Extract from
"Formative Classroom Walkthroughs" — Connie Moss + Susan M Brookhart, 2015.

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Looking for a Worthwhile Lesson

Is today's lesson part of a larger learning trajectory that leads to important curricular outcomes?

Each day, students should be asked to learn important things, work at appropriate but challenging levels of rigor, and grow in their understanding of the knowledge in the discipline for which that lesson was designed. A learning target theory of action puts "first things first," and in every case, the initial question leaders should investigate is this: *Should students be learning this today?* By looking for a worthwhile lesson, you will learn how teachers understand the logic of students making progress over time with important concepts and ideas. You will reach a deeper understanding of how evidence from what students do, say, make, and write shows where they are in their journey to important standards. And you will be able to compare the evidence of learning demonstrated through what students actually did in their work (their performance of understanding) to desired subject, grade-level, and discipline goals.

Traditional walkthroughs ask leaders to look for unconnected instructional strategies. Without a cohesive theory of action, however, leaders are hard pressed to explain how the strategies relate to each other or work together to promote student learning. The adage of not being able to see the forest for the trees is applicable. Think of it this way: to support teacher learning for improved student learning and achievement, we should be gathering evidence about the quality of the forest, rather than counting the number of trees. In contrast, formative walkthroughs employ an intentional and intense

learning focus that is cohesive and theoretically grounded. All the instructional strategies in the world will never add up to an ounce of student understanding if we are asking students to learn trivial things.

What Is a Worthwhile Lesson?

Worthwhile lessons derive their value from three sources, and, like the legs of a three-legged stool, all three are necessary. The three sources are (1) national/state standards and district curriculum goals, (2) important concepts or skills in the content for the specific lesson, and (3) the specific needs of the students.

The first step in planning learning experiences and teaching a worthwhile lesson is to select exactly what to teach. Planning decisions should be guided by the national and state standards and district curriculum goals that a teacher is responsible for teaching. This connection ensures that daily lessons add up to something important. In other words, today's lesson and each lesson that precedes or follows it should have a "reason to live" (Moss & Brookhart, 2012, p. 17). Principals and coaches who are conducting walkthroughs to learn about and promote significant professional learning targets should begin their inquiry by understanding the worth of a particular lesson. They can do this by asking: *Why is this teacher asking these students to learn this chunk of information on this day and in this way?*

We often think of a good lesson as one that fits into a "scope and sequence." Teachers must decide what is important to teach on a particular day given the curricular goals for which they are responsible, and they must know how to make that content accessible to a particular group of students. That means teachers must think about how to give their students a schema or a conceptual map of the specific area of the discipline they are being asked to learn (National Research Council, 2000). Although research tells us that various instructional strategies and learning processes can support the learning needs of students, the first decision-making process that teachers use to improve student achievement is to figure out which things students should learn when, in what order, and how. It is completely possible to find elements such as "technology" and "brain-based learning strategies" in a lesson in which students are focused on trivial things. And although it may come across as "old

school," educators have long understood that attention to organizing elements, principles, and structure is important if we wish to avoid classroom curriculum that is just a sequencing of interesting activities (Tyler, 1950).

When effective teachers plan with that end in mind, they ensure that their students' learning comes from the lesson's strong connection to specific standards and curricular goals. They also ensure that their students learn the important content that will help them master that standard. By planning with mastery in mind, teachers and those who coach them will be better able to assess where students are in relation to that content, how ready they are to learn it, and what particular student needs must be met to help students learn and achieve the lesson's goals. No learning target, regardless of how elegantly it is stated or communicated to students, can be the basis for a good lesson if it means that students are going to learn unimportant things.

For example, an 8th grade social studies standard/curricular goal might be "Students will understand what the Gettysburg Address meant in 1863 and what it means today." When we watch what the students are doing to learn the content and skills that will get them to that standard, we can learn a great deal about the lesson's worth. In one classroom, the following learning target statement guides the lesson: "I can explain how Lincoln made the connection between fallen soldiers on a battlefield and the federal government." In another classroom, we find this learning target statement: "I can dress up like Lincoln and read the Gettysburg Address to the class." Clearly the second lesson, although connected to a standard, does not engage the students in worthwhile content and will not meet their learning needs.

Consider another set of classroom examples. This time both classrooms are headed for the same 4th grade instructional objective: "Students will be able to correctly use frequently confused words (e.g., to, too, two; there, their) in their writing." In the first classroom we find this learning target statement: "I can make a poster about frequently confused words." In a second classroom students are aiming for this learning target: "I can explain what the words 'to,' 'too,' and 'two' mean in my own words and find examples from the story to support my definitions." In which classroom would you predict that students are deepening their understanding of the content, skills, and reasoning processes that will help get them to mastery?

How Do Effective Teachers Design a Worthwhile Lesson?

Every discipline includes many things to learn. Standards and curricular goals help educators prioritize them. To plan a worthwhile lesson, teachers should start by thinking of the lesson as part of a potential learning trajectory toward a larger learning goal. And they should be able to explain where each specific lesson lies in the sequence of a student's progress toward that standard or goal. *Worthwhile lessons are part of worthwhile learning trajectories.*

Learning trajectories describe in words and examples what it means for students to progress over time toward increasingly expert levels of understanding. They depict successively more sophisticated ways of thinking about an idea or a concept that might reasonably follow another idea or concept as students learn. Learning trajectories are known by many different names, including "learning progressions," "progressions of developmental competence," and even "profile strands." Some advocate for the use of the term "hypothetical learning trajectories" to depict the "paths by which learning might proceed" (Simon, 1995, p. 135) when learning moves from a student's own starting point toward an intended learning goal. The word "hypothetical" reminds us that each student's learning path can never truly be known in advance. And although learning trajectories are not exactly linear, they do represent a growth in reasoning and cognition that is certainly not random (Maloney & Confrey, 2010).

We use the term "potential learning trajectory" for many of the same reasons, and to indicate that even the most carefully designed unit or group of lessons may need to be adapted based on the formative evidence we gather from our students about where they are and where they need to go next in their understanding. A potential learning trajectory that describes how individual lessons will lead students to significant learning outcomes creates a unifying focus on what teachers expect students to learn. A learning trajectory brings coherence to meaningful learning experiences for students beyond simply grouping topics and activities. "It is a matter of expressing priorities, sequences, and conceptual links among topics and instructional experiences, both within the content domain and perhaps more importantly across various domains" (Sztajn, Confrey, Wilson, & Edgington, 2012, p. 152). The ways teachers understand learning trajectories help leaders understand how teachers plan learning experiences for particular students or groups of

students and the information they tend to track and use as evidence of their students' growing competence. It also helps identify the kinds of feedback teachers give students and helps educators assess how effectively it feeds students toward specific learning targets and larger learning goals.

To plan a worthwhile lesson, effective teachers use a three-step process: (1) designing the potential learning trajectory that will meet national/state standards and curricular goals, (2) selecting important concepts or skills in the content for the specific lesson, and (3) meeting specific students' needs with the content and lesson goals.

Step 1: Designing the potential learning trajectory

Designing a lesson by focusing on what students will *learn* differs significantly from designing lessons around what students will *do* or *complete*. In our own work with educators we find this to be particularly challenging on two fronts. First, many teachers find it difficult to focus on what is important for students to learn rather than what students will do. And second, many educators aim for specific standards but then create a learning trajectory that is decidedly off the mark. Let's examine each challenge separately, using illustrative examples.

Example 1: A learning trajectory focused on "doing." A conversation we had with a group of elementary teachers sheds light on the first challenge: when planning, teachers tend to focus on student *doing* rather than student *learning*. The teachers were creating a potential learning trajectory for a set of lessons on writing a descriptive paragraph. Their initial thoughts went something like this:

> First students have to learn to write a descriptive phrase; they should be able to describe people, places, and things with more than one adjective. Then they have to write a complete sentence that describes a person, place, or thing. Next they have to be able to write three sentences that describe different parts of the same person, place, or thing. Finally, students need to write a main-idea sentence that begins the description of the person, place, or thing and a summary sentence that concludes their descriptive paragraph.

At first blush, this looks like a potential learning trajectory, but take a closer look. Examine the first step in the teachers' design: "Students have to learn to

write a descriptive phrase." Yes, the word "learn" is in there, but the statement does not describe what students will learn; it talks about what they will do. Where is the description of the learning? This is a common misconception that we often witness as teachers struggle to reframe their focus. The question that we pose to redirect their focus squarely on student learning is this: *What will students learn by doing it?* The teachers were able to revise the first step: "First students will learn that they can use special words called adjectives to paint a word picture about how a person, place, thing, or animal looks, sounds, feels, smells, and tastes."

Isaac Gadsby, a 12th grade economics teacher in the Lakeview School District in Pennsylvania, uses this self-regulation technique to make sure he keeps his focus squarely on what he wants his students to learn: "Five years from now if I see a student who has graduated, what would I want the student to remember from this lesson? The answer to this is usually a good place to start." Figure 4.1 is an example of a potential learning trajectory that Mr. Gadsby created for his students who were exploring the business of doing business. Notice his focus on the important learning that his students will aim for in each lesson and how mastering those concepts will help students reach the identified standards.

Example 2: Learning trajectories that "miss the mark." Rachel Morey, an English teacher at East High School in the Erie Public School District in Pennsylvania, had an "aha moment" as she described a learning trajectory to help her students write an informational essay. To advance writing across the curriculum, she routinely uses the same content that her students are studying in their social studies class—in this case, the Reconstruction Era in U.S. history. Her learning trajectory, a series of mini history lessons, centered on her students reaching a better understanding of Reconstruction rather than on learning how to improve their writing. When we asked her to describe her students as writers, she explained that they could extract information from text through underlining and highlighting key ideas; scanning the text for the who, what, when, where, why, and how; circling key words or familiar words; rereading the text; writing down/taking notes about important details; coding the text; and summarizing. They were less proficient with the strategy of "talking to the text" by writing comments or questions in the margins.

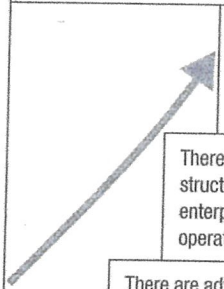
As Rachel Morey became more aware that mini history lessons would not improve students' ability to extract details from text, she shifted to planning a trajectory that would get her students to the goal. This was her new learning sequence: (1) the characteristics of fiction versus nonfiction text, (2) the "structure of the text"—sections and subtitles, (3) self-questioning to determine their purpose for reading the text; (4) selecting the best-fit strategy for the purpose and text structure. For example, if the students' goal was to find examples about one particular topic in a short piece of text, then simple underlining might be sufficient. What began as a miss-the-mark trajectory to learn more about Reconstruction now focused on learning how to assess text and choose strategies that aligned with the text and the reading purpose.

Figure 4.1 | **Potential Learning Trajectory**

12th Grade Economics: The Business of Doing Business

Economics Standards Addressed—6.3.12 E: Analyze the opportunity cost of decisions by individuals, businesses, communities, and nations. **6.3.9 A:** Describe ways to deal with scarcity. **6. 3.9 B:** Analyze how unlimited wants and limited resources affect decision making. **6.2. 9/12 E:** Explain the laws of supply and demand and how these affect the prices of goods and services. Predict how changes in supply and demand affect equilibrium price and quantity sold.

Potential Learning Trajectory



A strategic plan helps businesses adapt their organizational structure to changing business conditions like meeting the operational and career development needs of employees, responding to flat or declining profits, customer dissatisfaction, or if growth plans have changed.

There are two types of organizational structure that are important to a small business: the legal structure and the operational structure, and the optimal combination depends on what the enterprise produces, the number of employees, growth goals, and whether the business has been operating for years or is a startup.

There are advantages and disadvantages to the five types of businesses, and learning about them can help an entrepreneur plan a company.

There is a difference between values in a market system and values in a nonmarket system, where financial gain is not the prime motivator in the distribution of goods and services.

Self-interest is not selfish.

Source: © 2015 Isaac Gadsby, Lakeview High School, Lakeview School District, Pennsylvania. Used by permission.

"Miss-the-mark" learning trajectories are a phenomenon that we see across disciplines and grade levels. For example, elementary language arts teachers routinely tell us that students cannot summarize a piece of text, find the main idea, make an inference, or use cause and effect even though they learn these concepts "every year." In many cases, miss-the-mark learning trajectories are the culprit. A common pattern of these trajectories is a narrow focus on teaching students the details of a particular story rather than using the story as a vehicle to develop skills in fostering and monitoring comprehension. The tale of "The Three Little Pigs" helps us demonstrate the point. A miss-the-mark trajectory simply breaks the story into chunks of details that students must use to answer comprehension questions: "What materials did the pigs use?" "Why did the pigs want to build a strong house?" We are not saying that answering questions about story details is not important, but that is not the sole purpose of the story. If the purpose is for students to learn to compare and contrast, then the learning trajectory should aim for that goal. There are numerous stories children can read to deepen their understanding of this essential building-block skill. The miss-the-mark trajectory would certainly help children understand the story of "The Three Little Pigs," but they would not learn to examine two things or events side-by-side to explain how they are the same and how they are different.

Step 2: Selecting important content

Worthwhile lessons meet students on the growing edge of their learning. Lessons that are too hard, too easy, or irrelevant to your students' needs may look worthwhile (they may meet content requirements), but they will not be worthwhile to teach to your students. Once you identify the standard and curricular goals that guide your lesson, it's time to select meaningful, worthwhile content to help your students reach those goals. Remember, a worthwhile lesson focuses on important concepts and content that students need to master, not trivia. Dig into your own content knowledge as a relevant source of information about what is important for students to learn. The more deeply you understand your content, the better you can identify what is important for students to know and be able to do.

A worthwhile lesson teaches important content that leads to further concepts or skills in the discipline. Here's an example that illustrates our point about content that is important and content that is not. A 6th grade teacher

is planning a lesson to help her students reach the following state standard: "Students will be able to conduct inquiry and research on self-selected or assigned topics using a variety of appropriate media sources and strategies with teacher support." One of their instructional objectives is the following: "Students will demonstrate their understanding of how reading text on the Internet differs from reading a traditionally printed textbook." Today the students are learning why it is important to click on embedded links in web-based text and comparing the information they receive to information organized in printed textbooks. The lesson builds on previous lessons. Students already know the basics of navigating a website. They are skilled in using the "back" and "forward" buttons and clicking on links. This content leads to future lessons about how audio links create different learning experiences compared with the experience of reading printed text. Eventually students will analyze how specific media sources can help them research a topic. What students are learning in this lesson—*the importance of seeking linked information on a website to enhance their learning*—is just one of many lessons that it would take to meet the national standards. Because this lesson leads to the achievement of these standards, it meets the first support for a worthwhile lesson.

Here is where knowledge about selecting and delivering important content knowledge is critical. It is the second leg of the stool and the second support for a worthwhile lesson. The teacher's knowledge about reading informational text for meaning tells her that an important concept for students to master is how media links, when done right, enhance understanding in important ways. It would be possible, and sometimes fun, for students to have time just to surf the web as a group. There's nothing wrong with that as a free-time option, and students may even learn something about cooperation and responsibility. But a fun activity lacks the content leg of the stool. Without important content, reading things on the web is just an activity, not a worthwhile lesson.

Effective teachers select and deliver important content by identifying the knowledge, skills, and reasoning processes that are important to the lesson. To define the essential knowledge content for the lesson, ask yourself this question: *Which concepts, facts, ideas, principles, and generalizations are absolutely essential for students to come to know deeply and thoroughly during today's lesson?* In other words, how will this lesson increase students'

understanding of this essential knowledge? Think about where the lesson resides in the potential learning trajectory. Is this lesson introducing a concept? Building on a previous concept? Combining concepts to form more sophisticated understandings?

To identify the skill or skills that are central to the lesson, ask yourself: *What skills, procedures, and processes must students master at a level of proficiency or increased proficiency in this lesson?* In other words, exactly what must students learn to do more effectively? Consider where the lesson resides in the potential learning trajectory to decide what level of skill development is important. Are students just beginning or building on something they can already do (combining skills)? Should they become stronger, faster, or more proficient? Are they relearning or refining skills to close gaps in ability?

Finally, identify the reasoning processes that will help students construct meaning for essential content knowledge and gain proficiency with the lesson's skills. Remember, when students have to think to learn, they learn to think. Ask yourself: *What cognitive processes will help students make meaning—arrive at understanding—in this lesson? Will they compare and contrast, analyze, form a hypothesis, use experimental inquiry, or make an inference?* Remember that achievement of important standards requires a cohesive set of lessons that present ever-increasing and appropriate levels of challenge. The content teachers select and deliver in a lesson should provide intellectual challenges for students and invite them to stretch and grow.

Pat Babay, a 6th grade teacher at JoAnna Connell School in the Erie Public School District, shared this insight while planning a learning trajectory with his colleagues: "The learning trajectory is how we want our students to learn the story of what we are teaching—not just the facts. The story has to be told in that sequence or they won't understand." Pat's insight helped him view his lessons differently:

> I constantly use learning trajectories to break big concepts, processes, or skills down into smaller lesson-sized targets that can be learned to a level of mastery within the same class period. For example, we are working on tall tales. If I want students to write a tall tale at the end of the trajectory, I try and think of all the things that they will need to successfully accomplish that goal. I then make those my targets for four days to lead up to the actual writing of the tall tale—a

target about figurative language, one dealing with making sure the story that they write has a problem/outcome, solution, etc. We read a tall tale to focus specifically on its figurative language. The next day we read the same tall tale and focus on finding the problem/outcome for the story. A performance of understanding for that day might be "Consider yourself as a tall tale character and write a description of yourself using figurative language."

Organizing lessons in a potential learning trajectory tells the story of whatever you are teaching—how to multiply decimals, how the Nile River shaped civilization in ancient Egypt, or how to use the concepts of cause and effect. It creates a cohesive set of lessons that present ever-increasing and appropriate levels of challenge each day to help students progress ever closer to important standards and curricular goals.

Step 3: Meeting specific students' needs

Even a content-rich, interesting, standards-based lesson is not worthwhile to teach to particular students if they are not ready for it or if they do not need to learn it. Meeting students' needs starts with students having a clear understanding of what they are supposed to be learning in the lesson. Students need a learning target. Without one, it won't be clear to you or them whether they need to learn it and are ready for it. Meeting student needs doesn't mean students have to like everything they must learn. But they do need to understand *why* they have to learn it and where it fits in their learning trajectory toward important learning goals. In other words, they have to know why it's good for them. Most of the time, if students clearly understand what they are supposed to learn and how they are to show that they have learned it, they will be interested in trying. Developing and demonstrating competence is a major motivator for students.

First, a worthwhile lesson should require that students do, say, make, or write something that they clearly see develops their understanding and gives evidence of it. Ensure that what students will be asked to do during the lesson is connected to what they are supposed to be learning. Plan the lesson so that students actually do something, and help them understand that what they will do will develop their knowledge, skills, and reasoning. Thus a lesson that is all teacher talk is not worthwhile because students aren't actually doing

anything. A fun activity that doesn't help move students along some learning trajectory isn't worthwhile either—at least not as a lesson. This characteristic of a worthwhile lesson—what students are asked to do to learn—is so important, we spend Chapters 5 through 10 unpacking it. Students' performance predicts the quality of their learning and is the mechanism by which students get formative assessment information, as well.

Second, to meet students' needs, the lesson should present an appropriately increased level of challenge or sophistication; it shouldn't simply repeat yesterday's lesson. And although many skills that students learn require more than one lesson's worth of practice, what makes a lesson *not* worthwhile is repeating the same practice, for the same reasons. Students can practice skills with different focuses ("Today when I write a good paragraph, I am going to pay special attention to the way I write my supporting details for the main idea"). Students can practice the same skills with different types of exercises, such as measuring the area of their book in inches and then their classroom in feet. They can practice the same skills with different or more challenging material ("Today I find the main idea in newspaper articles, tomorrow in textbook passages"). They can practice skills they've already learned to get to increased fluency of application, accuracy, or speed. But what they should never do is feel like saying "Today I'm doing the same thing I did yesterday." They should know what they are aiming for in today's practice, and how that moves them forward from what they practiced yesterday.

Third, to meet students' needs, the lesson must acknowledge and support diversity in student readiness and ability to master the particular content knowledge, skills, and reasoning processes at this level of challenge. Students should never have to attempt work that sets them up to fail. Neither should students have to produce work that leaves them with the feeling that they didn't learn anything. The level of challenge should meet the Goldilocks principle and be neither too difficult nor too easy.

Effective teachers do this planning for specific student needs based on formative assessment information that they gather in three ways. First, they observe their students. ("Jocelyn looks tired today. I wonder why. I think I'll ask her.") Second, they observe students' work. ("In yesterday's lab about solids, liquids, and gases, Julio didn't give any explanations for how matter changes from one state to another. He'll need extra support today.") And finally, they observe students in the process of doing their work. ("When we

used newspapers for current events yesterday, Patty chose a very short article. I wonder if she was having trouble reading the long ones.")

The most relevant formative assessment information for planning today's lesson usually comes from observing what students did in yesterday's lesson. This is another good reason why every lesson needs a performance of understanding (which we cover in Chapter 6). If students don't do, say, make, or write anything, you don't have any information about what they can do—and neither do they.

Once you have information about students' learning needs, you can judge how worthwhile a particular lesson will be for each student in your class. If most of the students aren't up to it, don't teach that lesson. If most of the students don't need to learn it, don't teach that lesson. If the lesson meets the learning needs of most of the students, it's a worthwhile lesson. For those students who need additional help or an extension of their learning, you need to differentiate instruction.

Worthwhile lessons meet students' learning needs by presenting them with appropriate, increased levels of challenge; giving them opportunities to do something that they clearly see develops their understanding and gives evidence of it; and acknowledging and supporting diversity in students' readiness and interest. Worthwhile lessons take time to plan; simply winging it during the lesson is a sure recipe for disaster.

How Will I Recognize a Worthwhile Lesson?

As we stated at the start of this chapter, worthwhile lessons derive their value from three sources, all of which are necessary: (1) national/state standards and district curriculum goals, (2) important concepts or skills in the content for the specific lesson, and (3) the specific needs of the students. The Collaborative Inquiry Guide for a Worthwhile Lesson (Figure 4.2) will help you assess a lesson's worth by looking for those three sources from the student's seat.

The following scenario provides an example of a set of curriculum goals and a related lesson. Use the Collaborative Inquiry Guide to determine if this lesson is worthwhile based only on its connection to the curriculum goals.

Scenario 4.1 A 5th grade class is working on the following curriculum goals: (see page 63)

Figure 4.2 | **Collaborative Inquiry Guide for a Worthwhile Lesson**

Worthwhile lessons rest on three sources: standards and curricular goals, content, and student needs. Use the inquiry guide to learn and assess how well a lesson reflects all three.

Is the Lesson Tied to a Standard and a Curricular Goal?	**Yes**	**Somewhat**	**No**
The lesson contributes to an important curriculum goal or an important state or national standard. *Explain your choice:*			
The lesson makes clear to students how it fits into their learning trajectory for this curricular outcome to help them make progress by meeting both the curricular and student needs. *Explain your choice:*			
The lesson elicits evidence of content knowledge, skills, and reasoning processes that both students and teachers can use to help feed students forward along this trajectory. *Explain your choice:*			
Is the Lesson Content Worthwhile?	**Yes**	**Somewhat**	**No**
The lesson develops essential knowledge, skills, and reasoning processes students need for future learning in this discipline. *Explain your choice:*			
The lesson builds on discipline-specific content knowledge, skills, and reasoning processes students mastered in prior lessons to meet both the content requirements and the student needs. *Explain your choice:*			
Does the Lesson Meet Students' Needs?	**Yes**	**Somewhat**	**No**
The lesson presents an appropriately increased level of challenge or sophistication—does not simply repeat yesterday's lesson—to meet both the content requirements and the students' needs. *Explain your choice:*			
The lesson requires students to do, make, say, or write something that they clearly see develops their understanding and gives evidence of it while meeting curricular goals and students' needs. *Explain your choice:*			
The lesson acknowledges and supports diversity in students' readiness and ability to master the particular content knowledge, skills, and reasoning processes at this level of challenge. *Explain your choice:*			