

TOOLS

FOR

IGNITING CURIOSITY

**Classroom-Ready Techniques for Increasing
Engagement and Inspiring the Love of Learning**

Over 20 tools for

- Sparking curiosity
- Sustaining curiosity over time
- Cultivating curious, self-motivated learners

Bryan Goodwin | Harvey F. Silver | Susan Kreisman | Matthew J. Perini

Foreword by R. Thomas Dewing



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Foreword

During my youth, I lived on a small dairy farm in upstate New York. Not far from our house was a small creek that flowed around a curve. While paving the roads, the county decided that this curve, which had been there for who knows how many years, needed to be straightened. In came the workers with their heavy equipment, digging, filling, and ignoring completely the natural bend of the creek. My father, a cornucopia of folksy sayings, warned them repeatedly: “You can’t go against Mother Nature.” Of course, they disregarded him, as the job had to be done.

What do you think happened?

With the very first heavy spring rain, the road washed out completely. So the county went to it again, this time bringing in the really big machines, extra gravel, and steel reinforcements. And sure enough, the next spring’s rains washed the road out a second time. On the third try, the county got the bright idea to incorporate the natural flow of the creek into their design. Today, decades later, the road remains, curving in unison with the creek.

As so often turns out to be the case, the truth is simple, and my father was right: Going against nature is a fool’s errand.

Unfortunately, I hear my father’s words echoing in my mind with alarming frequency in my work as an educator. Why? Because it seems that far too many schools seem to have forgotten that children are curious by nature: Young children seek what or who is hiding behind the curtain; they yearn to discover what’s inside an unopened package; they wonder why the sky is blue. Regardless of ethnicity, socioeconomic background, or family conditions, you’ll see the same glimmer in the eyes at that moment of discovery, when a student can say with pride, “Ah-ha! I figured that out, and now I know.”

This natural curiosity doesn’t end in grade school. Children, adults, *humans* are inherently curious. When confronted with almost anything new, humans immediately get to wondering: What is *this* and what am I in relationship to it? And yet, even though this curiosity is natural and naturally motivating at any age, our schools often fail to capitalize on and cultivate it. Perhaps it’s the concern over test scores or the pressure to cover the content that has gotten us to this place. Whatever the reason, our response should be the same: We need to design and deliver instruction that goes with the natural flow of students’ curiosity.

So here’s the good news: Going with the flow of students’ curiosity doesn’t need to be difficult. And better yet, when teachers and schools commit themselves to teaching with curiosity in mind, things change dramatically.

I have seen this great power of curiosity make a difference at every level.

I remember so clearly from my days as a young teacher what that glow in twenty-five children's faces looked like when they finally solved a mystery I had set up for them. That look gave me the energy to do even better the next day.

As a gifted coordinator and a principal, I worked with teachers to design instruction with the thread of curiosity running through every lesson and unit. So often, parents would come to my office to express their gratitude, overflowing with excitement because their child was looking forward to coming to school for the first time since kindergarten.

And today, as a consultant and coach to schools around the country, I see both the presence and the lack of curiosity on an almost daily basis. What I can tell you from this work is that every single school that makes a point of nourishing students' curiosity sees the same outcomes: higher levels of engagement, deeper understanding, and most important, a love of learning that you can feel when you walk down the halls and enter classrooms.

That's why I am so excited about this book. It shows educators how to go with the natural flow of students' curiosity to raise excitement, enhance learning, and help students hone their curiosity into a powerful learning mindset. The book takes the best research on curiosity and provides user-friendly tools that help teachers put the research to work in ways that will enliven and enrich any classroom, starting tomorrow.

The tools work. I have helped educators around the country integrate these tools into their practice, and the results are always striking. "Teaching is fun again," so many teachers say. And of course, that fun is infectious, influencing students and their attitudes toward learning. One teacher recently told me that the high level of excitement she now sees in her students "almost makes her cry." This is what happens when educators have real tools for putting curiosity at the center of their work. The entire culture changes into a "home for the mind"—a place that inspires the love of learning.

So, let's use these tools to inspire that love of learning in our students.

Let's go with the flow.

R. Thomas Dewing, EdD
Education consultant and author

13 Ways of Looking at a Topic

What is it?

A planning tool that uses a set of simple questions to help teachers find the aspects of a topic that will foster student curiosity and energize teaching and learning

What are the benefits of using this tool?

Have you ever considered just how incredible a volcano, or the Pythagorean Theorem, or the Bill of Rights really are? Classroom content is truly full of wonders. Sometimes, though, teachers are so close to their content that they can forget how rich and amazing it can be. When this happens, teaching can go flat, quashing student curiosity. This lesson-planning tool, which is inspired by Wallace Stevens's famous poem, "Thirteen Ways of Looking at a Blackbird," is designed to help teachers rekindle (or kindle for the first time) their love affair with the content they teach. It provides thirteen distinct ways of searching for curiosity-boosting "best bets"—those aspects or attributes of classroom topics that excite teachers' passion to teach and spark students' desire to learn. The tool also helps teachers integrate these best bets into their lessons and units.

What are the basic steps?

1. Select a topic that you are about to teach.
2. Review your own understanding of the topic. Identify the big ideas and key supporting details that you want students to understand.
3. Use the questions at the top of the 13 Ways Planning Form (p. 14) to help you find particular aspects or attributes of the topic that are especially interesting to you and/or likely to spark student curiosity. Check off any ways that you plan to pursue in your lesson or unit.

Note: The goal isn't to check off all thirteen boxes. Instead, look for a manageable number of best bets that you believe have the greatest chance of raising curiosity in relation to the topic.

4. Decide how you will integrate your chosen best bets into your lesson or unit. Use the space on the 13 Ways Planning Form to work through your ideas. Here are some questions you might ask about each best bet to help you integrate it into your instructional design:
 - Can you build a lesson around it?
 - Can you design a task around it?
 - Can you conduct a discussion or Socratic Seminar on it?
 - Can you connect it to students' lives, experiences, and concerns?
 - Can you create an essential question to help students explore it deeply?
 - Can you engage students in an inquiry into its causes and/or effects?

How is this tool used in the classroom?

- ✓ To find the aspects of a topic that are most likely to raise student curiosity
- ✓ To facilitate lesson and unit planning that will increase students' desire to learn
- ✓ To energize teaching and learning

EXAMPLE 1: Primary science

In planning an extended lesson, a first-grade teacher decides to use just one question from the 13 Ways Planning Form (“What’s amazing about it?”) to open students’ eyes to the wonders of something they take for granted—trees. To begin the lesson, she places a large poster at the front of the room with the question “What’s so amazing about trees?” During the extended lesson, the teacher regularly stops, redirects students’ attention to the poster, and captures any new and “amazing” information that the class has learned about trees. The completed poster is shown below.



EXAMPLE 2: Secondary ELA

A high school English teacher is planning a unit on Shakespeare's *Othello*. He uses the 13 Ways Planning Form to look for new ways to increase student curiosity in the play. Below are the four ways the teacher settled on as best bets, along with his notes for how to integrate each best bet into the unit.

Othello

What's UNIQUE about it?

- Iago = evil genius
- He is considered one of the greatest villains ever created.
- What's so uniquely disturbing about him is that he uses people's goodness against them: "So will I turn her virtue into pitch, / And out of her own goodness make the net / That shall enmesh them all."

How to integrate: Iago is an archetype and the model for several pop culture villains who adopt his tactics. I will challenge students to find examples of pop culture villains based on Iago and explain their choices.

What's CONTROVERSIAL about it?

- Depictions of race and gender
- Is it racist?
- Is it sexist?
- Is it fair to judge works of art by today's standards?

How to integrate: These questions will make for a rich and provocative Socratic Seminar. I will encourage students to take on the controversy directly during the Socratic Seminar.

What's RELATABLE about it?

- Jealousy
- Love
- Manipulation/gullibility
- Passions getting the best of us

How to integrate: These are universal themes and emotions we've all experienced. Throughout the unit, we will regularly discuss connections to students' own lives. Students will write in their journals about their feelings, reactions, and relevant experiences.

What good is it in the "REAL WORLD"?

- How can a play written over 400 years ago help us learn how to manage our emotions?

How to integrate: This will be one of the essential questions for the unit. We'll use it to look at ourselves and to explore the idea of "Shakespeare the psychologist"—someone with preternatural insight into human behavior.

13 Ways Planning Form

Which ways of looking at your topic are your “best bets” for sparking student curiosity?

- | | |
|---|--|
| <input type="checkbox"/> 1. What’s unique/novel/unprecedented about it? | <input type="checkbox"/> 9. How do people react to it? What are some different perspectives or opinions on it? |
| <input type="checkbox"/> 2. What’s controversial about it? | <input type="checkbox"/> 10. What good is it in the “real world”? |
| <input type="checkbox"/> 3. What’s strange/mysterious about it? | <input type="checkbox"/> 11. Where are there opportunities within it to create suspense? |
| <input type="checkbox"/> 4. What’s relatable about it? | <input type="checkbox"/> 12. Where are there opportunities within it for students to make discoveries? |
| <input type="checkbox"/> 5. What’s humorous/funny about it? | <input type="checkbox"/> 13. What about it gets you fired up? Why are you excited to teach it? |
| <input type="checkbox"/> 6. What’s amazing / hard to believe about it? | |
| <input type="checkbox"/> 7. Why do people care about it? | |
| <input type="checkbox"/> 8. What’s something about it that most people overlook / don’t know / get wrong? | |

How will you incorporate your best bets into your lesson or unit?

Questions Are QUESTS

What is it?

A tool that helps teachers turn classroom questioning into learning “quests” and teaches students a thinking process for developing thoughtful responses to higher-order questions

What are the benefits of using this tool?

Many of the words associated with the act of questioning (*question, query, inquiry*) come from roots meaning “to seek” or “to go in search of.” This makes perfect sense. After all, only the simplest questions have answers that are right at hand. Good questions require students to think deeply and to search actively—to quest—for information that will help them construct a quality response. Questions Are QUESTS helps teachers develop “quest-worthy” questions and establish a classroom culture that encourages students to pursue new learning related to those questions. It also helps students build the habits of sophisticated thinkers who understand that good responses are not ready-made, but are developed and refined over time through ongoing learning and discussion.

What are the basic steps?

1. Review a unit or lesson sequence you will be teaching. Identify the big ideas and the key learning targets you expect students to meet.
2. Develop a quest-worthy question for students to explore during the unit. A quest-worthy question will spark curiosity, promote inquiry into the big ideas of the unit, and require students to build and refine their responses over time. See the sample questions on p. 56 for ideas.
3. Present the question to students at the beginning of the unit.
Note: You can make the question more curiosity-inducing and more meaningful for students by providing background knowledge and/or a context for the question. For example, see how the teacher in the classroom example on p. 56 sets up her question about predicting the weather.
4. Explain that students will be using the QUESTS process to go in search of learning and develop their responses over time. Use the handout on p. 57 to introduce and model the steps before having students use the process to tackle the question you presented in Step 3.
5. Prepare students to develop their responses by facilitating relevant learning activities, helping students collect important information, and giving students regular opportunities to share and refine their ideas with their classmates.
6. Ask students to construct a response that synthesizes what they have learned.
7. Encourage students to keep the handout in their notebooks and to use the QUESTS process to help them develop high-quality responses. Reinforce that the steps in QUESTS are the behaviors that good thinkers use to craft better, more sophisticated responses.

How is this tool used in the classroom?

- ✓ To develop quest-worthy questions
- ✓ To teach students a process for developing deeper, more thoughtful responses to questions
- ✓ To establish a classroom culture that promotes inquiry, discussion, and in-depth learning

The Questions Are QUESTS process is driven by a rich, quest-worthy question that will inspire students to go in search of new learning that can help them build their response. Examples of quest-worthy questions are shown below, followed by a fleshed-out classroom example showing how a teacher guides students through the QUESTS process.

- Why do plants grow in places where people haven't planted them?
- What's the difference between using statistics and abusing statistics?
- How is a colony like a child?
- How have writers from a wide variety of cultures contributed to our understanding of the American experience?
- How are functions used in the real world?
- Is cosmetology more of an art or a science?

EXAMPLE: Elementary science

A fourth-grade teacher begins a unit on weather by providing some background knowledge. She tells students that even though today's meteorologists have advanced equipment and technology to help them, they still get the weather forecast wrong sometimes. She then poses a question designed to provoke their curiosity and guide the QUESTS process: "Why is the weather so hard to predict?"

The teacher works with students to "question the question" to help them recognize that it is asking them to develop an explanation, or provide reasons why the weather is hard to predict. Then, over the course of the unit, the teacher leads students on a quest to build their understanding and develop and refine their responses. More specifically, she

- Encourages students to tap into their prior knowledge and offer their initial responses to the question. Initial student responses include "Because predicting the future is not really possible" and "Because storms form too fast."
- Engages students in a learning sequence that helps them develop their understanding of the weather and the factors involved in predicting it.
- Has the class track the weather for two weeks.
- Allows students to meet regularly in small groups to discuss their learning and refine their initial ideas and responses.

At the end of the unit, the teacher makes the process of responding to the question more authentic and engaging by asking students to imagine that they are a local weatherperson who gets lots of angry calls whenever the forecast is not perfectly accurate. Taking the position of the local weatherperson, students have to defend themselves by explaining to the public why it is difficult to predict the weather perfectly.

Questions Are QUESTS

<p>Question the question.</p>	<p>Examine the question closely. What is it asking? What kind of thinking will it take to respond to it? Will you be developing an explanation, making a comparison, developing an argument, thinking speculatively, etc.?</p>
<p>Understand that you are on a "quest."</p>	<p>You will be going on a collaborative search with your classmates for ideas and information that can help you respond to the question. The idea is not to find a quick answer; the idea is to build and refine your response over time as you learn more during the unit.</p>
<p>Establish what you know.</p>	<p>Your prior knowledge is often a powerful tool to help you begin building your response. What do you already know about the topic of the question? Jot down anything you know or have learned that might help you respond to the question.</p>
<p>Search for information and ideas.</p>	<p>As you learn more during the unit, be on the lookout for any ideas or information that can help you develop and add to your response. Make notes and/or pictures to capture important information and to help you recall what you have learned when you need it.</p>
<p>Talk about your ideas.</p>	<p>We learn better when we have the chance to test, compare, and think through our ideas with other people. Share your ideas and look for ways to make them stronger whenever your teacher gives you opportunities to talk with a partner, in small groups, or as a whole class.</p>
<p>Show what you know.</p>	<p>A good response will show that you understand the relevant material from the unit. Before developing your response, look back on your learning. What's important to include in your response? How you can organize your ideas to make your response clear?</p>

