or issue for which you want to map your understanding.

- Generate a list of ideas and initial thoughts that come to mind when you think about this particular topic/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 ideas that have something in common. Explain and write in a short sentence how the ideas are connected.
- Elaborate on any of the ideas/thoughts you have written so far by adding new ideas that expand, extend, or add to your initial ideas.

Continue generating, connecting, and elaborating new ideas until you feel you have a good representation of your understanding.

### **Purpose: What kind of thinking does this routine encourage?**

This routine activates prior knowledge and helps to generate ideas about a topic. It also facilitates making connections among ideas. Concept maps help to uncover students' mental models of a topic in a non-linear way.

### **Application: When and where can it be used?**

This routine can be useful as a pre-assessment before the beginning of a unit of study if students already have a lot of background information about the topic. Conversely, it can also be useful as a post or ongoing assessment to see what students are remembering and how they are connecting ideas. Individual maps can be used as the basis for construction of a whole classroom map. Maps can also be done progressively, with students adding to their maps each week of the unit.

### **Launch? What are some tips for starting and using this routine?**

Depending on how much familiarity students have with concept maps, you may need to demonstrate making a concept map using this routine with the whole class. However, if students are relatively familiar with the idea of concept maps, you can launch right into the routine explaining that students will be making concept maps but in a structured way. Give time for students to complete each step of the routine before moving on to the next step. It isn't necessary that students generate an exhaustive list of all their ideas initially, but make sure they have time to generate a rich and varied list before moving on. Tell students that at any point they can add new ideas to their list and incorporate them into their map. If you are adding to a map over time, you might want to have students use a different color pencil each time they make additions. Explaining and discussing maps with partners helps students to consolidate their thinking and gain other perspectives.

## HEADLINES ROUTINE

*A routine for capturing essence*

This routine draws on the idea of newspaper-type headlines as a vehicle for summing up and capturing the essence of an event, idea, concept, topic, etc. The routine asks a core question:

1. If you were to write a headline for this topic or issue right now that captured the most important aspect that should be remembered, what would that headline be?

A second question involves probing how students' ideas of what is most important and central to the topic being explored have changed over time:

2. How has your headline changed based on today's discussion? How does it differ from what you would have said yesterday?

### **Purpose: What kind of thinking does this routine encourage?**

This routine helps students capture the core or heart of the matter being studied or discussed. It also can involve them in summing things up and coming to some tentative conclusions.

### **Application: When and where can it be used?**

This routine works especially well at the end of a class discussion or session in which students have explored a topic and gathered a fair amount of new information or opinions about it.

### **Launch: What are some tips for starting and using this routine?**

The routine can be used quite effectively with think-pair-share. For example, at the end of a class the teachers can ask the class, "Think about all that we have been talking about today in class. If you were to write a headline for this topic or issue right now that captured the most important aspect that should be remembered, what would that headline be?" Next, the teacher tells students, "Share your headline with your neighbor." The teacher might close the class by asking, "Who heard a headline from someone else that they thought was particularly good at getting to the core of things?"

Student responses to the routine can be written down and recorded so that a class list of headlines is created. These could be reviewed and updated from time to time as the class learns more about the topic. The follow-up question, "how has your headline changed or how does it differ from what you would have said?" can be used to help students reflect on changes in their thinking.



# Understanding Map

## 'Peeling the Fruit' – A Map for Tracking and Guiding Understanding

1. Put some version of the map up in a convenient location or give learners copies. See example below and notes about different ways of using the map.
2. Briefly state that the group will be tracking progress and planning with the map from time to time. Note how the map uses the metaphor of 'peeling the fruit', getting familiar with the surface of something, seeking puzzles and mysteries to investigate, and pursuing these in various ways to arrive at core understandings.
3. Refer to the map to choose next steps and mark progress from time to time during the exploration of a topic (no need to do everything every time). Use it as a way of thinking about what routines to use or simply what kind of conversation or other activity to have.
4. When the map is used collectively by a class, you may want to invite students to put up Post-its on the map over time to mark insights associated with any of the map elements.

### **Purpose: Why use this map?**

We often want to develop learners' understanding of a complex topic over days or weeks. This map can help. It's not a routine but a way of planning and tracking over time the exploration of a topic. It can help in choosing good routines too.

### **Application: When and where can I use this map?**

Whenever there's a topic that calls for a broad and rich understanding and learners have enough time to look at it in different ways – anything from a single long lesson to several lessons or a unit. You can use it with students collectively, to help them maintain a bird's eye view of progress through a topic and to make with them good choices about what to do next. You can use it yourself, to plan topics and to track progress. You can also give copies to students for their individual self-management in pursuing a general class topic or individual projects.

### **Launch: What are some tips for starting and using this thinking map?**

Explain that the map is for tracking and guiding the exploration of the topic. Explain the metaphor briefly. Invite learners to help chart progress by using the map.

You can create a giant version of the map to put on the wall of a classroom (see diagram below), or just put labels up for the categories if it's easier to organize on the wall, or personalize the process in some other way. If you're tracking two or three topics at the same time or multiple groups you might: have two or three wall maps, color code paths on a single map, give learners page-size copies to track their own progress, or invent something else. Whatever works! The main idea is to make visible the developing understanding to mark progress and choose next steps.

It usually makes sense to start with the 'skin' and go to 'getting under the skin' with mysteries and then on from there to 'substance' and toward the 'core'. You need not use all of the 'substance' approaches – whatever fits – and there's no fixed order. You can go back to something and add at any time of course!

## QUESTION STARTS

*A routine for creating thought-provoking questions*

1. Brainstorm a list of at least 12 questions about the topic, concept or object. Use these question-starts to help you think of interesting questions:

*Why...?*

*What are the reasons...?*

*What if...?*

*What is the purpose of...?*

*How would it be different if... ?*

*Suppose that...?*

*What if we knew...?*

*What would change if...?*

2. Review the brainstormed list and star the questions that seem most interesting. Then, select one or more of the starred questions to discuss for a few moments.
3. Reflect: What new ideas do you have about the topic, concept or object that you didn't have before?

### **Purpose: What kind of thinking does this routine encourage?**

This routine provides students with the opportunity to practice developing good questions that provoke thinking and inquiry into a topic. It also helps students brainstorm lots of different *kinds* of questions about a topic. The purpose of asking deep and interesting questions is to get at the complexity and depth of a topic. The purpose of brainstorming varied questions about a topic is to get at the breadth, and multi-dimensionality of a topic.

### **Application: When and where can it be used?**

Use Question Starts to expand and deepen students' thinking, to encourage students' curiosity and increase their motivation to inquire. This routine can be used when you are introducing a new topic to help students get a sense of the breadth of a topic. It can be used when you're in the middle of studying a topic as a way of enlivening students' curiosity. And it can be used when you are near the end of studying a topic, as a way of showing students how the knowledge they have gained about the topic helps them to ask ever more interesting questions. This routine can also be used continuously throughout a topic, to help the class keep a visible, evolving list of questions about the topic that can be added to at anytime.

### **Launch: What are some tips for starting and using the routine?**

Before using Question Starts, you might want to ask students what *they* think makes a good question. Then, when you show the Question Starts, explain that this routine is a tool for asking good questions. Start the routine by providing a topic— Stockholm, a compass, the Equator, good sportsmanship. Ask them to use the Question Starts to generate a list of questions about the topic. Initially, it's best to work together as an entire group. Once students get the hang of the routine, you can have them work in small groups, or even solo. Or mix it up. For example, do step 1 as a whole class, do step 2 in pairs, and step 3 as a whole class again.

After students finish generating questions, you can use the questions they created in a variety of ways: pick one of the questions to investigate further, have a discussion about some of the questions, give students information to read about the topic, ask them to investigate it in other ways, or do nothing further as simply creating the list of questions is worthwhile since it gives students a sense of the breadth of a topic and sparks curiosity about it.

Students' questions can be written down and recorded so that they are listed for all to see. If students are working solo, they can keep their list of questions in a journal, or you can create a "collage" out of students' individual lists and display it on the classroom wall.