

Making Connections Framework

	Activating	Mapping	Assessing	Applying
	<p>We often go into a learning situation knowing only the most basic context. For example the topic of study, the title of the book, the period of history, and so on. We can enhance our connection making in these contexts by first engaging in some or all of the actions in the “Activating” phase.</p> <p>This activation acts as a type of advanced organizer for making connection to the source material to come. Our activation provides a point from which we might make connections.</p>	<p>Our connection making truly begins to take form through the “mapping” phase. Sometimes we are mapping our prior knowledge to new content. Sometimes we are mapping two or more pieces of content to one another.</p>	<p>Take a critical stance toward the connections that have been made in order to both challenge and strengthen them. All with an eye toward advancing one’s understanding of the topic/ideas at hand.</p>	<p>As we improve in our ability to make connections in a specific activity, we begin to find ways of applying our skills into new domains (disciplines). We may begin to see that there are skills and processes that guide our way of thinking in one domain that may provide new insight in another domain.</p>
Key Components	Recalling & Determining Relevance of Ideas & Experiences	Identifying linking structures & features across contexts/forms	Evaluating & Questioning the Strengths & Limits of Connections	Transferring & Extending into Novel Contexts
Forms this takes & various sub-moves involved	<p>(Note: We notice that activating schema, mobilizing prior knowledge and priming are similar. Should these be included under one move?)</p> <p>Activating schema/ Mobilizing prior knowledge</p> <ul style="list-style-type: none"> What knowledge can I recall about the topic? What experiences can I recall about the topic? What personal beliefs or attitudes can I recall about the topic? <p>Priming</p> <ul style="list-style-type: none"> Can I think of any visual images related to this topic? Do I associate the topic with other concepts? 	<p>Finding a similar or comparable case</p> <ul style="list-style-type: none"> Can I find a similar or comparable case? <p>Making an analogy, simile, metaphor</p> <ul style="list-style-type: none"> What is a defining feature of what I am looking at? What else might share this defining feature? Can I identify patterns, trends, or recurring themes, in the deep as well as surface structure? <p>Comparing and contrasting</p> <ul style="list-style-type: none"> How are two items similar? How are two items different? Can I identify a shared surface feature between two concepts? shared structural feature? shared conceptual feature? <p>Sorting and classifying</p> <ul style="list-style-type: none"> In what ways can I sort and 	<p>Considering the scope and quality of connections made</p> <ul style="list-style-type: none"> Are my connections too narrow or broad? Do they hone in on essentials? Do my connections illuminate and help me and others better understand? What assumptions might I be making? <p>Confirming or strengthening prior understandings</p> <ul style="list-style-type: none"> How do my connections confirm what I already know and understand? <p>Considering missed connections</p> <ul style="list-style-type: none"> What features or aspects are left unconnected? Is the lack of connection due to a lack of understanding or because 	<p>Creating insight and understanding from one’s connections</p> <ul style="list-style-type: none"> How do the connections I’m making inform my understanding of this topic? What would happen if I applied this way of thinking to a new discipline? <p>Determining how the thinking, skills or processes can be replicated in new contexts</p> <ul style="list-style-type: none"> Where else might my connections be useful? Example: How does discussion of an author’s perspective in English class affect the way I look at written historical documents? <p>Transferring disciplinary thinking and practices learned in one discipline and</p>

	<p>Perspective taking</p> <ul style="list-style-type: none"> • Can I take a different perspective on this topic? <p>Determining likely relevance and accuracy of recalled information</p> <ul style="list-style-type: none"> • Is my recalled knowledge relevant? Is it accurate? 	<p>classify similarities? differences? (See strategies for examples)</p> <p>Representing features in an alternative form (i.e. “physicalizing into a different form”)</p> <ul style="list-style-type: none"> • Can I capture and express the essential features? (See strategies for examples) <p>Connecting unlike things</p> <ul style="list-style-type: none"> • Can I make a connection between two seemingly unrelated things? Example: Can I make a connection between food prices and gas prices? As gas prices go up, transport costs go up, causing an increase in food prices. <p>Identifying similarities and differences across disciplinary practices</p> <ul style="list-style-type: none"> • How are disciplinary practices similar? How are they different? Example: How would I compare a scientist’s hypothesis to the way a historian creates a thesis using available evidence? <p>Associating information with meaning</p> <ul style="list-style-type: none"> • Can I identify important content and ideas? • Can I create a meaningful visual of the content and ideas? • Can I create a narrative that links the content and ideas? (See strategies for examples) <p>Identifying the sequential and/or influential nature of ideas, practices, events to understand how one leads to the other.</p> <ul style="list-style-type: none"> • Is there a reason for why it is the way it is? • Can I identify any changes over time? 	<p>no significant connection exists?</p> <p>Identifying the limitations of a connection or metaphor</p> <ul style="list-style-type: none"> • Where does the metaphor not work? How is the comparison or connection not apt? • Are there significant holes and gaps in my connection? • Are there other features that can be connected? • How might someone disagree or challenge my connection of metaphor? <p>Reflection on process and outcomes</p> <ul style="list-style-type: none"> • How were my connections triggered, formed and revised? • Can I explain my understanding of my newly connected ideas? <p>Revising schemas</p> <ul style="list-style-type: none"> • In what ways has my understanding changed? • What did I used to believe and what do I believe now? • What did I used to know, and what do I know now? 	<p>applying to another</p> <ul style="list-style-type: none"> • Can I apply one disciplinary practice (e.g., sorting, interpreting, hypothesizing, etc.) to another? Example: How might I use evidence to prove my science experiment in the same way I use text from a novel to prove my point?
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<p>Questions that encourage the thinking in different contexts</p>	<p>General</p> <ul style="list-style-type: none"> • In what ways does this look or sound like something you've seen or heard before? • Think back to when you or someone you know well had a similar experience. • What does this remind you of in your life (family, friends, holidays, vacations, things you have seen, feelings you've had, a place you have been)? • Has something like this ever happened to you? • How does this relate to your life? • What were your feelings when you read/heard this? • What does this remind you of in the world (things from TV/radio/news, something you've studied before, current/historical events)? • What's triggering this thought? Can you remember what you heard or said that makes you think this? • How might someone else's experience be different from mine? • How might my experience have played out differently? 	<p>General</p> <ul style="list-style-type: none"> • How are these two ideas dissimilar? What makes them unique? • What other things have a similar connection? • Is there anything you can name as similar or different in your life? • Can you make an analogy, simile, or metaphor to make this more meaningful for yourself? <p>Math & Science</p> <ul style="list-style-type: none"> • What are you noticing? • What do you think is going on? • What patterns can you find? • How might you organize your data to help you look for a pattern? • What happens when you...? • What does it mean to be a mathematician/scientist? • What do mathematicians/scientists do? • What patterns can you identify across HOW we study different science topics? • What is special about science? What is special about how we study science? • How have you become a stronger scientist as we've been working? <p>Literature & Journalism</p> <ul style="list-style-type: none"> • What do you think are the author's beliefs? • What is the author trying to convince you of? <p>Social Issues</p> <ul style="list-style-type: none"> • What's your view/take on this? 	<p>General</p> <ul style="list-style-type: none"> • Is it a meaningful connection? Is it relevant to the topic at hand or should it be saved for later? Does this connection help you understand the idea in a new way? • What are you learning now about the way these two things relate? • Can you make any other connections? • Can you think of how someone might disagree with your connection? 	<p>Creating insight and understanding from one's connections</p> <ul style="list-style-type: none"> • How do you see the old idea differently now? • How do you think you'll continue to improve as you become more expert in being a scientist? • How does your creative project show elements of how historians work and how scientists work? • Reflect on your own self-connection within discipline (ie: how expert are you in discipline?) <p>Determining the methods:</p> <ul style="list-style-type: none"> • What are some things you think scientists and historians could teach each other about how to do their work? <p>Transferring the methods:</p> <ul style="list-style-type: none"> • How are science and history alike? Different? • What do scientists do? What do historians do? How is this similar? Different? • How would you explain to someone who is brand new to learning about science and history how they are different? Similar? • Can the use of experimentation be applied to other disciplines? • If you used the scientific method to study history what do you think would happen?
<p>Markers of Quality</p>	<ul style="list-style-type: none"> • Bringing new motivation to the topic at hand because of linking to oneself 	<ul style="list-style-type: none"> • Creating a novel – new - connection • Making new links furthers understanding of new topic rather than distracting from it • Naming a new relationship between ideas and also the implications of named relationship • Both portions of the analogy or metaphor are supported and the 	<ul style="list-style-type: none"> • Accurate identification of disciplinary practices and thinking and differences between disciplines (scientists do X, historians do Y) • Interdisciplinary creations demonstrate understanding of disciplinary practices • Integrated disciplines results in understanding of content and the relationship between the disciplines 	<ul style="list-style-type: none"> • Constructing entirely new knowledge or ideas • Changing one's prior knowledge or idea, or the way one understands prior knowledge or an idea • Finding a nuanced understanding • Uncovering an underlying truth • Pushing the relationship beyond the

		<p>relationships are clear, complex, and insightful</p> <ul style="list-style-type: none"> • Analogy or metaphor takes risks to express new ideas and accesses ideas outside the classroom space 		<p>connection to analyzing the type of relationship (causal, parallel, indirect, etc.)</p> <ul style="list-style-type: none"> • Clearly describing a relationship between ideas and also the implications of named relationship
Typical Struggles	<ul style="list-style-type: none"> • Activating irrelevant knowledge or schemas • Overshadowing or confusing the topic with one's personal experience • Finding a connected fact, concept, or experience but not knowing how it relates, inability to connect back to the original topic 	<ul style="list-style-type: none"> • Misguided surface connections seem to match, but underlying structure is incorrect • Connection making distracts the learner's focus and understanding of the topic at hand • Connection making simply adds ideas together without furthering understandings 	<ul style="list-style-type: none"> • Difficulty identifying the limits of a connection or metaphor • Difficulty viewing one's own connection from a different perspective • Difficulty identifying the assumptions one has made 	<ul style="list-style-type: none"> • Seeing surface comparisons - i.e.: science studies nature, history studies what happened in the past • Difficulty differentiating between the fine-grain practices that separate science from history • Surface connections between disciplines • Inability to identify separate disciplinary practices/dispositions • Incorrect identification of what makes each discipline unique • Difficulty understanding expertise within discipline • Surface reflections on one's own work and growth within discipline
Language scaffolds and strategies	<ul style="list-style-type: none"> • "This feels like/sounds like/looks like___." • "If I think back to ____, I can connect..." • "I never thought___, but this new idea makes me see that___." • "I have a personal connection to ___." • "I can relate to___." • "I'm thinking this sounds a lot like ___." • "If I were that person, I would___." • "I felt like that person when___." • "I remember when ___." 	<ul style="list-style-type: none"> • "I see a similar pattern in..." • "If you look at ___ as___, then we can see that they share..." • "This connection makes ___ and ___ the same/similar, because ___." • "What's the same is ____, but what's different is___." <p>Finding a similar or comparable case...</p> <ul style="list-style-type: none"> • Making connections in literature Can I make a text-to-self connection? text-to-text? text-to-world? <p>Sorting and classifying...</p> <ul style="list-style-type: none"> • Creating Venn Diagrams 	<ul style="list-style-type: none"> • "The strengths of this connection are ____, but the weaknesses are ___." • "My connection helps me understand how ___." • "I used to think ____, but now I think ___." • "Someone might challenge my connection by addressing ____. I can/cannot defend it by ___." 	<ul style="list-style-type: none"> • "If I apply this way of thinking to ____, I could see how ___." • "Somebody who studies history could learn ___ by thinking about this like a scientist." • "If I were to make a hypothesis about this, I would say ___." • "It might be useful to think of ___ like a scientist/historian/author because ___." • "Thinking like a scientist/historian/author makes me think of ___." This might connect to ___." <p>Creating insight and understanding from one's connections</p> <ul style="list-style-type: none"> • Reflective practice connecting

		<p>How are two items similar? different?</p> <p>Capturing and expressing the essence...</p> <ul style="list-style-type: none"> • Personification of a concept If you could personify this as something, what would it be? • CSI: color, symbol, inference <p>Associating information with meaning...</p> <ul style="list-style-type: none"> • Associate the concept with an image and extend 		<p>student's growth in a given discipline "When I started using the scientific method I struggled with..., now I am really good at ... and struggle with..."</p> <ul style="list-style-type: none"> • During science/history, engage students in metacognition: "What are you doing/thinking right now?" <p>Determining how the thinking, skills or processes can be replicated in new contexts</p> <ul style="list-style-type: none"> • Creating a chart with the class showing scientific method vs. historical method • Asking class to compare a science experiment activity and historical interpretation activity • Creating a connection map between disciplines and their methods • Demonstration of how scientific development and methods change over time <p>Transferring disciplinary thinking and practices learned in one discipline and applying to another</p> <ul style="list-style-type: none"> • Asking students to use the scientific method when solving a historical problem - i.e.: Given these two pieces of text and an image of the Battle of Bunker Hill, can you create your strongest interpretation, using evidence? • Designing projects that require skills and content knowledge from both disciplines being integrated