

SELECTED EXCERPTS *from*

TOOLS

FOR CLASSROOM INSTRUCTION THAT WORKS

**Ready-to-Use Techniques for
Increasing Student Achievement**

Over 50 tools for addressing key practices, including

- Setting objectives and providing feedback
- Using cues, questions, and organizers
- Summarizing and note taking
- Identifying similarities and differences
- Generating and testing hypotheses

Harvey F. Silver | Cheryl Abela | Abigail L. Boutz | Matthew J. Perini

Foreword by
Bryan Goodwin



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Silver Strong & Associates
Thoughtful Education Press

3 Tice Road, Suite 2
Franklin Lakes, NJ 07417
Phone: 800-962-4432 or 201-652-1155
Fax: 201-652-1127
Website: www.ThoughtfulClassroom.com
Email: questions@thoughtfulclassroom.com

President and Tools Series Developer: Harvey F. Silver
Director of Publishing and Tools Series Editor: Matthew J. Perini
Associate Editor / Project Manager: Justin Gilbert
Design and Production Directors: Bethann Carbone & Michael Heil
Proofreader: Lesley Bolton



McREL
INTERNATIONAL

4601 DTC Boulevard, Suite 500
Denver, CO 80237-2596
Phone: 800-858-6830 or 303-337-0990

Website: www.mcrel.org
Email: info@mcrel.org

CEO and President: Bryan Goodwin
Chief Innovation Officer: Ron Miletta

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A number of tools featured in this book have been adapted from other titles in the Tools for Today's Educators series, including *Tools for Thoughtful Assessment* (Learning Window; Student-Friendly Learning Targets; Review/Preview; Goal Cards; PEERS; Guiding & Grading Rubrics; Effort Tracker; GOT It!; Second-Chance Test; Points Worth Praising; A Job Well Done; Vocabulary Knowledge Rating; From Topics to "Top Picks"; 4-2-1 Summarize; Graduated Difficulty), *Tools for a Successful School Year* (Rules to Live and Learn By; All for One & One for All; Community CIRCLE; Interaction in an Instant; Questioning in Style; Power Previewing; Procedural PRO; Because), and *Tools for Conquering the Common Core* (Stop, Read, Revise; AWESOME Summaries; Describe First, Compare Second).

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Foreword

What if every year, every teacher got a little bit better?

Imagine the impact on students' lives if massive numbers of teachers grew more expert at engaging students and guiding their learning. This growth could dwarf anything else we might do (or have already tried) in the name of “fixing” schools—from class-size reduction to whiz-bang technologies to value-added measures ... the list goes on and on.

The partners behind this book believe that helping teachers become better every day is possible. Indeed, in school after school and district after district, we have witnessed the transformative power of improving teaching and increasing student engagement.

So, what would it look like if schools and districts everywhere were to focus not on getting better teachers, but rather, on *getting teachers better*?

We might start by asking this question: *How* do they get better? That is, how do teachers (how does anyone, for that matter) move from novice to expert? What must they learn? What skills must they develop? And what helps some people develop faster and go further with their practice than others?

Years ago, Benjamin Bloom (1985), an icon of education research, brought together a team of researchers to conduct a sweeping study of 120 immensely talented people: pianists, sculptors, tennis players, Olympic swimmers, mathematicians, and neurologists. The purpose of the study was to discover what these experts did that others did not—that is, how they developed their talents.

The results were eye opening: Although talented people differed in many ways, they followed remarkably similar phases of development. First came a “romance” period of informal training and exploration during which experts fell in love with their chosen field, followed by a period of focused “digging in.” During the digging-in phase, experts sought to master the knowledge and skills of their discipline, often by mirroring and copying the works of masters.

Musicians, for example, learned to play others' songs with precision. Artists honed their talents by replicating, in fine detail, the work of the masters. Athletes dissected and modeled the techniques of top performers. Similarly, as a young man, Benjamin Franklin improved his writing skills by attempting to reconstruct, verbatim from memory, articles he admired. He then compared his own drafts with the originals. This process helped him become one of the most widely read writers of his day under the nom de plume Poor Richard (Ericsson, Prietula, & Cokely, 2007).

What mirroring does more than anything else is shorten our learning curves. Instead of spending countless hours casting about to figure out how to do something well, we learn from others' hard-earned experience and insights. What you'll find, then, in the pages of this book is a valuable “hack” for your development as a teacher: classroom techniques drawn from dynamic, expert teachers—their

masterpieces, if you will—that have been curated and provided for you to apply guilt-free in your classroom. The research on expertise makes it clear that there is no shame in imitating those more masterful than us; indeed, it may be the single best way to grow professionally.

We assume you’ve picked up this book because you’ve already fallen in love with the profession of teaching—you’ve experienced the joy of igniting students’ passions and interests and have come to see that, as a teacher, you have the power to change people’s lives. Now, you’re looking to hone your craft, to become even more masterful in your classroom, so you can change more students’ lives even more profoundly. As you develop this mastery, you’ll likely find yourself devoting mental energy to the task of learning *what* to do and *how* to do it. Musicians do the same thing as they master chords and scales and learn to read music. Athletes invest this same energy in running drills, practicing moves, and studying plays.

As professionals, we too must learn from experience and from research what works and how to do it. We’ve devoted this book to providing you with exactly that: research on what works and the tools for how to do it well.

When you first use these tools, you may stumble a bit. Things may not go exactly as you imagined. That’s OK. Stick with the tools. Keep practicing them. The next time you use them, the results will be better—and even better the next time—until you find you can use them masterfully in your classroom.

Yet we hope your professional journey doesn’t end there. These tools should not be an end but rather an important step in your professional journey—the equivalent of musicians incorporating chords, scales, and harmonies into their compositions or tennis players using slice, topspin, and blocking shots in their games.

With this in mind, here is perhaps the most important question when it comes to developing expertise: Can *you* get better?

All of us who have contributed to this book believe you can, especially if you’re committed to improving your practice and are ready to dig in to your craft. With the tools in this book, you can develop greater precision and build your instructional repertoire as you learn from research and from the experience of master teachers.

So, how about it? Are you ready to dig in?

Bryan Goodwin
CEO and President
McREL International

I Can & I Will

What is it?

A tool that empowers students to achieve at higher levels by facilitating an “I can & I will” attitude

What are the benefits of using this tool?

Carol Dweck’s (2016) work shows that students with a “growth mindset” (i.e., students who believe that hard work and effort matter) are far more likely to succeed than students who believe that achievement is determined by innate ability. I Can & I Will provides insight into students’ existing beliefs about and attitudes toward learning. More important, it helps students develop a growth mindset by highlighting the relationship between effort, attitude, and achievement.

What are the basic steps?

1. Use the Agree/Disagree form on page 44 to uncover—and help students uncover—their existing beliefs about factors that impact success and achievement. Have students decide whether they agree or disagree with each statement and explain why. Discuss students’ responses as a class.
2. Teach students that they have the power to control their own success—that ability isn’t a fixed trait but rather something that can be improved via effort and a can-do attitude.
3. Help students internalize the lesson that effort level and attitude make a difference by having them identify examples from their own lives where their attitude, actions, or level of commitment helped them get better at something. Invite them to share their examples with the class.
4. Ask students to make an “I can & I will pledge” before tackling a specific learning target or task. (“I believe that I CAN improve my performance through effort, and I WILL give 100% to this task.”)
Optional: Ask students to formalize their pledge by completing a contract like the one on page 45.
5. Clarify that having an “I can & I will” attitude is only the first step—that students need to know how to channel their efforts productively in order to be successful. Prepare them to do this by
 - Helping them identify attitudes and behaviors from their past successes (see Step 3) that can help them (e.g., a can-do attitude or a willingness to persevere through challenges).
 - Defining what “giving 100%” means in the context of the assigned task. Before having students read a challenging passage, for example, you might clarify that giving 100% means reading slowly, checking for understanding after each paragraph, and asking for help if needed.
6. Teach students to talk themselves through rough patches by repeating the phrase “I can & I will.”

How is this tool used in the classroom?

- ✓ To uncover students’ existing attitudes about the factors that impact success
- ✓ To help students develop a growth mindset

Name: _____

Date: _____

• **Agree/Disagree** •

Anyone can get better at anything.

Agree or disagree?

Explain:

When it comes to doing well in school, all that matters is how smart you are.

Agree or disagree?

Explain:

Hard work pays off.

Agree or disagree?

Explain:

When things get difficult, it's OK to give up.

Agree or disagree?

Explain:



Name: _____ Date: _____

I Can & I Will Contract

Here is what I am trying to learn or do ...

Attitudes or actions that might help me include ...

- ☐ I believe that I CAN learn more and do a better job if I work hard.
- ☐ I promise that I WILL work as hard as I can.

Write or sign your name here: _____

Before, During, After (BDA)

What is it?

A tool that helps students develop high-quality responses to classroom questions—whenever those questions are asked

What are the benefits of using this tool?

How often do teachers ask higher-order-thinking questions but get lower-level-thinking responses? One reason for this disconnect is that good responses depend on what teachers and students do before a question is posed and after an initial response is developed. Before, During, After outlines a three-phase thinking process that helps to increase student engagement and depth of thinking during classroom questioning. The three phases are preparing students to think BEFORE the question, posing the question in a way that invites students to explore possible responses (DURING), and processing student responses through probing, paraphrasing, and the use of varied classroom participation techniques (AFTER).

What are the basic steps?

1. Develop a question that you want students to think about deeply.

Note: It is important to have a clear purpose for your question: Why are you asking it? What do you hope students will learn/discover by exploring it? How will you assess student responses?

2. Prepare students for deep thinking BEFORE posing the question by providing context and piquing student interest. See Teacher Talk for tips on how to provide context and increase interest.
3. Pose the question to the class. Make sure all students understand the question, and provide wait time DURING the process to encourage students to think about possible responses.
4. Make students' covert thinking overt by having students generate their initial thoughts on paper.
Tip: Have all students set aside a dedicated thinking journal or learning log at the beginning of the year as a place to collect and record their thoughts.
5. Allow students to share and compare their initial thoughts with a partner. Encourage students to listen to each other's responses carefully, look for similarities and differences in their thinking, and generate additional thoughts or select the best idea.
6. Invite students to share their ideas as a class. Call on a wide variety of students to ensure high levels of participation.
7. Use probing questions, paraphrasing, and participation techniques to help students evaluate and expand their thinking AFTER they share their initial responses.
 - *Probe:* What is your evidence? How do you know that's so? And you think that because?
 - *Paraphrase:* Do I hear you saying ...? Do you mean ...?
 - *Participation techniques:* How many people agree? Who has a different point of view?

How is this tool used in the classroom?

- ✓ To train students to think deeply before, while, and after responding to questions
- ✓ To make the questioning process active
- ✓ To deepen responses through probing and participation techniques

EXAMPLE: A high school English class is reading Shakespeare’s *Romeo and Juliet*. The teacher uses the BDA process to help students think about and discuss a soliloquy in which Juliet expresses her love for Romeo.

BEFORE: The teacher begins by asking students if they know what the word *naïve* means and if any of them has ever been accused of being naïve. After drawing on students’ experiences, she reads Juliet’s soliloquy aloud. Then, she poses two related questions: “Is Juliet naïve? Do you agree or disagree that this soliloquy reveals that Juliet is naïve?”

DURING: The teacher gives students time to think and jot down their initial ideas in their learning logs. Students compare their ideas with a neighbor. In pairs, students must use textual evidence to decide whether they agree or disagree with the premise that Juliet is naïve.

AFTER: The teacher initiates a whole-class discussion in which students share and justify their ideas using the text.

Teacher: So what do we think?

Student 1: I agree with the statement. Juliet is naïve.

Teacher: What evidence in the text leads you to believe that?

Student 1: Well, it’s the way she talks. It’s so gushy.

Teacher: How many of you agree?

Student 2: I agree. It sounds like an obsession, like she’s a teenager with a bad crush.

Teacher: Can you give me an example?

Student 2: “Take him and cut him out in little stars,

And he will make the face of heaven so fine

That all the world will be in love with night

And pay no worship to the garish sun.”

Teacher: Does anyone disagree with the idea that Juliet is just an infatuated teenager?

Student 3: I disagree. I mean, just listen to the way she can express herself. Her ability to express herself is incredible. It’s not young-sounding to me.

Teacher: Interesting. What language in particular are you referring to?

Teacher Talk

- ➔ To better prepare students for the question, provide background information or a context that will make the question more meaningful and interesting when you pose it.

Sample language: Have you ever heard of a mixed blessing? It means that something is both positive and negative at the same time. Take cars, for example. They get us where we want to go whenever we want. But they also create huge amounts of pollution, and car accidents cause thousands of deaths every year. Today, we'll be exploring a different mixed blessing: fracking.

- ➔ To increase student interest in your question, consider how you can use the “Eight Cs of Engagement” (Silver & Perini, 2010) to make your question especially intriguing. Some of the Cs, along with questions that engage these Cs, include
 - **CURIOSITY:** Have you ever wondered why some animals hibernate and others don't? What's going on? Why do some animals hibernate?
 - **CONTROVERSY:** Should street artists like Banksy be studied alongside masters like Monet and Picasso?
 - **CREATIVITY:** What if Thomas Edison had never lived? How would your life be different?
 - **Personal CONNECTIONS:** Have you ever rebelled against something? When is rebellion justified?
- ➔ Posing a question is different than asking a question. Posing is an invitation to explore possible ideas and responses. To help emphasize this point in the classroom, explain to students that the root of the word *question* is *quest*. A quest is a journey, a search for truth. Instead of questioning, invite the class to go “questing.”
- ➔ Pausing several seconds after asking a question to give students time to think before responding and to refine their thinking is called wait time. Research indicates that when students have more time to think about their responses before they actually respond, they tend to participate more in class, think more deeply, and generate more thoughtful responses (Rowe, 1972; Tobin, 1987). Of course, it's not just the wait time that counts; it's also what students do with the time. By inviting students to write down their initial thoughts, you help them get their ideas out in the open; by allowing them to share their ideas with another student, you help them test and refine their ideas—and gain new perspectives.
- ➔ The probing and participation prompts/questions below enhance student discussions. Notice that they encourage thinking rather than looking for correct answers.
 - Share your thinking.
 - What are your ideas?
 - Can you give me an example?
 - That's an interesting way to think. How did you arrive at that idea?
 - What's behind your idea? Can you explain your reasoning?
 - Does anyone have a different idea?
 - How many agree? How many disagree? Who's unsure?

Window Notes

What is it?

A tool that makes the note-taking process more engaging by encouraging students to record questions, personal reactions, and interesting connections in addition to facts

What are the benefits of using this tool?

Note taking is an essential part of classroom life, and it has a significant impact on student achievement (Dean et al., 2012). But ask most students (and most adults) about their experiences with taking notes and you'll probably get a shudder. Window Notes makes the process of taking notes more interesting for students by inviting them to jot down not just factual information but also questions, reactions, and connections they can make with what they're learning. Note that challenging students to generate different types of notes does more than enhance engagement; it stimulates active processing of the content in question, and it facilitates learning and retention as a result.

What are the basic steps?

1. Tell students that you want them to try making notes in a different way than usual—specifically, that you want them to generate notes that include the following four elements: (1) factual information, (2) questions, (3) feelings and reactions, and (4) connections that come to mind.

Tip: Encourage students to record *any* connections that come to mind—for example, personal, real-world, literary, historical, or academic (i.e., connections to things they've learned in school).

2. Review the Window Notes organizer (p. 162) with students. Show them how it has a place for each of the four note types mentioned in Step 1, as well as guiding questions to spur their thinking.
3. Model the Window Notes process for students. Select a topic or text, and make all four types of notes about that topic or text on the organizer. Think aloud as you work.
4. Ask students to generate Window Notes about a specific topic, text, lecture, or other classroom presentation. They can use the Window Notes organizer on page 162, make their own organizers using the one on page 162 as a model, or express their thoughts orally (ideal for younger students).
Tip: Before having students create content-related Window Notes, let them practice making Window Notes about a topic that's very familiar to them (e.g., a day in their life). Observe students as they work, and provide guidance or feedback as needed.
5. Invite students to share their notes with the class. Review key ideas and address students' questions if appropriate. Instruct students to add to or revise their notes as they see fit.
6. Encourage students to use the Window Notes technique independently, as a means of making the note-taking process more active, engaging, and personally meaningful. Facilitate the process by making blank Window Notes organizers readily available.

How is this tool used in the classroom?

- ✓ To promote note taking that includes facts, questions, feelings/reactions, and connections
- ✓ To make the note-taking process an active, engaging, and personally meaningful one

EXAMPLE 1: After reading a passage about the bee hummingbird aloud, a second-grade teacher invited students to generate Window Notes as a class. Students shared their ideas orally, and the teacher recorded them (shown below). Notice how the teacher made the four types of notes more distinct by using different symbols for each.

| | |
|--|--|
| <p style="text-align: center;"><u>Facts</u></p> <ul style="list-style-type: none"> ☑ The bee hummingbird is the world's smallest bird. ☑ They can fly forward, backward, and upside down. ☑ Hummingbirds are the only birds that can stay in place while they fly. This is called <u>hovering</u>. ☑ Bee hummingbirds beat their wings 80 times in a second. | <p style="text-align: center;"><u>Feelings and Reactions</u></p> <ul style="list-style-type: none"> 😊 Bee hummingbirds are amazing! 😊 It must feel really cool to fly upside down. 😊 We want to learn more about bee hummingbirds. |
| <p style="text-align: center;"><u>Questions</u></p> <ul style="list-style-type: none"> ② How do they fly upside down and backward? ② Why can't other birds hover? | <p style="text-align: center;"><u>Connections</u></p> <ul style="list-style-type: none"> ✱ I saw a nature show on hummingbirds once. I remember that their wings move so fast that you can't see them flapping. ✱ It's probably called a bee hummingbird because it's tiny like a bee. |

EXAMPLE 2: A high school student's notes from Maya Angelou's "Caged Bird" are shown below.

| | |
|---|---|
| <p style="text-align: center;">FACTS</p> <ul style="list-style-type: none"> • The poem goes back and forth between a free bird and a caged bird. • The free bird leaps and floats and flies and "claims the sky." • The caged bird's wings are clipped, and its feet are tired. • The poem is written in free verse. | <p style="text-align: center;">FEELINGS & REACTIONS</p> <p>The poem makes me feel sorry for the caged bird. It can't fly and longs to be free.</p> <p>I really like the way it repeats the verse about the caged bird singing of freedom. The song can't be stopped.</p> |
| <p style="text-align: center;">QUESTIONS</p> <p>Is the caged bird actually triumphant at the end?</p> | <p style="text-align: center;">CONNECTIONS</p> <p>The poem reminds me of a technique they sometimes use in movies where they keep cutting back and forth between two different characters.</p> |

EXAMPLE 3: Here are the notes a fourth-grade student made while watching a video on tornadoes:

| | |
|--|--|
| <p>FACTS</p> <ul style="list-style-type: none">• Tornadoes are rotating columns of air. They go from a thunderstorm in the sky down to the ground.• They form when warm moist air hits cool dry air.• They can reach wind speeds of 300 miles per hour. | <p>FEELINGS & REACTIONS</p> <ul style="list-style-type: none">• Tornadoes are really scary! I didn't know how much damage they could cause! |
| <p>QUESTIONS</p> <ul style="list-style-type: none">• How do they measure the wind speed inside a tornado?• Why don't tornadoes keep going? What makes them stop? | <p>CONNECTIONS</p> <ul style="list-style-type: none">• I saw something about a tornado on TV when my parents were watching the news. Some of the people were crying because their houses had gotten blown away.• Tornadoes remind me of getting off to school. I am trying to do so many things and I am so rushed that it feels like I am spinning at 300 miles per hour! |



Teacher Talk

- ➔ Because many students aren't used to being asked how they feel, particularly in a note-taking context, you may need to spend more time modeling and discussing what goes in the Feelings & Reactions quadrant of the organizer. One way to help is to give students a list of feeling stems that might help them—for example, "I really enjoyed __," "I was impressed by __," "I was surprised that __," "I was inspired by __," "I was confused about __," or "I'm not sure how I feel about __."
- ➔ While this tool is typically used to have students take notes on one specific text or presentation, it can also be used to help students reflect on and demonstrate what they've learned at the end of a lesson sequence or unit. When used in this way, students' completed organizers serve as a great tool for assessing students' learning, interests, open questions, and feelings about the topic or text.
- ➔ Help yourself (and your students) recognize that people have different note-taking preferences by surveying the class to see which of the four note types is each student's favorite. Explain that it's fine to have preferences, but that each note type has value—and, therefore, that students should aim to generate all four types of notes, even if some come less naturally to them.
- ➔ Help students appreciate—and encourage them to use—the Window Notes technique by identifying (or challenging them to identify) the value of each note type. Among other things, you might note that recording FACTS helps students extract and summarize key content, generating QUESTIONS allows students to express their curiosity, expressing FEELINGS & REACTIONS lets students connect with what they're learning on a personal level, and making CONNECTIONS encourages students to tap into their prior knowledge.
- ➔ To promote deeper understanding and retention of the material students took notes on, assign a task that requires students to review, summarize, and/or synthesize their understanding of that material.
- ➔ Some teachers may wonder if this technique is "fluffy." But, in reality, it promotes deeper understanding than traditional note taking. Why? Because making the four types of notes requires active processing and ensures that students are not simply copying, which can be done mindlessly.

Name: _____

Date: _____

Topic or text: _____

Window Notes

FACTS
What did you learn?

FEELINGS & REACTIONS
How did you feel about what you saw, heard, or read?

QUESTIONS
What do you want to know or wonder about?

CONNECTIONS
Can you make any connections to people, places, or things you know about?
Or to experiences you've had?



Comparative Controversy

What is it?

A tool that engages students in comparing and contrasting critical content as they take and defend positions on content-related “controversies”

What are the benefits of using this tool?

What if we could couple the research-based practice of identifying similarities and differences with controversy, a known motivator and achievement booster? By making this marriage, Comparative Controversy builds students’ analytical skills and gets students engaged in exploring and debating critical content—even content they don’t typically get excited about. At the heart of the tool are simple frames that force students to take and defend a position based on a comparative analysis of two or more items or topics. The debates that these frames spark tend to be animated and enthusiastic, as most students relish the opportunity to express and make a case for their ideas. Comparative Controversy also hones critical discussion skills, including listening carefully, disagreeing respectfully, and supporting ideas with evidence.

What are the basic steps?

1. Review the Comparative Controversy frames on pages 195–196. Pick one that fits your content.
2. Use the selected frame to develop a content-specific question that will provoke debate when presented to students. Confirm that your question is one that students can have legitimately different opinions about, not one that has a definitive right or wrong answer.
Note: The goal is to develop questions or statements that require students to analyze similarities and differences between/among items and then use their analysis to take a position.
3. Present your question. Give students time to compare and contrast the items and develop a position. Clarify that there are no right or wrong answers, just different opinions—but that opinions must be based on a careful analysis of similarities and differences.
4. Prepare students to engage in a heated but respectful discussion by reviewing and modeling the following discussion guidelines (modify the list as needed):
 - State your positions clearly. Support them with relevant similarities, differences, or other details.
 - Treat your classmates as you’d want to be treated. If you’re going to disagree, do it respectfully.
 - Question and critique each other’s reasoning, not each other’s intelligence.
 - Be passionate about your positions, but listen to other people’s arguments as well.
 - Keep an open mind. Feel free to change positions in response to what you hear.
5. Invite students to share and justify their positions. Moderate the discussion by helping students recognize and strengthen poorly supported positions, identify similarities/differences they might’ve missed, transform personal attacks into thoughtful critiques, etc.
6. Help students reflect on what they learned, summarize critical similarities and differences, and assess how well they followed the discussion guidelines.

How is this tool used in the classroom?

- ✓ To develop students' comparative analysis skills
- ✓ To promote active conversations about (and a deeper understanding of) critical content
- ✓ To use controversy and debate as a means of stimulating student engagement
- ✓ To develop students' ability to support a position with solid reasons and evidence
- ✓ To promote essential speaking and listening skills

Teachers use the Comparative Controversy frames described on pages 195–196 to engage students in discussing key content and discussing it excitedly. Sample prompts show how the frames can work across grade levels and content areas.

Teacher Talk

- ➔ Remind students to support their positions with reasons and evidence by saying, “And you chose that position *because*?” (Students should respond with, “I think ____ because ____.”)
- ➔ Be sure to leave time for reflection. Help students reflect on and analyze their decision-making process by calling attention to the criteria they use to make their choices. (“John argued that these paintings are more similar than different because their subject matter and color palette are almost identical. What criteria was Tameka using when she decided that the paintings were more different?”) Help students solidify their understanding of the relevant content (and demonstrate they were listening) by challenging them to summarize their classmates' positions and reasoning. Prepare students to become more actively and appropriately engaged in future discussions by helping them assess—and think about how to improve—their performance. (“How well did you personally follow our discussion guidelines? How well did the class as a whole follow the guidelines? How can you/we do better next time?”)
- ➔ Comparative Controversy provides an ideal opportunity to review and give students feedback about their use of behavioral guidelines that relate to sharing and discussing ideas—guidelines like listening carefully, disagreeing respectfully, and critiquing ideas rather than people. As always, remember to teach expected behaviors explicitly, provide reminders as needed, and offer specific and informative praise to students who exhibit the behaviors successfully. (“I appreciate that you questioned Santiago's logic rather than attacking Santiago personally.”)
- ➔ As written, the tool develops oral argument skills, but you can target written argument skills instead by having students present and justify their positions in writing rather than orally.

Five Comparative Controversy Frames

More Alike or Different?

More Alike or Different? is useful when students are studying related pairs of items, events, concepts, or individuals. To use this frame, have students review what they know about each item, decide whether the items are more alike or different, and support their choices with relevant details. Asking students to decide whether two items are more alike or different and explain their reasoning forces them to examine the items more closely and attend to the most salient similarities and differences. Here are some sample prompts:

- Are spiders and insects more alike or more different?
- Are fractions and decimals more alike or more different?
- Are Ulysses S. Grant and Robert E. Lee more alike or more different?
- Are the heroines in these two stories more alike or more different?
- Are lithium and potassium more alike or more different?
- Are these two paintings more alike or more different?

Which Is More ... Better ... the Best ... the Most?

This frame asks students to make and defend judgments based on quality or degree. Prompts contain comparative or superlative words such as *more*, *better*, *best*, *most*, and *greatest*. Here are some examples:

- Which is the best season: spring, summer, winter, or fall?
- Which of these articles provides the most realistic advice for dealing with bullying?
- Which type of graph is best for presenting this kind of data?
- Which is the most powerful line in this text?
- Which of these scientific discoveries had the greatest impact on world history?

Which One Doesn't Belong?

This frame asks students to examine a set of three or four items, search for similarities and differences among the items, and identify one item that doesn't belong with the others. With the traditional use of this frame (see Silver, Brunsting, Walsh, & Thomas, 2012), the teacher deliberately selects one item in the set that is meant to be identified as the outlier (e.g., one non-right triangle among two or three right triangles). Here, however, the idea is to promote controversy by presenting students with a set of items that has no obvious outlier and allowing them to argue the case for any item they want ("This item doesn't belong with the others because ..."). Here are some sample prompts:

- Question mark, period, exclamation point: Which one doesn't belong?
- Butterfly, honeybee, mosquito, firefly: Which one doesn't belong?
- Square, rectangle, rhombus, trapezoid: Which one doesn't belong?
- Jazz, blues, soul, R & B: Which one doesn't belong?
- *A Raisin in the Sun*, *Death of a Salesman*, *The Glass Menagerie*: Which one doesn't belong?
- George Washington, Thomas Jefferson, Abraham Lincoln, Theodore Roosevelt: Which one doesn't belong?

Perfect Pairs and Odd Couples

With this frame, students are presented with a set of five or more related items that they've recently learned about (e.g., six organs in the human body, the ten amendments in the Bill of Rights, five classes of vertebrates, eight classic films). Students are then asked to decide which two items in the set they believe make a "perfect pair" (items they believe have a lot in common) and which two items are an "odd couple" (items that are very different from one another). Clarify that students can nominate any items they want for their pairings, as long as they can back up their choices with solid reasoning and details. Encourage students to support their choices with as many similarities or differences as they can think of. In response to the question "Which two planets in the solar system do you believe are an odd couple?" for example, a student might say something like this: "Mercury and Neptune are an odd couple, because almost everything about them is different! Mercury is closest to the sun, while Neptune is farthest away. Mercury is small and rocky, while Neptune is large and gaseous. Mercury is extremely hot during the day, whereas Neptune is always extremely cold."

Metaphorical Duels

Metaphorical Duels (Silver, Brunsting, Walsh, & Thomas, 2012) exploits the power of metaphorical thinking to promote depth of understanding. To use this frame, design two possible similes around a topic of interest, ask students which they feel is the most accurate, and have them justify their choices. Making the unusual connections that this frame requires forces students to think deeply and creatively about the critical attributes of the initial topic—a move that can have a powerful impact on comprehension and lead to deep insight. Here are some sample prompts:

- Is a good friend more like a teddy bear or a flower?
- Is prejudice more like an iceberg or a runaway train?
- Is the circulatory system more like a bicycle or a delivery truck?
- Is the scientific method more like a recipe or a map?
- Are graphing calculators more like microscopes or telescopes?
- Are hieroglyphics more like a comic strip or a short story?

Encouraging students to describe the attributes of the items they're comparing can help them make more thoughtful and well-supported choices. ("Before deciding whether prejudice is more like an iceberg or a runaway train, jot down everything you know about prejudice, everything you know about icebergs, and everything you know about runaway trains.")