High Expectation Questioning Strategies

No Opt Out	Right is Right

Stretch-It	Cold Call

Talk Moves

Hold Your Thinking – Questioning Strategies

these teachers, that raise expectations and differentiate great classrooms from the merely good ones.

TECHNIQUE 1

NO OPT OUT

One consistency among champion teachers is their vigilance in maintaining the expectation that it's not okay not to try. Everybody learns in a high-performing classroom, and expectations are high even for students who don't yet have high expectations for themselves. So a method of eliminating the possibility of opting out—muttering, "I don't know," in response to a question or perhaps merely shrugging impassively in expectation that the teacher will soon leave you alone—quickly becomes a key component of the classroom culture. That's where **No Opt Out** started, though as with so many of the other techniques in this book, it soon found additional applications as a useful tool for helping earnest, striving students who are trying hard but genuinely don't know the answer. *No Opt Out* helps address both. At its core is the belief that a sequence beginning with a student unable (or unwilling) to answer a question should end with that student giving the right answer as often as possible, even if it is only to repeat the correct answer. Only then is the sequence complete.

KEY IDEA

NO OPT OUT

A sequence that begins with a student unable to answer a question should end with the student answering that question as often as possible.

In its simplest form, *No Opt Out* might look like this. It's the first day of school, and you're reviewing multiplication facts with your fifth or perhaps sixth graders. You ask Charlie what 3 times 8 is. Glancing briefly and impassively at you, Charlie mutters, "I dunno," under his breath, then sucks his teeth, and turns

his head slowly to look out the window. It's a critical moment. Students all too commonly use this approach to push back on teachers when their unwillingness to try, a lack of knowledge, or a combination of the two makes them unsure or resistant. And all too often it works. Reluctant students quickly come to recognize that "I don't know" is the Rosetta stone of work avoidance. Many teachers simply don't know how to respond. The result is a strong incentive for students to say, "I don't know" when asked a question. If you don't feel like working hard, those three words can save you a lot of effort. So if Charlie successfully shows you that you can't make him participate, it's going to be a long year of you gingerly (and weakly) stepping around him, of other students seeing that Charlie does what he wants, and of Charlie not learning—a lose-lose-lose situation.

Reluctant students quickly come to recognize that "I don't know" is the Rosetta stone of work avoidance.

If you used *No Opt Out* in this situation, you would turn to another student, Devon, and ask him that same question. Assuming he correctly answered 24, you'd now turn back to Charlie: "Now you tell me, Charlie, what's 3 times 8?" Charlie has just found—without your stopping for a time-consuming and possibly ineffective lecture—that he has to do the work anyway in your class. Later we'll look at more challenging contingencies that you may be wondering about: What if Charlie doesn't answer when you come back to him? What if Devon doesn't answer? For now, it's most important just to understand the power and necessity of coming back to a student who won't try. The moment when you circle back and ask the student to reanswer the original question is the *No Opt Out.*

No Opt Out proves to be just as powerful in situations where students are trying. Here's an example from Darryl Williams's classroom, in which a student, James, was unable to identify the subject of the sentence, "My mother was not happy." He first tried to guess: "*Happy*?" he asked. Williams persevered, repeating the question as many other teachers would do: "What's the subject?" However, as the student was still unable to answer, Williams now asked the class, "When I am asking you for the subject, what am I asking for?" The student he called on now replied, "You're asking for who or what the sentence is about." Returning to James, Williams repeated, "When I ask for the subject, I am asking for who or what the sentence is about. What's the subject?" James now answered correctly: "*Mother*." As in all other *No Opt Outs,* the sequence began with a student unable to answer and ended with him providing the answer. The second student's answer didn't replace the original student's; it supported

it. And James has seen himself succeed where just moments ago he was unable to. He has rehearsed success and practiced one of the fundamental processes of school: get it wrong; then get it right.

But let's return now to some thoughts about what you might do if things hadn't gone so well. What if James still couldn't answer, or worse, what if he had shrugged his shoulders and muttered, "I don't know," and with a bit of swagger. If James still couldn't answer, Williams might persist by asking another student, "Well, what does that mean the subject is?" The student having answered, "The subject is *mother,*" Williams might then return to the original student asking him, "Okay, James, now you tell me: What's the subject of the sentence?" With only an answer to repeat, it's all but impossible for James to opt out and maintain the useful illusion that he can't answer. But in all likelihood, with any plausible gray area removed (see the box), he will answer. If he doesn't, it's a case of defiance that you can address with a consequence and an explanation: "James, you don't have to get the answers right in my class, but you will be expected to try. I'll see you here at recess."

Much of student behavior is opportunistic and undertaken in reaction to the gray area, *"I can get away with it, so I will."* A far smaller number of students will persist in a behavior once you've made it unambiguous what you expect. Fewer still will do so when you've shown you're persistent. This is discussed further in *What to Do.*

Even more effective might be a firmer iteration of *No Opt Out* before returning to James: "Tell him again, David. What's the subject?" And then, "Let's try it again, James. What's the subject of the sentence?" Or you could repeat the answer yourself: "James, the subject of this sentence is *mother.* Now you tell me, what's the subject?" Regardless of which approach you take, the sequence ends with the original student repeating the correct answer: "The subject is *mother*."

In the case of Charlie, if Devon didn't answer and tried to mimic Charlie's impassivity, you might give the answer yourself: "Class, 3 times 8 is 24. Devon, what is it? Good. Now you, Charlie." In a minute we'll look at some of the more academically rigorous variations on *No Opt Out.* But first I want to underscore

how the technique allows you to ensure that all students take responsibility for learning. It establishes a tone of student accountability, and it honors and validates students who do know the answer by allowing them to help their peers in a positive and public way.

I also want to underscore that the worst-case examples I've given above are fairly anomalous. The tone of *No Opt Out* in most classrooms is astoundingly positive and academic. Using it empowers you to cause all students to take the first step, no matter how small. It reminds them that you believe in their ability to answer. And it results in students' hearing themselves succeed and get answers right. This causes them to grow increasingly familiar with successful outcome. *No Opt Out* normalizes this process with the students who need it most.

NO OPT OUT: CLIP 1

In clip 1 on the DVD, Darryl Williams of Brighter Choice Charter School for Boys in Albany, New York, demonstrates *No Opt Out* twice. In the first instance, he calls on a student to read the word *acted*. When he isn't successful, Williams sticks with the boy, providing a cue himself until the student includes the suffix. As Williams notes, the objective for the day's lesson is to read and understand suffixes, so it's probably worth taking the time to cue the student as he does.

In the second instance, when the student is unable to read the word *performance*, Williams calls on another student and then returns to the original student: "Read it, Jamel." In this case, it's not probably worth the time to break down the error as the decoding skill the student struggles with is less closely related to the day's objective. That said, Williams has still firmly established a strong accountability loop.

There are four basic formats of *No Opt Out*. I've provided examples below, with each presented as a variation of the James sequence in Williams's classroom. What's consistent across all four cases is that a sequence that begins with the student unable to answer ends with the student giving the right answer. This ensures that everyone comes along on the march to college.

- **Format 1:** You provide the answer; the student repeats the answer.

Teacher: What's the subject, James?

James: *Happy.*

Teacher: James, the subject is *mother.* Now you tell me. What's the subject?

James: The subject is *mother.*

Teacher: Good, James. The subject is *mother.*

- **Format 2:** Another student provides the answer; the initial student repeats the answer.

Teacher: What's the subject, James?

James: *Happy.*

Teacher: Who can tell James what the subject of the sentence is?

Student 2: *Mother.*

Teacher: Good. Now you, James. What's the subject?

James: The subject is *mother.*

Teacher: Yes, the subject is *mother.*

A variation on this method is to ask the whole class, rather than one individual student, to provide the correct answer (using *Call and Response,* technique 23 in Chapter Four) and then have the initial student repeat.

Teacher: What's the subject, James?

James: *Happy.*

Teacher: On the count of two, class, tell me what the subject of the sentence is. One, two . . .

Class: *Mother!*

Teacher: What is it?

Class: *Mother!*

Teacher: James. What's the subject?

James: *Mother.*

Teacher: Good, James.

- **Format 3:** You provide a cue; your student uses it to find the answer.

Teacher: What's the subject, James?

Student 1: *Happy.*

Teacher: James, when I ask you for the subject, I am asking for who or what the sentence is about. Now, James, see if that can help you find the subject.

James: *Mother.*

Teacher: Good, James. The subject is *mother.*

- **Format 4:** Another student provides a cue; the initial student uses it to find the answer.

Teacher: What's the subject, James?

James: *Happy.*

Teacher: Who can tell James what I am asking for when I ask for the subject?

Student 2: You're asking for who or what the sentence is about.

Teacher: Yes, I am asking for who or what the sentence is about. James, what's the subject.

James: *Mother.*

Teacher: Good, James. The subject is *mother.*

I use the word *cue* here to mean a hint that *offers additional useful information to the student in a way that pushes him or her to follow the correct thinking process.* A hint, by contrast, could offer any information. If I ask, "Can anyone give James a hint to help him find the subject?" a student might say, "It starts

with the letter *m*." This would surely help James guess the answer but doesn't teach him anything that will help him next time.

When you ask your students to provide a cue, be sure to provide guidance as to what kind of cue would be useful. Three cues are particularly useful:

- The place where the answer can be found:
  "Who can tell James where he could find the answer?"
- The step in the process that's required at the moment:
  "Who can tell James what the first thing he should do is?"
- Another name for the term that's a problem:
  "Who can tell James what *denominator* means?"

So how should you go about deciding which type of *No Opt Out* to use? As a rule of thumb, sequences in which students use cues to answer questions are more rigorous than those in which students merely repeat answers given by others, and sequences in which students do more of the narration and intellectual work are generally preferable. At the same time, there's no way to slow down enough to cue every student in the most rigorous way toward the answer to every question that stumps somebody. You'd never get anything else done. And if you do, you risk not only losing your momentum but you allow students to co-opt the lesson by constantly feigning ignorance and cleverly taking you off task. In seeking to balance between providing cues (slow but rigorous) and providing answers (fast but more superficial), you'll probably find it helpful to go back to your objective. The closer the question you asked is to your lesson objective, the worthier of a slower and more cognitively rigorous *No Opt Out* it probably is. If it's a peripheral topic, speed through it by taking the right answer quickly from a peer, asking for a repeat of it by the original student, and moving on.

No matter what balance you strike, students in your classroom should come to expect that when they say they can't answer or when they answer incorrectly, there is a strong likelihood that they will conclude their interaction by demonstrating their responsibility and ability to identify the right answer.

TECHNIQUE 2
RIGHT IS RIGHT

Right Is Right is about the difference between partially right and all-the-way right—between pretty good and 100 percent. The job of the teacher is to set a high standard for correctness: 100 percent. The likelihood is strong that students will stop striving when they hear the word *right* (or *yes* or some other proxy), so there's a real risk to naming as right that which is not truly and completely right. When you sign off and tell a student she is right, she must not be betrayed into thinking she can do something that she cannot.

KEY IDEA

RIGHT IS RIGHT

Set and defend a high standard of correctness in your classroom.

Many teachers respond to almost-correct answers their students give in class by rounding up. That is they'll affirm the student's answer and repeat it, adding some detail of their own to make it fully correct even though the student didn't provide (and may not recognize) the differentiating factor. Imagine a student who's asked at the beginning of *Romeo and Juliet* how the Capulets and Montagues get along. "They don't like each other," the student might say, in an answer that most teachers would, I hope, want some elaboration on before they called it fully correct. "Right," the teacher might reply. "They don't like each other, and they have been feuding for generations." But of course the student hadn't included the additional detail. That's the "rounding up." Sometimes the teacher will even give the student credit for the rounding up as if the student said what he did not and what she merely wished he'd said, as in, "Right, what Kiley said was that they don't like each other and have been feuding. Good work, Kiley." Either way, the teacher has set a low standard for correctness and explicitly told the class that they can be right even when they are not. Just as important, she has crowded out students' own thinking, doing cognitive work

that students could do themselves (e.g., "So, is this a recent thing? A temporary thing? Who can build on Kiley's answer?").

When answers are almost correct, it's important to tell students that they're almost there, that you like what they've done so far, that they're closing in on the right answer, that they've done some good work or made a great start. You can repeat a student's answer back to him so he can listen for what's missing and further correct—for example, "You said the Capulets and the Montagues didn't get along." Or you can wait or prod or encourage or cajole in other ways to tell students what still needs doing, ask who can help get the class all the way there until you get students all the way to a version of right that's rigorous enough to be college prep: "Kiley, you said the Capulets and the Montagues didn't get along. Does that really capture their relationship? Does that sound like what they'd say about each other?"

In holding out for right, you set the expectation that the questions you ask and their answers truly matter. You show that you believe your students are capable of getting answers as right as students anywhere else. You show the difference between the facile and the scholarly. This faith in the quality of a right answer sends a powerful message to your students that will guide them long after they have left your classroom.

SEE IT IN ACTION: CLIP 2

RIGHT IS RIGHT

In clip 2 on the DVD, Annette Riffle of North Star Academy demonstrates *Right Is Right*. She calls on a student to explain how the rules for ordered pairs on a coordinate grid work—that the x coordinate always come first. The student notes that the "x-axis has to come first and then the y-axis." Most teachers would call this answer correct, but Riffle insists on the student being all the way right and calling them the "x and y coordinates." She has the student integrate the correct terms into her answer by reanswering.

This clip also shows the power of technique 32, *SLANT* (introduced in Chapter Five), as the student tracks the speaker during her answer.

Over the years I've witnessed teachers struggle to defend right answers. In one visit to a fifth-grade classroom, a teacher asked her students to define *peninsula.* One student raised his hand and offered this definition: "It's like, where the water indents into the land." "Right," his teacher replied, trying to reinforce participation since so few hands had gone up. Then she added, "Well, except that a peninsula is where land indents into water, which is a little different." Her reward to the student for his effort was to provide him with misinformation. A peninsula, he heard, is pretty much "where the water indents into the land" but different on some arcane point he need not really recall. Meanwhile, it's a safe bet that the students with whom he will compete for a seat in college are not learning to conflate bays and peninsulas.

A better response might have been, "A bay is what you call it when water indents into land. But a peninsula is a land formation. Who can tell me what a peninsula is?" with the sequence ending with the kind of definition students get when their teachers believe they are going to college: "A peninsula is a formation where land is surrounded on three sides by water. Write that down in your notes, please. A peninsula is a formation where land is surrounded on three sides by water."

Though as teachers we are the defenders of right answers, of the standards of correctness, there are in fact four ways in which we are at risk of slipping in holding out for right and thus four categories within the *Right Is Right* technique:

1. **Hold out for all the way.** Great teachers praise students for their effort but never confuse effort with mastery. A right answer includes the negative sign if a negative sign is warranted. There no such thing as "Right! Except you need a negative sign." When you ask for the definition of a noun and get "a person, place, or thing," don't do students the disservice of overlooking the fact that the answer is incomplete: a noun is a person, place, thing, or idea.

Simple, positive language to express your appreciation for what a student has done *and* your expectation that he or she will now march the last few yards is often the best way to address such a situation and retain positive tone in your classroom. Here are some phrases to do that:

- "I like what you've done. Can you get us the rest of the way?"
- "We're almost there. Can you find the last piece?"
- "I like most of that . . ."

- "Can you develop that further?"
- "Okay, but, there's a bit more to it than that."
- "Kim just knocked a base hit. Who can bring her home?"

Another effective response is to repeat the student's words back to him or her, placing emphasis on incomplete parts if necessary:

- "A peninsula is *water* indenting into *land*?"
- "You just said that a noun is a person, place, or thing . . ."
- "You just said that a noun is a person, place, or thing, but *freedom* is a noun, and it's not exactly any of those three."
- "You just said that first you would solve the exponent and then you'd solve what's in parentheses."

2. **Answer the question.** Students learn quickly in school that when you don't know the right answer to a question, you can usually get by if you answer a different one, especially if you say something true and heartfelt about the wider world. Can't identify the setting in the story? Offer an observation about the theme of injustice in the novel instead: "This reminds me of something from my neighborhood." Most teachers can't pass up a student's taking on issues of justice and fairness, even if what they asked about was the setting. Over time, students come to recognize this.

If you're a Right Is Right teacher, though, you know that the "right" answer to any question other than the one you asked is wrong.

If you're a *Right Is Right* teacher, though, you know that the "right" answer to any question other than the one you asked is wrong and you'll insist that the student answer the question you asked, not the one she wished you asked or what she confused it for. You might respond with something like, "We'll talk about that in a few minutes, Daniella. Right now I want to know about the setting."

Another situation in which students answer a question other than the one you asked is when they conflate different types of information about a topic. For example, you ask for a definition ("Who can tell me what a compound word is?"), and a student replies with an example ("*Eyeball* is a compound word!"). Or alternatively, you ask them to describe a concept ("When

we refer to the area of a figure, what are we talking about? Who can tell me what area is?") and a student replies with a formula to solve for the concept ("Length times width"). In the thick of the action, it's easy to miss that these are right answers but to the wrong question. And as you begin to listen for them, you'll find these kinds of exchanges far more common than you might expect.

If you ask students for a definition and get an example, try saying, "Kim, that's an example. I want the definition." After all, knowing the difference between an example and a definition matters.

3. **Right answer, right time.** Students sometimes want to show you how smart they are by getting ahead of your questions, but it's risky to accept answers out of sequence. For example, when you are teaching students the series of steps needed to solve a problem and a student you call on to provide step 3 gives the whole answer, you have a problem. Accepting her answer before you've shown all the steps required deprives the rest of your students of a full understanding of the process. It's tempting to think that it's a good thing that the class is moving ahead quickly, but it's not. It's one student. And besides, teaching a replicable, repeatable process is more important than teaching the answer to this problem. So it cheats the class if you respond favorably to one student's desire to move to the end. Instead, consider responding with something like, "My question wasn't about the solution to the problem. It was about what we do next. What *do* we do next?"

Alternatively, if you are asking what motivates a character's actions at the beginning of a chapter, you might prepare to resist accepting or engaging an answer that discusses—even very insightfully—the more dramatic events that conclude the chapter, especially if the point of the discussion of the first part is to better understand the ending when you get there. If it was really possible to jump ahead to the end and still understand the topic of the lesson, you might ask yourself why you were teaching the first part anyway! The answer, of course, is probably that the first part is important. This argues for protecting the integrity of your lesson by not jumping ahead to engage an exciting "right" answer at the wrong time.

4. **Use technical vocabulary.** Good teachers get students to develop effective right answers using terms they are already comfortable with: "Volume is the amount space something takes up." Great teachers get them to use precise technical vocabulary: "Volume is the cubic units of space an object occupies." This response expands student vocabularies and builds comfort with the terms students will need when they compete in college.

SEE IT IN ACTION: CLIP 3

RIGHT IS RIGHT

In clip 3 on the DVD, Jason Armstrong, a math teacher at Boston's Roxbury Prep Charter School, models *Right Is Right*. In this lesson, he demonstrates three of the subtechniques in the first two minutes of his lesson with a group of sixth graders. It's hard not to notice how his use of the techniques ratchets up the level of academic expectation quickly and decisively.

Armstrong: We're going to do a couple of things with volume today. Then we're going to practice volume and then surface area. Can someone give me a definition for volume to get us started? Mark?

Mark: Volume is length times width times height.

Armstrong: You're telling me how we're going to solve for volume. If you say "length times width times height," you're giving me a calculation. What I want to know—and you probably know this too, Mark—is what volume is. [a perfect example of answer my question] What is that amount? Yeritza?

Yeritza: Volume is the amount of square cubes that takes up something.

Armstrong: Okay, but I want to refine what you said—"the amount of cubes." What should we say? What's the technical definition instead of just cubes? What were you going to say, Wes?

Wes: The amount of cubic inches that a rectangular prism or a three dimensional figure takes up.

Armstrong: Right, any three dimensional figure. But I don't want to just say cubic inches because it's not necessarily inches. It could be feet, it could be centimeters, it could be yards . . . [Classic all the way right here. So many teachers would have accepted these answers.]

Wes: Cubic units.

Armstrong: [writing on the overhead] So the amount of cubic units that an object takes up . . . and, Donte, I know you know the other word. What's the other word for takes up?

Donte: Occupies.

Armstrong: Yes. *Occupies.* Volume is the amount of cubic units that an object occupies. [He caps it off by stressing the technical vocabulary, *occupies*. Is it any wonder Armstrong's students are among the top-scoring math students in the state of Massachusetts?]

TECHNIQUE 3
STRETCH IT

When students finally get an answer all the way right, there's a temptation, often justified, to respond by saying "good" or "yes" or by repeating the right answer, and that's that. Just as often, though, the learning can and should continue after a correct answer has been given. So it's great to remember to respond, as many of champion teachers do, to right answers by asking students to answer a different or tougher question or by using questioning to make sure that a right answer is repeatable, that is, the student knows how to get similar right answers again and again. The technique of rewarding right answers with more questions is called **Stretch It**.

KEY IDEA

STRETCH IT

The sequence of learning does not end with a right answer; reward right answers with follow-up questions that extend knowledge and test for reliability. This technique is especially important for differentiating instruction.

This technique yields two primary benefits. First, by using *Stretch It* to check for replicable understanding, you avoid falsely concluding that reliable

mastery of material has been achieved without eliminating the possibility that luck, coincidence, or partial mastery led to a right answer to the question asked. Second, when students have indeed mastered parts of an idea, using *Stretch It* lets you give them exciting ways to push ahead, applying their knowledge in new settings, thinking on their feet, and tackling harder questions. This keeps them engaged and sends the message that the reward for achievement is more knowledge.

Asking frequent, targeted, rigorous questions of students as they demonstrate mastery is a powerful and much simpler tool for differentiating.

Incidentally, this also helps you solve one of the thorniest classroom challenges: differentiating instruction to students of different skill levels. We're sometimes socialized to think we have to break students up into different instructional groups to differentiate, giving them different activities and simultaneously forcing ourselves to manage an overwhelming amount of complexity. Students are rewarded with a degree of freedom that's as likely to yield discussions of last night's episode of *American Idol* as it is higher-order discussions of content. Asking frequent, targeted, rigorous questions of students as they demonstrate mastery is a powerful and much simpler tool for differentiating. By tailoring questions to individual students, you can meet students where they are and push them in a way that's directly responsive to what they've shown they can already do.

There are several specific types of *Stretch It* questions that are especially effective:

- **Ask *how* or *why*.** The best test of whether students can get answers right consistently is whether they can explain how they got the answer. Increasingly, state assessments ask these questions explicitly—one more reason for you to ask students to practice narrating their thinking process.

Teacher: How far is it from Durango to Pueblo?

Student: Six hundred miles

Teacher: How'd you get that?

Student: By measuring three inches on the map and adding two hundred plus two hundred plus two hundred.

Teacher: How'd you know to use two hundred miles for each inch?

Student: I looked at the scale in the map key.

- **Ask for another way to answer.** Often there are multiple ways to answer a question. When a student solves it one way, it's a great opportunity to make sure they can use all available methods.

Teacher: How far is it from Durango to Pueblo?

Student: Six hundred miles

Teacher: How'd you get that?

Student: By measuring three inches on the map and adding two hundred plus two hundred plus two hundred.

Teacher: Is here a simpler way than adding three times?

Student: I could have multiplied 200 times 3.

Teacher: And when you do that you'd get what?

Student: Six hundred

Teacher: Very nice. That's a better way.

- **Ask for a better word.** Students often begin framing concepts in the simplest possible language. Offering them opportunities to use more specific words, as well as new words with which they are gaining familiarity, reinforces the crucial literacy goal of developing vocabulary.

Teacher: Why did Sophie gasp, Janice?

Student: She gasped because the water was cold when she jumped in.

Teacher: Can you answer with a word different from *cold,* one that shows how cold it was?

Student: Sophie gasped because the water was freezing.

Teacher: Okay, how about using one of our vocabulary words?

Student: Sophie gasped because the water was frigid.

Teacher: Very nice.

- **Ask for evidence.** As students mature, they are increasingly asked to build and defend their conclusions and support opinions from among multiple possible answers. This is especially the case in the humanities. Who's to say what the theme of the novel is, or what the author intended to show in a given scene? By asking students to describe evidence that supports their conclusion, you stress the process of building and supporting sound arguments in the larger world, where right answers are not so clear. You also give yourself grounds to avoid reinforcing poor but subjective interpretations, a task that is often challenging for teachers. You don't have to say you don't agree, just ask for the proof.

Teacher: How would you describe Dr. Jones's personality? What traits is he showing?

Student: He's spiteful.

Teacher: And *spiteful* means?

Student: *Spiteful* means that he's bitter and wants to make other people unhappy.

Teacher: Okay, so read me two sentences from the story that show us that Dr. Jones is spiteful.

- **Ask students to integrate a related skill.** In the real world, questions rarely isolate a skill precisely. To prepare students for that, try responding to mastery of one skill by asking students to integrate the skill with others recently mastered:

Teacher: Who can use the word *stride* in a sentence?

Student: "I stride down the street."

Teacher: Can you add some detail to show more about what *stride* means?

Student: "I stride down the street to buy some candy at the store."

Teacher: Can you add an adjective to modify *street*?

Student: "I stride down the wide street to buy some candy at the store."

Teacher: Good, now can you add a compound subject to your sentence?

Student: "My brother and I stride down the wide street to buy some candy at the store."

Teacher: And can you put that in the past tense?

Student: "My brother and I strode down the wide street to buy some candy at the store."

Teacher: Those were very challenging questions Charles, and look how well you handled them!

- **Ask students to apply the same skill in a new setting.** Once students have mastered a skill, consider asking them to apply it in a new or more challenging setting:

Teacher: So what's the setting of our story?

Student: The setting is in a town called Sangerville in the recent past.

Teacher: Good. I notice that you remembered both parts of setting. Can you remember the setting of *Fantastic Mr. Fox* then?

Student: It was on a farm in the recent past.

Teacher: How do you know it was the recent past?

Student: They had tractors.

Teacher: Good. But what about movies? Do movies have a setting?

Student: Yes.

Teacher: Great. I'll tell you a setting and you see if you can tell me the movie.

SEE IT IN ACTION: CLIP 4

RIGHT IS RIGHT AND STRETCH IT

In clip 4 on the DVD, Leah Bromley of North Star Academy demonstrates *Right Is Right* and *Stretch It*. Asked to draw a conclusion from a set of data comparing slope with stream depth, a student in Bromley's class replies: "The different slope affects how deep the stream is." Bromley notes that the answer is pretty close to correct but still holds out for more: "I need somebody who can make that more specific." To be right in her

class, students have to explain what the effect is: "The steeper the slope, the deeper the stream is."

Now that she's gotten her class to a fully "right" answer, Leah begins asking a series of questions to stretch her students. First, "What's the opposite of that?" a question she asks to ensure that students can apply the same relationship in reverse, and then, "Now I want someone to take this one step further and use the word *erosion*." In this case, she asks students to upgrade with more rigorous vocabulary. Then after arguably another *Right Is Right* (in which the answer has to be more concise to be right), she asks students to *Stretch It* again and explain why.

All of this cognitive work—explaining the opposite of the phenomenon, using better vocabulary to describe it, and explaining why—all happen after she's gotten a correct answer from her students. The right answer is just the beginning.

Stretch It asks students to be on their toes: to explain their thinking or apply knowledge in new ways. Just asking a quantity of tough questions isn't necessarily sufficient. In one fifth-grade classroom, a student was asked by her teacher to use the vocabulary word *passion* in a sentence. "I have a passion for cooking," she replied. "Who else can use *passion* in a sentence?" the teacher asked. "I have a passion for basketball," answered a boy. The teacher accepted with a nod where she might have stretched. Here was an opportunity to test whether the student really understood how to use the word or was just making a rote copy of a previous example. The teacher might have asked the student to use the adjective form of *passion*. Instead, she simply asked, "Anyone else?" Four or five students methodically used the same sentence structure but replaced the object noun with some other—"I have a passion for dancing," "I have a passion for riding my bike"—making it an exercise in banal copying of a basal concept, and, ultimately, low expectations.

Think of all the ways the teacher could have used *Stretch It* with her students at an equal or lesser cost of time than the activity she chose:

- "Can you rewrite your sentence to have the same meaning but start with the word *cooking*?"
- "What's the adjective form of *passion*? Can you rewrite your sentence using *passion* in its adjective form?"

- "If Marie had a passion for cooking, what sorts of things would you expect to find in her house?"
- "What would be the difference between saying, 'I was passionate about cooking,' and saying 'I was fanatical about cooking?'"
- "What's the opposite of having a passion for something?"

TECHNIQUE 4
FORMAT MATTERS

The complete sentence is the battering ram that knocks down the door to college.

In school, the medium is the message: to succeed, students must take their knowledge and express it in a variety of clear and effective formats to fit the demands of the situation and of society. It's not just what students say that matters but how they communicate it. The complete sentence is the battering ram that knocks down the door to college. The essays required to enter college (and every paper written once there) demand fluent syntax. Conversations with potential employers require subject-verb agreement. Use **Format Matters** to prepare your students to succeed by requiring complete sentences and proficient grammar every chance you get.

Teachers who understand the importance of this technique rely on some basic format expectations:

- **Grammatical format.** Yes, you should correct slang, syntax, usage, and grammar in the classroom even if you believe the divergence from standard is acceptable, even normal, in some settings, or even if it falls within a student's dialect—or more accurately, even if you perceive it to be normal within what you perceive to be a student's dialect. In fact, you may not know how a student's family or community speaks or what it views as normal or acceptable. And there is some history of young people adopting dialects or choosing to speak in a way different from the way their parents do or wish them to.

To gloss the vast sociological discourse on what's standard, whether it's the only right form of language and even whether it is in fact correct, champion teachers accept a much more limited but practical premise: there is a language of opportunity—the code that signals preparedness and proficiency to the broadest possible audience. It's the code that shows facility with the forms of language

CHAPTER FOUR

ENGAGING STUDENTS IN YOUR LESSONS

Great teachers engage students so that they feel like part of the lesson. They make a habit of focused involvement in the classroom. While that may already sound easier said than done with the most resistant students, it's doubly challenging since students need to be engaged in not just the class but in the *work* of class. That is, you could easily engage students in class by substituting frills for substance. The techniques reviewed in this chapter will consistently draw students into the work of class and keep them focused on learning.

TECHNIQUE 22
COLD CALL

When calling on students during class, it's natural to think about managing who gets to participate and think, "How do I give everyone a chance?" "Whose turn is it?" or "Who will give me the answer I want?" However, a more important question to ask is, "How can I adapt my decisions about which students I call on to help all my students pay better attention?" The idea, of course, is that you want everybody to pay attention and develop a system that ensures that all students think it's possible that they are about to be called on, regardless of whether they have raised their hand, and therefore think they must therefore prepare to answer. You need a system that ensures that instead of one student answering each of your questions, all of your students answer all of your questions in their minds, with you merely choosing one student to speak the answer out loud. **Cold Call** is that system.

KEY IDEA

COLD CALL

In order to make engaged participation the expectation, call on students regardless of whether they have raised their hands.

When you cold call, you call on students regardless of whether they have raised their hands. It's deceptively simple: you ask a question and then call the name of the student you want to answer it. If students see you frequently and reliably calling on classmates who don't have their hand raised, they will come to expect it and prepare for it. Calling on whomever you choose regardless of whether the student's hand is up also brings several other critical benefits to your classroom.

It's critical to be able to check what any student's level of mastery is at any time.

First, it allows you to check for understanding effectively and systematically. It's critical to be able to check what any student's level of mastery is at any time, regardless of whether he or she is offering to tell you. In fact it's most important when he or she is not offering to tell you. *Cold Call* allows you to check on exactly the student you want to check in on to assess mastery, and the technique makes this process seem normal. When students are used to being asked to participate or answer by their teacher, they react to it as if it were a normal event, and this allows you to get a focused, honest answer and therefore check for understanding reliably. This means that while using *Cold Call* to assist you in checking for understanding is critical, you'll also do best if you use it before you need to check for understanding. Your goal is to normalize it as a natural and normal part of your class, preferably a positive one.

Second, *Cold Call* increases speed in both the terms of your pacing (the illusion of speed) and the rate at which you can cover material (real speed). To understand the degree to which this is so, make an audiotape of your lesson sometime. Use a stopwatch to track how much time you spend waiting (and encouraging and cajoling and asking) for volunteers. With *Cold Call,* you no

longer have a delay after you ask, "Can anyone tell me what one cause of the World War I was?" You no longer have to scan the room and wait for hands. You no longer have to dangle hints to encourage participants or tell your students that you'd like to see more hands. Instead of saying, "I'm seeing the same four hands. I want to hear from more of you. Doesn't anyone else know this?" you simply say, "Tell us one cause of World War I, please, [slight pause here] Darren." With *Cold Call,* you'll move through material much faster, and the tedious, momentum-sapping mood when no one appears to want to speak up will disappear. These two results will increase your pacing: the illusion of speed you create in your classroom, which is a critical factor in how students engage (see Chapter Three for more on pacing).

With Cold Call, *you no longer have a delay after you ask, "Can anyone tell me what one cause of the World War I was?"*

Third, *Cold Call* allows you to distribute work more broadly around the room and signal to students not only that they are likely to be called on to participate, and therefore that they should engage in the work of the classroom, but that you want to know what they have to say. You care about their opinion. Many students have insight to add to your class but will not offer it unless you push or ask. They wonder if anyone really cares what they think. Or they think it's just as easy to keep their thoughts to themselves because Charlie's hand is always up anyway. Or they have a risky and potentially valuable thought on the tip of their tongue but aren't quite sure enough of it to say it aloud yet. Sometimes there will even be a glance—a moment when this student looks at you as if to say, "Should I?" or maybe even, "Just call on me so you've shared responsibility if this is totally off the mark."

Many people mistakenly perceive cold calling to be chastening and stressful. Once you've watched clips 7, 8, and 9 on the DVD, you'll know that it's not.

Many people mistakenly perceive cold calling to be chastening and stressful. Once you've watched clips 7, 8, and 9 on the DVD, you'll know that it's not. When it's done right, it's an extremely powerful and positive way to reach out to kids who want to speak but are reluctant to be hand raisers. It says, "I want to hear what you say," even if Charlie's hand is up for the tenth time in twelve questions.

Fourth, *Cold Call* will help you distribute work around the room not only more fully (that is, beyond the hand raisers) but more authoritatively. One of its positive effects is that it establishes that the room belongs to you. Not only will this allow you to reach out to individual students, but it will have a strong cultural effect in that it will draw out engagement. If I am pretty sure that at some point in the next few hours or day you're going to call on me to respond to our class work, I have a strong incentive to do that work in anticipation of this probability. You have made me accountable. This is an incredibly powerful force. People sometimes ask, "Which one of these techniques should I do first?" or "If I can teach my teachers to do only one, which will make the biggest difference?" For the reasons I've described above, the single most powerful technique in this book is, I believe, *Cold Call.* But while making a habit of calling on students regardless of whose hand is up is one of the most critical techniques you can use to drive universal achievement, all cold calling is not equally effective. You can do it wrong; doing it right will ensure that it has the effect you intended. The success of the technique relies on the application of a few key principles:

- **Cold Call *is predictable.*** Cold calling is superb preventive medicine but less effective as a cure. It is a way to keep students' attention from drifting, but is not as effective once they're off task. It's an engagement strategy, not a discipline strategy.

If you cold call for a few minutes of your class almost every day, students will come to expect it and change their behavior in advance.

When a stimulus is predictable, it changes behavior by anticipation, not just by reaction. If you cold call for a few minutes of your class almost every day, students will come to expect it and change their behavior in advance; they will prepare to be asked questions at any time by paying attention and readying themselves mentally. If your cold calls surprise students, they may learn a lesson ("Darn, I should have been ready!"), but this will be too late to help them. Unless they know there'll surely be a next time very soon, they won't have cause to change their behavior before you ask your question. They may also feel ambushed, caught off guard, and therefore more likely to be thinking about the past ("Why'd she do that?") than about the future ("I'm going to be ready!").

If cold calls are predictable and students begin to anticipate them, the effect will be universal. The possibility (indeed, the likelihood) of a cold call affects all students, not just those who actually get cold called. You want students to react beforehand to the reliable possibility, not after the unpredictable fact. You

want them always ready for the call that might come, not deciding after the fact to be ready for the next one. And you want all of them thinking that way.

Cold calling, then, should be part of the fabric of everyday life in your class. A little bit of it every day will have a stronger effect on classroom culture than a great deal of intensive but inconsistent or unexpected cold calling. At some point in most lessons, students should be asked to participate regardless of whether they have raised their hands.

Furthermore, since the purpose of *Cold Call* is to engage students before they tune out, many teachers find that the beginning of class is the ideal time for this technique. This allows them to set the tone for the rest of the day and engage students before they can become distracted. *Cold Call* is preventive medicine. Take it daily to keep the symptoms from ever appearing.

- **Cold Call *is systematic.*** Teachers who use *Cold Call* signal that these calls are about their expectations, not about individuals. They take pains to make it clear that cold calls are universal (they come without fail to everyone) and impersonal (their tone, manner, and frequency emphasize that they are not an effort to single out any student or students). The less a cold call carries emotion, the less it seems tied to what a student has or has not done, to whether you are happy or disappointed with him, whether you think he did his homework.

The message should ideally be, "This is how we do business here." The teachers interviewed for this book use *Cold Call* with an even, calm tone and spend a minimum amount of time appearing to hem and haw about which student to call on. Questions come at students quickly, clearly, and calmly, in clusters directed to multiple students, in multiple locations around the room, rather than focused on a single student or group of students in isolation. They should take in all types of students—not just those who might become off-task or who are sitting in the back. After all, a cold call is not a punishment; it is a student's chance, as Colleen Driggs puts it, "to shine."

Some teachers emphasize the systematic nature of *Cold Call* by keeping visible charts tracking who's been called on. What could send a clearer message that everyone gets their share than a tracking system in which every name gets checked off in good time?

- **Cold Call *is positive.*** The purpose of *Cold Call* is to foster positive engagement in the work of your class, which ideally is rigorous work. One of its benefits is that students occasionally surprise themselves with what they are capable of. They do not volunteer because they do not think they can answer, but when they are forced to try, they are happily surprised to find themselves succeeding. In so doing they also benefit from knowing that you thought they could answer the question. You show your respect and faith in a student when you

ask her to join the conversation. But this works only if your questions propose to ask students to contribute to a real conversation rather than to catch them out and chasten them. This is the aspect of *Cold Call* that teachers are most likely to get wrong. There's part of many of us that wants to use it as a "gotcha"—to call on a student when we know he was tuned out to show him that fact or prove some sort of a lesson to him ("What did I just say, John?" or "Isn't that right, John?"). But this rarely works since causing a student to publicly founder on purpose and with no potential benefit at stake is more likely to make him ask questions about you ("Why's she always picking on me?") than about himself.

The goal is for the student to get the answer right, not learn a lesson by getting it wrong.

A positive cold call is the opposite of a gotcha in two ways. First, it is substantive. "What did I just say?" is not a substantive question. It's a gotcha, designed to "teach a lesson" that in fact it rarely teaches. "Do you think Lincoln declared war on the South primarily to eradicate slavery?" is a real question. "What is the subject in this sentence?" is a real question. You might ask a peer such a question in the faculty room, and this shows that you respect the person of whom you are asking the question. Second, the goal is for the student to get the answer right, not learn a lesson by getting it wrong. You want your students to succeed, to feel good and maybe even a little surprised by that success, even while they are challenged and stretched by the healthy tension of *Cold Call.* Remember that *Cold Call* is an engagement technique, not a disciplinary technique. It keeps students on task and mentally engaged. Once a student is off task, the *Cold Call* opportunity has passed. Then you should use a behavioral technique.

You can ensure a positive cold call by asking questions that pertain to the lesson and suggest you are making a genuine invitation to a student to participate in the conversation. Use *Cold Call* in an upbeat and positive tone, suggesting that you couldn't imagine a world in which a student would not want to participate.

One final aspect of *Cold Call* that leads to a positive tone occasionally eludes some teachers when they aren't prepared: the question and what an answer could look like should be clear. Every teacher has had the experience of asking a student a question that in retrospect wasn't clear, where even a well-informed and engaged student wouldn't know what to say. It's doubly important to avoid this kind of question when cold calling, and many teachers address this challenge by planning their exact questions in advance and word for word as part of their lesson planning process.

- **Cold Call *is scaffolded.*** This technique is especially effective when you start with simple questions and progress to harder ones, drawing students in, engaging them on terms that emphasize what they already know, and reinforcing basic knowledge before pushing for greater rigor and challenge. This will often require "unbundling," or breaking a single larger question up into a series of smaller questions.

Consider this sequence from the classroom of Darryl Williams as he teaches his third graders to identify the complete sentences from among a list of several choices:

Williams: Read the next choice for me, please, Kyrese.

Kyrese: [reading from the worksheet] "Have you seen a pumpkin seed?"

Williams: Do we have a subject, Japhante?

Japhante: Yes.

Williams: What's the subject?

Japhante: "You."

Williams: "You." Excellent. Do we have a predicate, Eric?

Eric: Yes.

Williams: What's the predicate?

Eric: "Seen."

Williams: "Seen." Excellent. Is it a complete thought, Rayshawn?

Rayshawn: Yes.

Williams: Is that our complete sentence?

Rayshawn: Yes.

Williams: So we just keep going? What do we need to do, Shakaye?

Shakaye: We need to look at the other two [answer choices] because that might sound right but one of the other two might sound right too.

The sequence involves calling on five students in rapid succession and follows a careful progression of increasing difficulty. The first question merely asks a student to read what's in front of him. The difficulty level is low. Williams is

scaffolding; anyone can get it right. The next question ("Is there a subject?") is an incredibly simple yes-or-no question designed for the student of whom it is asked to get it right. When he does, Williams comes back with the more difficult question ("What is the subject?"), but that question now comes on the heels of the student's previous success and after Williams has engaged him in the process of thinking about sentence structure. After asking another student a similar sequence, he goes on to harder questions about whether the sentence is complete and what strategy students should take next in answering the question. By breaking the basic question, "Is it a complete sentence?" into smaller parts and starting with simple questions, Williams successfully engages students and ensures their readiness when he asks more difficult questions. By parsing the question out to five students instead of one, he also ensures fuller participation and the expectation that participation is a predictable and systematic event.

A more subtle method of scaffolding is to allow students to begin answering cold calls about work that they have already done and have the answers in front of them. This again begins the sequence with something they are likely to get right. Darryl Williams began his sequence of *Cold Call* above with a request to Kyrese to "read the next [answer] choice for me." This engages the student at the outset at a level where he is almost sure to succeed: he merely has to read what's in front of him. Furthermore, a cold call that asks a student, "Please tell us your answer to the first problem, Milagros," employs scaffolding because Milagros has done the work and has an answer in front of her. She begins by merely reporting back on her work. Of course, a sequence that begins with such simple questions would ideally progress to more rigorous follow-up questions that did ask Milagros or Kyrese to think on their feet. One of the misperceptions some teachers have about this technique is that it is only a way to ask simple questions. But its questions should be as rigorous as you can make them—something students will come to take pride in as they see themselves able to handle demanding material on the spur-of-the-moment. Starting simple doesn't mean ending that way, but it does tend to engage and motivate kids and cause students to be inspired by the building level of rigor and challenge.

Using *Cold Call* to follow up on previous comments in class underscores how much you value students' participation and insight. It also emphasizes that your students' engagement in what their peers say is as important as their engagement in what you say. There are three varieties to consider:

- *Follow-on to a previous question.* Ask a simple question using *Cold Call*—think of it as a warm-up—and then ask the student a short series of further questions (most teachers ask two to four) in which her opinions are further developed or her understanding further tested.

- *Follow-on to another student's comment.* This reinforces the importance of listening to peers as well as teacher: "James says the setting is a dark summer night. Does that tell us everything we need to know about the setting, Susan?" or "What does *exploit* mean, Stephen? Good and who gets exploited in *Macbeth,* Markeesha?"
- *Follow-on to a student's own earlier comment.* This signals that once the student has spoken, she's not done: "But, Yolanda, you said earlier that we always multiplied length and width to find area. Why didn't we do that here?"

Beyond these principles, there are several elements champion teachers apply, vary, and adapt to maximize the benefit of *Cold Call* in a wider variety of settings. These are key variations on the *Cold Call* theme:

- **Hands Up/Hands Down.** You can use *Cold Call* and continue allowing students to raise their hands if they wish, or you can instruct your students to keep their hands down. Both versions emphasize different aspects of the technique.

Taking hands allows you to continue encouraging and rewarding students who ask to participate, even if you sometimes call on those who don't have their hands raised. You merely move between taking hands and cold calling at your discretion. This continues providing incentives to students to raise their hands while also allowing you to add sophistication to your scaffolding. When you're allowing hands during your cold calling, you can, say, cold call students for the first three questions in a sequence and then save the capper, the last and potentially the toughest or most interesting question, for a volunteer, thus differentiating instruction and making academic challenge a reward in and of itself. One factor to consider in allowing students to raise their hands while you cold call is that it may cause your use of *Cold Call* to be less apparent and transparent and thus less systematic. That's because it may not always be obvious to students whether the classmate who got called on had her hand up or was cold called. Taking hands also gives you an important data point. Even if you ignore it, it tells you who thinks they know well enough to volunteer. Thus, if you want to try to call on students whose mastery is unsteady, you have a clearer idea of who to try.

You can also decide to tell students to put their hands down, that you're not taking hands, and then proceed to cold call whomever you wish. This sends a more forceful message about your firm control of the classroom, and it makes your cold calling more explicit, predictable, and transparent ("I'm cold calling now"). It also tends to make the pacing of your cold calling, and thus your lesson, even faster because you don't spend time navigating hands. Finally, hands down can be more effective for checking for understanding in two key ways. First, it

reduces the likelihood of students' calling out answers in eagerness. While truly a sin of enthusiasm, calling out is corrosive to your classroom environment and specifically to your ability to steer questions to the students who need to work or those you need to assess. Second, because students who do want to answer are rendered less visible (they don't have their hands up), your decision to target your checking for understanding of more reticent students is less patently visible and therefore seems a bit more systematic.

A last caveat is that most champion teachers appear to use both hands up and hands down as a matter of habit, with their choice determined by the situation. One possible reason for this is that using only hands up is not as forceful and energetic and using only hands down is a disincentive to hand raising over the long run. With enough time, it risks convincing students not to bother raising their hands at all, since doing so is never rewarded. In that case a teacher had better really like *Cold Call* because she'll have few hands offered and few alternatives.

Using this sequence—"Question. Pause. Name."—ensures that every student hears the question and begins preparing an answer during the pause that you've provided.

- **Timing the Name.** *Cold Call* can vary in terms of when you say the name of the student you're calling on. The most common and often the most effective approach is to ask the question, pause, and then name a student, as in, "What's 3 times 9? [pause], James?" Using this sequence—"Question. Pause. Name."—ensures that every student hears the question and begins preparing an answer during the pause you've provided. Since students know a cold call is likely but not who will receive it, every student is likely to answer the question, with one student merely called on to give their answer aloud. In the example, it means that every student in the class has done the multiplication in the pause between question and name. If you say the name first, twenty-four fewer students practice their multiplication. The difference in leverage between this scenario (twenty-five students answering a question and one saying it aloud) and the alternative (one student answering a question and twenty-four watching) is so dramatic that it should be the default approach to most of your cold calling.

In some cases, calling a student's name first can be beneficial. Often it can prepare a student to attend and increases the likelihood of success. This can be especially effective with students who may not have been cold called before, students who have language processing difficulties, or students whose knowledge of English is still developing. In its most exaggerated form, this is known as a

precall. In a precall, you tell a student that he or she can expect to be called on later in the lesson. It can happen privately (a teacher might say to a student before class, "Okay, Jamal, I'm going to ask you to go over the last problem from the homework today. Be ready!") or publicly ("Paul's going to give us the answer, Karen, but then I'll be asking you why!").

Another instance in which it is productive to state the name first is for clarity. For example, if you are coming out of a sequence of *Call and Response* (the following technique in this chapter), in which students have been calling out answers in unison, dropping in a name first and then asking the question makes it clear to students that you are no longer using *Call and Response* and thus avoids the awkward and counterproductive moment when some students attempt to answer in unison a question you had intended for an individual.

- **Mix with other engagement techniques.** *Cold Call* responds especially well to mixing with other engagement techniques. *Call and Response* is a perfect example: moving back and forth between whole group choral response and individual responses at a rapid energetic pace can drive up the level of positive energy dramatically. It can also allow you to ensure that students aren't coasting during *Call and Response.* To take a simple example, you could review multiplication tables with your students by asking everyone to call out answers to a few problems:

Teacher: Class, what's 9 times 7?

Class: 63!

Teacher: Good what's 9 times 8?

Class: 72!

Teacher: Good, now Charlie, What's 9 times 9?

Class: 81!

Teacher: Good. What's 9 times 9, class?

Class: 81!

Teacher: Good and, Matilda, what was 9 times 7 again?

Matilda: 63!

By toggling back and forth, you can cause individual students to review material or reinforce a successful answer by having the class repeat it.

Pepper (technique 24, later in this chapter) is another engagement technique that works well with *Cold Call.* In fact it's very similar to *Cold Call* in that it consists of rapid-fire questions that are often cold called. Finally, *Everybody Writes* (technique 25, later in this chapter) is a preparation for *Cold Call,* as it allows everyone to prethink the topic or questions you'll be addressing; this increases the likely quality of responses.

Teachers often conclude that *Cold Call* questions must be simple. In fact, *Cold Call* questions can and should be rigorous and demanding. Part of their power lies in having students feel the pride of answering demanding questions at the spur of the moment. Following is a transcript of a session of *Cold Call* executed by Jesse Rector of North Star Academy's Clinton Hill campus. Rector is an exceptional math teacher with exceptional results and a following within our organization for his craft. The rigor of his questioning shows why. See how many of the following *Cold Call* questions, asked of seventh graders in rapid-fire succession, *you'd* get correct.

Rector: I'm a square field with an area of 169 square feet. What's the length of one of my sides, Janae?

Janae: 13.

Rector: 13 what? [Asking Janae for the units is an example of *Format Matters,* technique 4.]

Janae: 13 feet.

Rector: I'm a square field with a perimeter of 48 feet. What's my area, Katrina?

Katrina: 144 square feet.

Rector: Excellent. I'm a regular octagon with a side that measures $8x$ plus 2. What is my perimeter, Tamisse?

Tamisse: $64x$ plus 16.

Rector: Excellent. I am an isosceles triangle with two angles that measure $3x$ each. What is the measure of my third angle, Anaya?

Anaya: 180 degrees minus $6x$.

Rector: Excellent, 180 degrees minus $6x$. The square root of 400 is what, Frank?

Frank: 100.

Rector: No, the square root of 400 isn't 100. Help him out.

David: 20.

Rector: That's right; it's 20. Tell him why.

David: Because if you multiply 20 by 20, you'll get 400.

SEE IT IN ACTION: CLIP 7

COLD CALL/PEPPER

In clip 7 on the DVD, Jesse Rector is modeling *Cold Call*. You'll notice that his students are standing up, this makes the fact that he's going to use *Cold Call* obvious or, in the language of the technique, "predictable." Jesse gives the lie to that notion. To prove it, just try to keep up with his seventh graders yourself in answering the questions. This is also a good example of *Pepper*: a significant quantity of questions (not necessarily cold calls, though in this case they are) asked rapidly around a given number of themes (geometry and square roots here), with little discussion in between. You can read more about *Pepper* later in this chapter. After you've done so, rewatch Jesse's video and see how he puts both techniques to work.

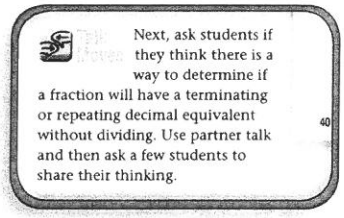
The first time you use *Cold Call*, your students may wonder what's going on, and with some justification. They may have never been cold called before. They may not have been in a classroom where that kind of thing happened. They might not see the connection between *Cold Call* and their getting to college, say, or they might be inclined to see it as a negative rather than a positive situation. Thus, it's a good idea to script some brief remarks—in essence, a rollout speech—to use the first time with *Cold Call*. Your brief remarks can explain the what and why. This makes the exercise rational, systematic, predictable, and, with a little skill, inspiring.

Guiding the Discussion

Classroom discussion is a key component in *Math Innovations*. Discussions can include the whole class, small groups or partners. Classroom discussions are especially effective in moving student thinking forward and developing students' collective understanding of key mathematical ideas. Teachers are strongly urged to allow time for students to share and discuss ideas, discoveries and solution strategies at several points throughout the lessons. Sometimes students are asked to discuss errors or incorrect procedures. While some think this will confuse students, the opposite occurs! Students clarify their understanding of the material when they have had to address their preconceived notions and misconceptions.

Teachers are also encouraged to be mindful of key vocabulary terms and symbols highlighted in the Student Edition and to emphasize their appropriate use in class discussions. Students must not only understand the meaning of these terms, but must also become fluent in the precise use of mathematical language. Teachers should expect students to use this mathematical language on a daily basis during class discussions and in their writing. As they explicitly encourage students to use this language, teachers should remind students that this helps them think and talk like mathematicians, which is a recurring goal of the *Math Innovations* program.

Talk Moves


Next, ask students if they think there is a way to determine if a fraction will have a terminating or repeating decimal equivalent without dividing. Use partner talk and then ask a few students to share their thinking.

Several strategies can be used to facilitate meaningful classroom discussions. Chapin, O'Connor, and Anderson (2009) refer to these strategies as *talk moves*. The *Math Innovations* program recommends teachers use the following six talk moves:

Revoicing

The teacher *restates/revoices* a student's words as accurately as possible and then verifies whether the student's response was correct. This move can be used when a student's response is unclear or confusing. It also can be used when a student's contribution is unique and brilliant, but not understood by the majority of the class. For example, a teacher might ask, "You said that triangle was equilateral and scalene? Did I get that right?" The student then has a chance to restate what he or she meant. Often the next utterance is much more succinct; "No, I meant that if the triangle is equilateral, then it cannot be scalene too." This talk move helps students to clarify their thinking.

Repeat/rephrase

When using *repeat/rephrase* the teacher focuses the discussion on the main ideas of the lesson. After a student has made a particularly important point or comment, the teacher asks another student to restate the point by asking, "Would you repeat what he/she said in your own words?" It is important to use this move to highlight ideas that are foundational, no

matter how small, or ideas that are not well-understood. For example, many students are confused by how the size of a denominator of a fraction affects the size of a fractional piece. This talk move can be used to ask a number of students to repeat a classmate's explanation for why $\frac{1}{8}$ is less than $\frac{1}{3}$. Do not ask students to repeat information that everyone already understands. Teachers can also follow up with the student who contributed the original thought to ensure that the idea was heard as intended. This not only validates the idea, but also gives the class another version of the idea. This talk move slows down the instruction in order to give students enough time to process what they are learning and helps students stay engaged and involved in the lesson. Many teachers have found that the use of this talk move especially benefits English language learners.

Agree/disagree and why

Agree/disagree and why is the most important talk move, as it asks students to reason about another's contribution. It is used after the teacher makes sure that students heard and had time to process the mathematical idea. By posing questions like, "Do you agree or disagree with that idea? Why?" teachers can draw out student thinking by having them apply their understanding to someone else's thoughts. It is important that teachers do not offer their positions, but instead allow students to wrestle with their own ideas. Teachers can help students focus on the correct concepts after they have had the chance to develop their own reasoning.

Adding on

Teachers encourage students to participate further in a class discussion by using *adding on*. Posing a question like "Would someone like to add on to what was just said?" solicits more input to the discussion. Surprisingly, students are not bored when more than one student contributes the same information. In fact, for many students hearing the same information a number of times helps them fully process the new content. Students also learn new approaches and problem-solving strategies when teachers elicit additional contributions. When students have to make sense of different solution methods, they must consider how these methods are similar or different from their own.

Wait time

Wait time involves waiting at least ten seconds before calling on a student for an answer once a question has been posed. This move gives students an opportunity to think about and organize their ideas. It also serves to encourage all students to contribute, not just those who process their thoughts quickly. Wait time should also be used once a student has been called upon to share an idea or respond to a question. A comment like, "We'll wait...take your time," usually serves this purpose. It is important for all students to become active in class discussions to reap the learning benefits.

Talk 'Moves'—for Classroom Discourse

Talk Moves	Example
**Revoicing	**"So let me see if I've got your thinking right. You're saying _____?" (providing time for the student to complete the statement)**
**Asking students to restate someone else's reasoning	**"Please repeat what he just said in your own words."**
**Asking students to apply their own reasoning to someone else's reasoning	**"Do you agree or disagree and why?" OR "How do you feel about her response? Please explain your thinking."**
**Prompting students for further participation	**"Who would like to add to this comment ?" OR "What other ideas are out there?"**
**Asking students to explicate their reasoning	**"Why do you think that?" OR "What evidence helped you to arrive at that answer?" OR "Please say more about that."**
**Using wait time	**"Take your time...we'll wait. We want to hear what you think."**

Adapted from Michaels, S; Shouse, A and Schweingruber, H. 2007. *Ready, Set, Science! p. 91*