Kentucky Department of Education

EDUCATION

Kentucky Department of Education

Model Curriculum Framework

Section III:
Balanced Assessment

April 2023

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Introduction to the Model Curriculum Framework

The **Model Curriculum Framework,** per [KRS 158.6451](#), provides guidance for schools and districts in implementing educational best practices in a way that creates curricular coherence to positively impact student success. Curricular coherence involves local alignment of standards, curriculum, instructional resources and practices, assessment, and professional learning within and across grade-levels in a district or school to help students meet grade-level expectations. According to research, schools that demonstrate increased curricular coherence also show marked improvements in student outcomes (Newmann, Smith, Allensworth, & Bryk, 2001). Figure 1.1 highlights the five key components of curricular coherence addressed within this document:

- **Section 1: Curriculum Development Process** – Outlines a systemwide process for articulating an instructional vision, developing a local curriculum aligned to the *Kentucky Academic Standards* (*KAS)* and selecting a primary high-quality instructional resource (HQIR) to support implementation.

- **Section 2: Professional Learning Communities** – Emphasizes a systems-based approach to developing a shared understanding of the PLC process as an aspect of continuous improvement, the role of leadership in creating a supportive culture and the role of teachers as effective collaborators within a PLC.

Figure 1.1. *Key Components of Curricular Coherence*

- **Section 3: Balanced System of Assessment** - Provides guidance on how teachers and leaders can implement a comprehensive, balanced system of assessments to ensure high-quality and reliable assessment practices with a focus on the formative assessment process and providing stakeholders with effective strategies for noticing, recognizing and responding to evidence of student learning.

- **Section 4: Evidence-Based Instructional Practices** - Supports leaders and teachers in understanding what constitutes an evidence-based practice, in coordinating a system of effective instruction aligned to disciplinary practices and outcomes of the *KAS* and in evaluating the quality of instructional resources.

The organization of this document mirrors the use of backward design, beginning with what educators must know and be able to do, proceeding to how learning will be assessed and concluding with how that translates into daily teaching and learning.

The five components of curricular coherence are essential to providing equitable access to learning for all students. Within U.S. schools, large racial and socioeconomic gaps still exist among graduation rates, test scores and advanced proficiency. Historically marginalized populations, such as students of color, English language learners and exceptional students, are less likely to be given access to high-quality curriculum and resources. A 2018 study, from districts around the country, found students of color and those from low-income backgrounds are less likely than white and higher-income students to have access to quality curriculum, instruction and grade-appropriate assignments (TNTP, 2018).

For educators to meet the challenge of helping **all** students reach grade-level expectations, they must have a clear vision of best practices in teaching and learning and a clear roadmap to follow throughout the year (Ainsworth, 2010). High-quality curriculum and instructional resources have the power to provide that roadmap by connecting standards, curriculum, effective instruction, assessment and professional learning (Achieve the Core, 2017).

To create curricular coherence, educators must understand the relationship between standards, curriculum and instructional resources. Figure 1.2 below highlights the differences between these terms as well as who has responsibility for each as defined in Kentucky law (KRS 160.345, 704 KAR 3:455).

Figure 1.2. *Defining Standards, Curriculum and Instructional Resources*

Promoting Student Equity Through Standards Implementation

STANDARDS	CURRICULUM	HIGH-QUALITY INSTRUCTIONAL RESOURCES

What's the Difference?

The *Kentucky Academic Standards (KAS)* address a foundational framework of *what* is to be learned.

The *KAS* contain the minimum requirements of what students should know and be able to do by the end of each grade level.

The curriculum addresses *how* learning experiences are designed at the local level.

The overall purpose is to focus on and connect the work of classroom teachers within a school and/or district to standards, assessments and classroom practices in order to raise student achievement.

The Kentucky Department of Education defines High-Quality Instructional Resources (HQIRs) as materials that are:

- Aligned with the *Kentucky Academic Standards (KAS)*;
- Research-based and/or externally validated;
- Comprehensive to include engaging texts (books, multimedia, etc.), tasks and assessments;
- Based on fostering vibrant student learning experiences;
- Culturally relevant, free from bias; and
- Accessible for all students.

Who Is Responsible?

The Kentucky Board of Education and the Kentucky Department of Education	Local superintendent, district and/or school administrators and teachers	Local superintendent, district and/or school administrators and teachers

For schools and districts, translating standards into a guaranteed, viable curriculum is vital to student success and the first step in creating curricular coherence.

- **Guaranteed Curriculum** – Guaranteed ensures specific content is taught in specific courses and at specific grade levels, regardless of the teacher assigned to a student. When schools and districts are unable to guarantee the curriculum being taught, the result is redundancy and inconsistency from one classroom to the next across grade levels and little alignment between the standards, assessment and instruction (Dufour & Marzano, 2011).
- **Viable Curriculum** - Viability means the articulated grade-level standards, instructional calendar (pacing guide), and daily instruction are all manageable and can be realistically taught to mastery levels in the instructional year (Marzano, 2003). This means schools and districts must ensure enough instructional time is available to develop essential knowledge, skills and concepts of the guaranteed curriculum.

Development of a district curriculum aligned to the *KAS* and adoption of a primary HQIR does not guarantee students have access to the same knowledge and skills. A distinction must be made between the *intended* curriculum and the *implemented* curriculum. In many places, gaps exist between the district- or school-established curriculum and what is implemented by teachers in classrooms. For districts to truly achieve a guaranteed and viable curriculum, the leaders and teachers accountable for delivering it must possess a common understanding of the curriculum and of the HQIR.

To support effective implementation, teachers and leaders need ongoing professional learning experiences that deepen their knowledge of how the curriculum and HQIR work together to set a strong instructional foundation (Instruction Partners, 2019). The professional learning can occur through the PLC process, workshops, coaching, classroom observations, feedback and other job-embedded contexts.

Referencing Figure 1.1, when districts across Kentucky create coherence by implementing high-quality, standards-aligned curriculum and instructional resources, support implementation and continuous improvement through high-quality professional learning and collaboration, measure student growth through a balanced system of assessment and provide teachers and students access to evidence-based instructional practices, a more equitable environment is established. Leaders and educators working together to implement the local curriculum help ensure every student has access to the same content, knowledge and skills regardless of teacher or school they attend.

Balanced Assessment

Comprehensive, Balanced System of Assessment

While understanding where our learners are and how they will know if they are successful is essential for teaching and learning, using a variety of assessment measures is not enough to ensure high-quality, reliable assessment practices. A comprehensive, balanced systems approach is needed. A comprehensive, balanced system of assessment serves a variety of purposes, uses multiple measures and meets the decision-making needs of all stakeholders from the classroom, building and district levels (Chappuis & Stiggins, 2017).

Assessment balance is best achieved at the local level because only local educational agencies (LEAs) have schools, classrooms, students and teachers. LEAs and school leaders are often tasked with:

1. Creating a comprehensive, balanced system of assessments aligned to common learning expectations;
2. Using assessment and the resulting evidence of student learning for their intended purposes; and
3. Creating conditions for effective assessment practices by ensuring that educators have the time and training they need to appropriately engage in and interpret the evidence students produce (p.4).

Educators who have been trained in and have the knowledge and skills needed for these effective practices are considered to be *assessment literate* or as possessing *assessment literacy*. *Assessment literate* teachers embed assessment results and formative assessment strategies into daily instruction to improve learning, utilize student evidence to make continual decisions about teaching and effectively communicate progress and grading practices to students. Simply stated, assessment literacy consists of an individual's understanding of the fundamental assessment concepts and procedures deemed likely to influence educational decisions (Popham, 2010).

High-quality, effective assessments provide teachers and administrators with the evidence of achievement needed to make informed short and long-term decisions to improve student learning. When students are actively engaged in the assessment process, learners have a clearer picture of how to demonstrate learning, and teachers are held accountable for the responsive changes that need to occur in their classroom practices (Erkens, 2015).

Educators need to know how students in their classrooms learn best in order to select the appropriate assessments to match students' needs. Without a clear picture of **why** students are

engaged in any assessment and *what* the evidence of student learning will be used for**,** educators risk wasting resources, contributing to over-testing, and misusing and misinterpreting data about student learning. Students need a clear understanding of the learning goals behind the activities they are undertaking in classrooms. In a comprehensive, balanced system, assessments are carefully selected to align with the purpose behind the classroom learning experiences and intended learning goals (Wiliam, 2018).

While some assessments are designed to provide evidence that focuses on the big picture by offering program feedback or annual yearly progress for a school or district, other assessment tools and practices are intended to provide guidance about where to go next in teaching and learning in the classroom. Just as the assessments stakeholders use are varied, so are the decisions those stakeholders make (Chappuis & Stiggins, 2017).

Because different stakeholders need to make different kinds of educational decisions, there needs to be a variety of assessments that yield different types of evidence. There is no one-size-fits-all assessment. Assessments at all levels—from classroom to state—will work together in a system that is comprehensive, coherent and continuous. In a comprehensive, balanced system, there are four primary assessment purposes: formative, diagnostic, interim/benchmark and summative. These four assessment purposes provide a variety of evidence to support educational decision making (WestEd, 2020a).

Assessment Types and Grain Size

Formative assessment is first and foremost a **process** engaged in by students and teachers together. It happens during learning and is more than just eliciting evidence of student learning (like a quiz or an exit ticket); it requires noticing, recognizing and responding to the evidence of student learning in order to support progress toward learning standards or goals. The formative assessment process provides students and teachers with immediate feedback that can be used to adapt teaching and learning through the use of test-elicited evidence (Popham 2011). Because it immediately informs teaching and learning, formative assessment should make up most of a teacher's instructional practices (Erkens, 2017) and may help surface a misconception that content needs to be clarified before moving on to the next step in learning. For an assessment to be deemed formative, teachers must be adjusting teaching and learning based on the evidence they collect from the assessment given (Erkens, 2012).

Diagnostic assessment is a formal strategy or tool designed to measure specific student strengths and weaknesses in student learning relative to their learning standards or goals. Diagnostic assessments focus on individual students. While both the formative assessment process and diagnostic assessments are designed to help teachers more effectively support student learning, diagnostic assessments are not an ongoing process embedded in teaching and

learning. Instead, they are specific measurement tools and strategies used when educators need more detailed information about individual students to inform next steps for instruction or intervention. Diagnostic assessment can be commercially developed products or teacher-created tools and strategies. Primary spelling inventories, sight word checklists, and written/oral assessments are a few examples of diagnostic assessment when used as tools to measure and inform next steps for individual students.

Interim/Benchmark Assessment monitors students' academic progress towards longer-term goals and compares student understanding or performance against a set of learning standards or objectives. Interim or benchmark assessments may be administered at specified intervals over the course of an academic year and may be common across classes or schools. The purposes of interim or benchmark assessments are to assess curriculum, instructional strategies and pacing, monitor students' academic progress toward longer-term goals, inform school improvement planning or predict a student's end-of-year performance when well-aligned to common learning expectations. Common performance tasks and common formative assessments are often examples of interim assessments when teachers collectively and intentionally decide to use them at intervals throughout the year, such as at the end of specified units.

Summative Assessment, sometimes referred to as a culminating assessment or end-of-course assessment, typically comes at the end of a period of instruction to measure the outcome of student learning (Kibble, 2017). While formative assessments are assessments *for* learning, summative assessments are assessments *of* learning. State assessments, Advanced Placement (AP) or ACT/SAT exams often fall into the category of a summative assessment (Bailey & Jakicic, 2012). Summative assessment is used to monitor and evaluate student achievement at the group-level and inform program-level and school improvement planning. It is not intended to provide information that can inform ongoing teaching and learning of individual students, but rather it gives an overall picture of how a system is preparing students to meet the learning expectations (Erkens, 2012).

Common formative assessments are typically assessment tools created collaboratively by a team of teachers who teach the same content or grade level. Common formative assessments are given to all students at a set time in the curriculum to answer the question: How will we know if our students are learning? (Bailey & Jakicic, 2012). PLC teams develop these timely grade-level or content-specific assessments to monitor each student's learning. According to DuFour and Mattos (2016), common formative assessments are beneficial because they:

- Promote equity for students;
- Provide an effective strategy to determine if the guaranteed and viable curriculum is being taught and learned;

- Inform the practice of individual teachers;
- Promote teacher efficiency;
- Build a team's capacity to improve its program;
- Offer a powerful tool for changing adult behavior and practices; and
- Facilitate a systematic, collective response to students who need acceleration.

Common formative assessments help to ensure **equity** because they are developed with agreed-upon learning goals so that students will learn the same goals no matter which teacher they have. In developing common formative assessments, teams also must arrive at consensus as they determine what proficiency will look like. Coming to consensus is necessary to guarantee equity for all students (Bailey & Jakicic, 2012).

PLC teams use evidence to provide common data about implementation of the guaranteed curriculum and to provide information to support changes in instruction and professional learning as well as to identify specific students who may need additional interventions and support. When teachers can conduct frequent checks for understanding and "catch" students who need acceleration along the way, there are fewer students who need additional time and support at the end of a learning experience, lesson or unit. For common formative assessment to be effective within a PLC, teams must collectively decide when those checks should occur. End of unit assessments help teams better evaluate curricular and intervention program effectiveness and assist teachers in determining the strategies and instructional approaches that work best for each unit. This allows teachers to provide interventions earlier and potentially save instructional time (Eaker & Keating, 2015). **When teachers collectively and intentionally decide to use common formative assessments at intervals throughout the year, such as at the end of specified units, they are considered an interim or benchmark assessment, not an example of formative assessment.**

Regardless of the assessment type, observable evidence of what students know and can do in relation to learning expectations should be central to all assessment practice and is foundational to a comprehensive balanced system of assessment. For a system to be balanced and comprehensive, a variety of assessment types must be present, and they must be **valid** and **reliable**. Valid assessments measure what they are intended to measure; reliability pertains to how consistently an assessment measures what it intends to measure (Erkens, 2017).

Assessment types can be differentiated by several different factors including grain size (meaning the volume of learning expectations measured by the assessment), frequency and immediacy of actionable information (meaning how directly it can inform teaching and learning in the classroom). Table 4.1 shows a comparison of the four different types of assessment just described.

Table 4.1. *Four Assessment Types by Grain Size*

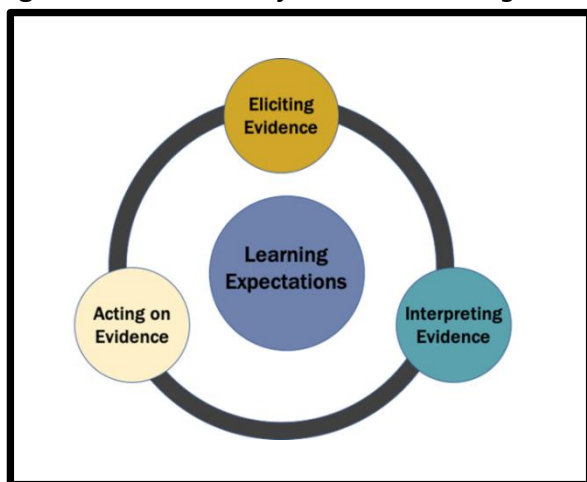| Assessment Type	Grain-Size	Frequency	Immediacy of Actionable Information
Formative	Small	Minute-by-minute, day-by-day	Immediately informs teaching and learning
Diagnostic	Small	As needed	Immediately informs teaching and learning
Interim	Medium	Intervals throughout the year	Supports future planning
Summative	Large	End-of-learning periods, often the end of the year	Informs decisions at the programmatic level

Diagnostic assessment and the **formative assessment** process are both small grain-sizes, meaning they focus on a small group of learning expectations or standards, and they both provide information that can rapidly inform teaching and learning in the classroom. The key difference between them is that diagnostic assessment is a measurement tool designed to identify specific strengths and weaknesses in *individual students*. However, both formative and diagnostic assessments can provide information about specific students who could benefit from intervention groups or extended learning opportunities. **Interim assessment** usually focuses on a broader group of learning expectations, takes place at designated intervals throughout the year and is designed to inform future instructional planning. It informs a grade-level team about specific standards for which their students are still struggling and supports planning to reteach or bring in different high-quality instructional resources for that content. Finally, **summative assessments** are of the largest grain size as they measure students' knowledge and skills on a collection of learning standards at the end of a learning period or year. Summative assessment informs school, district and state leaders about the effectiveness of various programs (i.e. classroom instructional strategies, intervention or school/district-wide curriculum) to decide what is working and what is not.

Evidence of Student Learning No matter the type of assessment, observable evidence of what students know and can do in relation to the learning expectations are the basis for high quality assessment practice. Identifying appropriate evidence to demonstrate student progress towards learning expectations and interpreting that evidence appropriately to inform a response requires a deep knowledge of the standards and learning expectations being measured. When evidence of student learning is used to guide the development of assessment items and strategies and is used as the foundational rationale for why teachers are making

intentional instructional decisions based on student performance, we increase the chances of developing valid and reliable high-quality assessment (WestEd, 2020a).

Figure 4.1: *Evidence of Student Learning*

At all stages of the assessment cycle, high-quality assessment relies on a solid understanding of learning expectations being assessed. This requires clarity about the standards and the learning progressions that students travel through to achieve mastery of the standards.
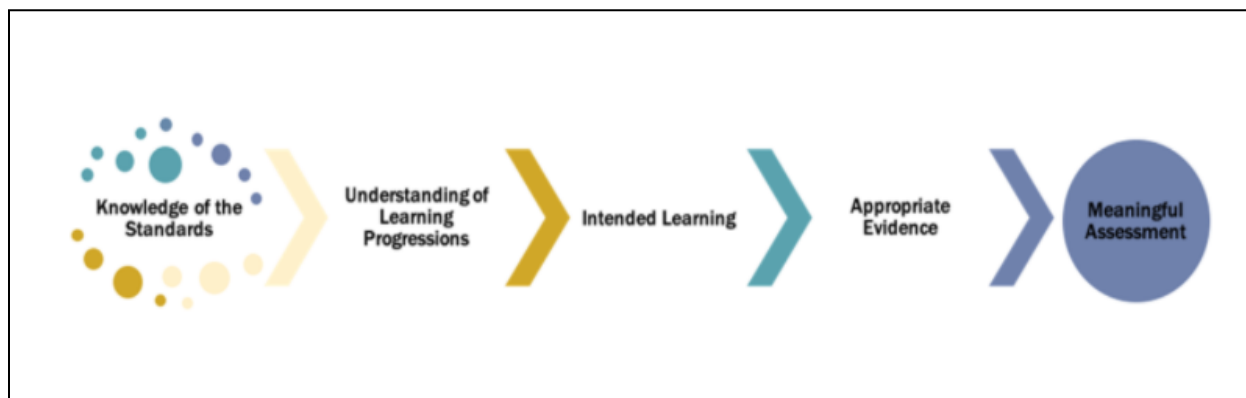
With clearly articulated learning expectations as a guide, the cycle of assessment moves through the process of eliciting evidence of student learning, interpreting that evidence and, most importantly, taking action to improve teaching and learning based on that evidence (WestEd, 2020a). This ongoing cyclical process is illustrated in the assessment cycle graphic above.

There are a variety of types of assessment that provide different information to support different types of educational decision-making. But whether we focus on the formative assessment process, diagnostic, interim or summative assessment, each of these steps in the cycle is relevant to ensure stakeholders have meaningful information about student learning, which is used to move student learning forward.

For any kind of high-quality assessment, educators must first know what it is that you are measuring and identify what constitutes achievement. To begin this process, it is crucial to have a clear and deep understanding of the specific expectations articulated in the standards, including clarity about the level of cognitive complexity intended within the skills in each of those standards.

Figure 4.2. *Process for Developing a Meaningful Assessment*

Arriving at a high-quality assessment also requires understanding the learning progressions that lead to the standards. A **learning progression** is the student learning pathway that leads toward the standards; it is not the same as the scope and sequence in curricular materials, but rather is about how students progress in their learning - their steps to get to their destination, so to speak. Being clear about where students are in the learning progression helps teachers collect meaningful evidence about how successful they are in their instruction and how successful students are in their understanding of that instruction. In the formative assessment process, this involves establishing learning goals (what students should know and be able to do by the end of the learning period) and success criteria (observable evidence that teachers and students will use to decide how students are progressing toward their learning goals).

Formative Assessment Process

The formative assessment **process** provides students and teachers with immediate feedback to inform teaching and learning (Erkens, 2017). *Merriam Webster's Dictionary* defines the word *formative* as "capable of alteration by growth and development." This suggests that formative assessment should shape instruction (Wiliam, 2018). The Council of Chief State School Officers (CCSSO) defines formative assessment as a planned, ongoing process used by all students and teachers during learning and teaching to elicit and use evidence of student learning to improve student understanding of intended disciplinary learning outcomes and support students to become self-directed learners (CCSSO, 2020). While tests are *used* during the formative assessment process to provide evidence, it is important to note that the responsive adjustments that teachers and students make during the learning progression based on that evidence is what qualifies an assessment as formative (Popham, 2011).

In order to determine if students have mastered the knowledge, content and/or skills contained in the standards or not, the formative assessment process directs teachers to collect evidence. If the assessment-elicited evidence indicates that instruction is going well, both teachers and

students continue to do what has been working. If the elicited evidence indicates that students are not progressing as intended, then the teacher makes immediate instructional changes and/or encourages students to adjust their own learning approaches (Popham, 2011).

When students can adjust based on the actionable feedback from others (through self-assessment, teacher and peer feedback) to improve their current level of work or understanding of a concept or principle, we describe those students as **self-regulated** or **self-directed** learners. Students who are self-regulated learners become "drivers" of their own learning and are able to independently manage evidence and feedback to continually move their learning forward (WestEd, 2020a).

Many misconceptions around formative assessment exist in education today. Educators from the late 1990's often referred to formative assessment in terms of a tool or test (Wiliam, 2018); however, formative assessment is **<u>not</u>**:

- A particular kind of test, tool, product or strategy;
- A one-time event;
- Used to generate a grade or score;
- "Just good teaching"; or
- Something new.

Exit tickets are one of the most frequently cited examples of formative assessment; however, an exit ticket is a *strategy* that asks students to complete a specific task and hand it in before they leave class. It is important to remember that formative assessment is a *process* not the specific *tool* or *strategy*. So, in and of itself, an exit ticket is not considered formative assessment. For an exit ticket to be a true example of formative assessment it needs to involve analysis and feedback or a pedagogical response that engages students in their own learning. If a teacher asks students to complete an exit ticket for accountability but does not adjust teaching and learning based on the evidence of student learning provided in the exit ticket, it is not formative assessment (WestEd, 2020a).

Why Formative Assessment is Needed

When the formative assessment process is implemented in an intentional and purposeful way, it can greatly impact student achievement because "we (as school and district leaders) are improving teacher quality by improving teacher practice (Wiliam, 2018)." According to Dylan Wiliam (2018), by focusing teachers' attention on minute-by-minute and day-to-day formative assessment, we are likely to see the greatest impact on student outcomes (p. 27). Teachers who implement the formative assessment process of noticing, recognizing and responding to the evidence of student learning help students move towards established learning goals at an accelerated rate. When this process is a part of daily teaching and learning practice, formative

assessment can help foster self-regulation and ownership as students become more active participants in the learning process (WestEd, 2020a).

In addition to promoting ownership and self-regulation, formative assessment gives students the feedback needed for possible next steps to help them reach their intended learning outcomes. When students receive feedback around *how* they are doing (where they are along a learning progression) and what their next steps need to be to reach the next level in their learning, they have a clear understanding of *why* the work they are doing is relevant and are more likely to be motivated to get there (Clarke & Hattie, 2019). The formative assessment process gives teachers the feedback they need to determine how effective their instruction was in helping students reach their learning goals by helping to identify students who might need additional instructional support or enrichment (Bailey & Jakicic, 2012).
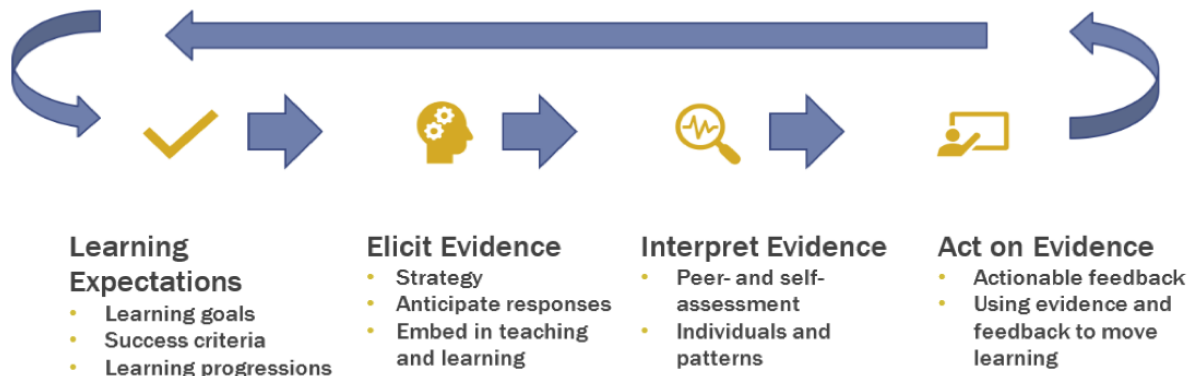
Cycle of Formative Assessment

The assessment cycle is based on the idea that all assessment is about using evidence of student learning to determine what students know and can do in order to inform appropriate decisions about teaching and learning. This applies to all high-quality assessment, regardless of its type or purpose. Learning expectations are represented at the center of this cycle (see figure 3.2) because at all stages of the cycle, high-quality assessment relies on a solid understanding of learning expectations being measured and the evidence that will show students' progress toward the learning expectations. This requires clarity about the standards and the learning progressions that students travel through to achieve the standards. With the clearly articulated learning expectations as a guide, the cycle of assessment moves through the process of eliciting evidence of student learning, interpreting that evidence and, most importantly, taking action to improve teaching and learning based on the evidence (WestEd 2020a). Figure 4.3 takes a closer look at the cycle of assessment in the specific context of formative assessment. You will see that the practices identified in Figure 4.2 are represented here as well as some additional components within each stage in the cycle.

Figure 4.3. *Cycle of Formative Assessment*

Cycle of Formative Assessment

Learning Expectations
- Learning goals
- Success criteria
- Learning progressions

Elicit Evidence
- Strategy
- Anticipate responses
- Embed in teaching and learning

Interpret Evidence
- Peer- and self-assessment
- Individuals and patterns

Act on Evidence
- Actionable feedback
- Using evidence and feedback to move learning

- **Learning Expectations:** Establishing learning goals and success criteria is an essential entry point for the formative assessment process. Learning goals, also known as *learning intentions*, *outcomes*, *objectives*, *aims* and *targets* (Almarode, et al., 2019), describe what students will learn in a learning period (as in a lesson or unit). Learning goals are not an agenda of tasks to complete or curriculum resources listed from a lesson or day (p.30), but rather they communicate to students a destination - where they are going in their learning journey (p.32).

  Success criteria describe the evidence students must produce to demonstrate that they have achieved the learning goals and are sometimes referred to as *key competencies* or *evidence of learning* (p. 39). Sections D and E that follow provide an in-depth look at eliciting and acting on *evidence of learning*. Students should have a strong understanding of *what* they are supposed to learn and *how* they will know and show when they are successful. As mentioned in the previous section, learning goals and success criteria should be aligned to the learning expectations or standards associated with the learning progressions (WestEd, 2020a).

- **Eliciting Evidence:** Learning goals and success criteria should guide the design of strategies to elicit evidence of student learning, often in a variety of ways over the course of a learning period. This may include a wide range of tasks like populating a graphic organizer or using math manipulatives to represent students' thinking, observation, discussion and questioning. Teachers should provide strategies, activities and tasks that make thinking visible and allow both the teacher and students to observe progress (Almarode, et al., 2019).

- **Interpreting Evidence:** To support teachers in taking real-time pedagogical action, it helps to anticipate common potential student responses in advance and, based on the learning progressions, have pedagogical actions aligned to these responses at the ready. (WestEd, 2020a). By having a keen awareness of where students are along a learning progression and knowing the specific needs of individual learners in their classrooms, teachers can anticipate potential student responses based on patterns they have observed in previous lessons or units of instruction. Using student knowledge and pattern observations helps teachers in interpreting the evidence they've collected to provide meaningful feedback to students (Almarode, et al., 2019).

- **Acting on Evidence:** Formative assessment is ultimately about what comes next for students to move toward their learning goals. Students and teachers need to work together so that they all understand their next steps. The evidence elicited from the formative assessment process should feed-forward learning, meaning it should equip students to act on their own (Clarke & Hattie, 2019). Students and teachers need to know what to do with the evidence they have collected in order to respond appropriately and continuously propel learning forward (p. 5).

Learning Goals and Success Criteria

Learning goals and success criteria drive the formative assessment process by supporting both student and teacher understanding of what successful learning of the standards will look like. At the heart of quality assessment practices, there is an emphasis on where learners are heading and how they will know if they are successful (WestEd, 2020a). Learning goals and success criteria are the barometer that teachers and students can use to monitor how effective their efforts are in moving towards mastery of the student learning goals. As previously mentioned in CCSSO's definition of formative assessment, the ultimate purpose is for students to understand disciplinary learning goals and become self-directed learners (WestEd, 2019). To achieve this effectively, CCSSO (2020) suggests that students and teachers integrate and embed the following **key formative practices** in a collaborative and respectful classroom environment:

- Clarifying learning goals and success criteria within a broader progression of learning;
- Eliciting and analyzing evidence of student thinking;
- Engaging in self-assessment and peer feedback;
- Providing actionable feedback; and
- Using evidence and feedback to move learning forward.

These key practices are not a list of teacher actions; instead, they are a list of actions students and teachers must engage in together. When students and teachers can both clearly articulate the learning goals and success criteria, students are more likely to become self-regulated

learners and "drivers" of their own learning because they know their destination (learning goals) and the directions needed to get there (success criteria). While all of these formative practices are important, if we fail to clearly communicate the learning goals and success criteria to students at regular intervals throughout their broader progression of learning, we fail to help students answer the three foundational questions in the formative assessment process illustrated in Figure 4.4 below:

- "Where am I going?"
- "Where am I now?"
- "Where to next?" (Wiliam, 2018)

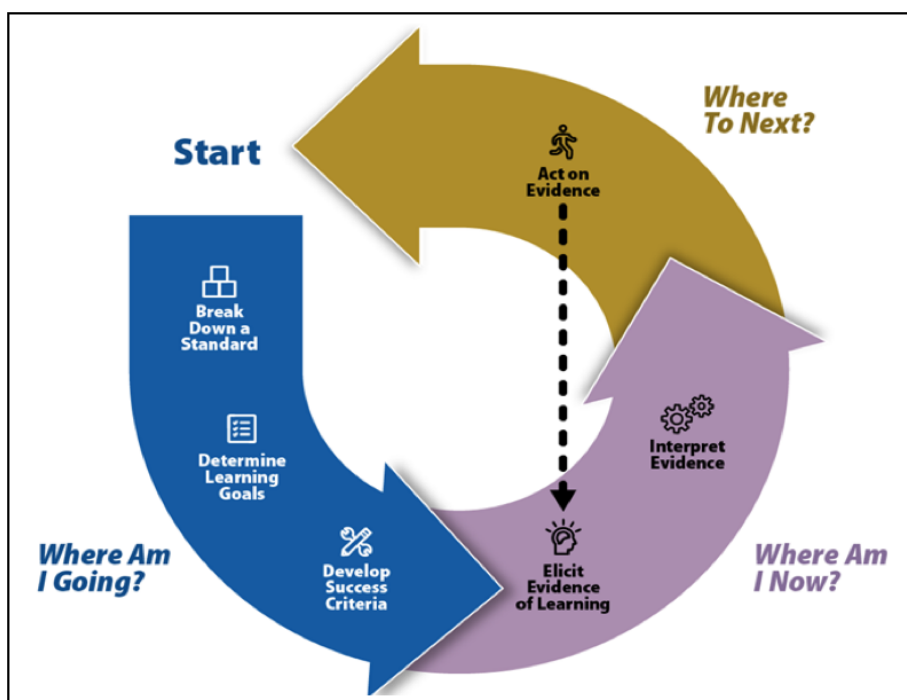**Figure 4.4.** *Formative Assessment Cycle*

Figure 4.4 identifies the specific practices that make up the formative assessment cycle and illustrates the practices that are grouped with each of the three critical questions. The practices in blue help teachers and students answer the question, "Where am I going?" by establishing what students should be learning and what it will look like when they have learned it. These three practices (breaking down a standard, determining learning goals and developing success criteria) form the foundation for the remaining two sections (Where Am I Now? and Where to Next?). Teacher and student decisions about what evidence to elicit, how to interpret that evidence and how to respond to that evidence all take place in the context of the established learning goals and success criteria.

The practices in purple answer the question, "Where am I now?" by eliciting evidence of student learning and making sense of that evidence. By interpreting learning evidence, students are able to determine where they are in relation to the learning goals. Finally, the practices in yellow answer the question, "Where to next?". In this stage of the formative assessment cycle, teachers and students act on evidence in order to move students toward their intended learning goals. As the graphic illustrates, the formative assessment process is a continuous cycle. It isn't a test or event that gets checked off the list, but rather an ongoing process that guides both learning and teaching. As students meet their goals, they circle back around and move towards a new cycle of learning.

Figure 4.5. *Starting with the Standards*

Learning Goals
Over the course of
the year

Standards
End-of-year

The *Kentucky Academic Standards* reflect the disciplinary knowledge and skills that students must achieve by the end of each grade level or course. These standards guide teaching and learning but aren't achieved in a single lesson. Instead, learning happens along a pathway or progression that leads toward mastery of the standards. **Learning goals** represent the lesson-sized learning that students progress through as they make progress toward the standards. Supporting students to achieve the standards over the course of the school year demands not only a deep familiarity with the standards but also clarity about the *sequence* of learning that students will move through on their path to the end-of-year standards (WestEd, 2020a). It is the culmination of the achieved learning goals from multiple lessons that ultimately should lead to a mastery of the standards at the end of a course or grade level (See Figure 4.5).

Breaking Down the Standards

Establishing learning goals begins with clarity about grade-level academic standards and the progression of learning that leads to those standards. The process of breaking down a standard supports better understanding and the progression of learning within and between standards. When breaking down a standard, teachers should reflect and ask questions such as:

- What is the goal of the standard?
- How does the standard build from prior and support future learning?

- What disciplinary practices are students engaging in?

Reflecting on these questions helps teachers and leaders better understand the depth of the *Kentucky Academic Standards* and the learning goals best aligned to those standards. The Kentucky Department of Education has created educator resources for reading and writing, mathematics, social studies and science that build knowledge about the standards and help educators break down standards to support teaching and learning. To learn more about the *Kentucky Academic Standards*, consider reviewing the [Getting to Know the KAS Modules](#) or the [Breaking Down a Standard Resources](#). These resources can support educators in considering the prior knowledge and progression of learning for each standard in order to guide instruction and formative assessment.

Why Clarity is Crucial

In his book, *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*, John Hattie (2009) identifies the practices and strategies in education having the greatest positive impact on student learning. His meta-analyses ranked the practices and strategies according to how powerful they were in eliciting change and were given a numerical value termed an **effect size**. Any effect size greater than 0.40 is considered to have a positive impact (effect) on student learning, while any effect size less than 0.40 is considered to have a lower or negative impact on student learning. Hattie's findings identified teacher clarity as having an effect size of 0.75, which suggests that, when implemented effectively, clarity around student learning goals and success criteria has the potential to almost double student learning growth. This research reinforces how important it is for teachers to know their standards and where students are along the pathway to reaching those standards. Having this increased level of clarity allows teachers to provide more relevant and explicit feedback to help accelerate student learning (Hattie, 2009).

Researcher Frank Fendick (1990) suggests that teacher clarity is more than just learning goals and success criteria. Fendick describes four practices that combine to create clarity:

- **Clarity of Organization:** Assignments, activities or lesson tasks aligned to learning goals and success criteria;
- **Clarity of Explanation:** A student's ability to understand relevant and accurate content information;
- **Clarity of Examples and Guided Practice:** Using explanatory and demonstrative lesson information to gradually move students to independence with less-scaffolded support; and
- **Clarity of Assessment of Student Learning:** Teachers eliciting and acting upon the regular feedback they receive from students (verbal and written).

While we have discussed how learning goals and success criteria (Clarity of Organization) are foundational to the formative assessment cycle teachers also need to practice Clarity of Assessment in order to collect meaningful evidence *from students* to offer meaningful feedback *to students* about next steps in their learning. This section will focus most heavily on Clarity of Organization and Clarity of Assessment of Student Learning, although all support one another within the formative assessment cycle (Fisher, Frey & Hattie, 2020).

Determining Learning Goals and Developing Success Criteria

As mentioned earlier, establishing learning goals and success criteria is an essential entry point for the formative assessment process. Learning goals, also known as *learning intentions*, *outcomes*, *objectives*, *aims* and *targets* (Almarode, et al., 2019) describe what students will learn in a learning period (as in a lesson or series of lessons). In their research around the formative assessment process, authors Kim Bailey and Chris Jakicic emphasize the need to establish a clear connection between the learning goals and success criteria, the instruction that is taking place and the assessments that teachers implement (Bailey & Jakicic, 2012). Establishing this clear connection gives self-directed learners the increased clarity they need to understand what they are learning and how to get there (WestEd, 2020a).

Learning goals and success criteria work in tandem to help students understand where they are headed, helping them to eventually become self-regulated learners**.** If a lesson (or series of lessons) is a *journey* that students and teachers take together, learning goals represent to students the *destination* of their journey, signaling clearly *what* they are learning and *why* it is important. Success criteria demonstrate to students what it looks like to be successful in achieving the learning goals; success criteria inform both teachers and students and represent the *checkpoints* along the route. When aligned to student learning goals, success criteria give students specific information to understand their progress and adjust to move their learning forward through observable demonstrations. These observable demonstrations are what Frank Fendick refers to as Clarity of Examples and Guided Practice in his four practices that create clarity mentioned previously in this section (Fisher, et al., 2020).

Learning goals clearly articulate to students the most important learning in a lesson, not the activities or experiences they will have in the lesson. While learning goals should be aligned to the standards, they do not need to reflect *all* the learning encompassed in the standard. Instead, learning goals should build towards the learning necessary to achieve mastery of the grade-level standard by the end of the course or year. In order to make learning goals achievable for students within the context of a *lesson*, they should be written in language that is accessible and comprehensible for students (Clarity of Explanation). Learning goals should be a guide both for teaching *and* for learning. To create meaningful learning goals that support

student learning throughout the lesson and guide the formative assessment process, WestEd (2020a) suggests keeping in mind the following **key criteria when developing learning goals**:

- **Aligned**: The learning goals should align to the standards and build toward the content and cognitive complexity of the standard.
- **Achievable:** Learning goals should be achievable during the lesson. They do not need to reflect the entirety of the learning reflected in the standard(s).
- **Accessible Language:** Learning goals must be written in student-friendly language, clear enough for students to use to guide their own learning and make sense of them.
- **Focused on Student Learning**: Learning goals should focus on what students will learn, not on what they will do in the lesson. They should not be just a restatement of the lesson topic.
  - Learning goals are lesson-sized, not isolated or discrete. The learning they describe is aligned to a standard and connected to other prior, concurrent and future learning.
- **Worth Learning**: Learning goals should focus on the most important learning of the lesson and students should be able to understand and articulate why they are focusing on this learning.
  - Learning goals are part of an extensive progression of learning that builds from learning goals through the progression of learning and to the standards.

An example of a learning goal aligned to a Kentucky Reading and Writing standard that is potentially attainable during a lesson could be:

Grade Level/Content Area	Standard	Learning Goals
First Grade Reading & Writing Interdisciplinary Literacy Practice 5: Collaborate with others to create meaning.	**RL.1.3:** Describe characters, settings and major events in a story, using key details in order to make meaning of the story development.	Notice and talk about the setting, characters and big events in the stories we read.

- **Aligned to the Standards:** You can see that this learning goal is aligned to the standards, but it doesn't reflect the entire content standard. In this lesson, students are working on identifying characters, setting and major events and beginning to talk about it with their peers. As students progress in their learning, their learning goals will likely expand to incorporate telling or giving an account of the characters, settings and major events in verbal and/or written form and using these elements to make meaning of the story

development. This lesson also aligns to Interdisciplinary Literacy Practice 5: Collaborate with others to create meaning.

- **Achievable:** While we don't know how long this lesson is, it seems reasonable to imagine that this learning goal could be accomplished by first graders during a lesson.
- **Accessible Language:** Presuming that students have been introduced to the content in the standard (setting, characters and events), this learning goal is written in a way that allows a first grader to understand what they are working to learn.
- **Focused on Student Learning**: Students will likely undertake a variety of literacy activities in this lesson, perhaps including tasks focused on decoding and sentence-level reading comprehension, but this learning goal signals to students the most important learning in the lesson (to notice these key elements in their story and be able to talk about them) and provides tools so that they begin to develop the skills to manage their own learning.
- **Worth Learning**: This learning goal tells students that being a reader means noticing what is going on in a story and communicating with others about the reading.

As illustrated in Figure 4.4, success criteria in tandem with learning goals answer the question, "Where am I going?" because they are aligned tightly with one another and, therefore, the standards. Like learning goals, success criteria are a guide for both teachers and students. Success criteria are not checklists, activities in a lesson or a set of procedural expectations; they should reflect the expected learning of the lesson. Learning goals might be "invisible" because they often happen inside a student's head; one cannot directly observe things like "knowing" or "understanding." Because of this, success criteria should always be written as performances of learning that one can observe. It is what students will say, do, make or write that will make the status of their learning visible (WestEd, 2020a). Accessible learning goals and success criteria enable students to participate in and contribute to the learning community by evaluating their own and their peers' learning. When students internalize learning goals and success criteria, it helps them make meaning of challenging content and enables students to see the relevance in what they are learning. WestEd provides some **key considerations for developing meaningful success criteria**. According to WestEd success criteria should be:

- **Aligned to the Learning Goals:** Success criteria articulate for students how they will show that they are meeting their learning goals, so it follows that success criteria must be tightly aligned to the learning goals so they truly reflect demonstration of that learning.
- **Observable:** Success criteria must be visible to both teachers and students.

- **Accessible Language:** Like learning goals, success criteria are critical tools for students to manage their own learning, so the success criteria must be communicated clearly to students so they understand how they will show what they have learned.
- **Focused on Student Learning**: Success criteria should focus on what it will look like for students to show their learning and should not reflect the activities in the lesson or some of the procedural aspects of a task (i.e., completing a worksheet).
- **Demonstrable:** Finally, success criteria should be something students can accomplish and demonstrate within the course of the lesson so that they can actively monitor their progress toward the learning goals.

An example of first grade success criteria for Reading and Writing aligned to the learning goal/standard:

Standard	Learning Goals	Success Criteria
RL.1.3: Describe characters, settings and major events in a story, using key details in order to make meaning of the story development.	Notice and talk about the setting, characters and big events in the stories we read.	I can use a five-finger retell to tell my reading buddy about my book. I can listen to my reading buddy and ask questions to learn more about their book.

- **Aligned to the Learning Goals:** These success criteria are aligned to the learning goal, providing students a structured way to share what they notice about the key elements of their story.
- **Observable**: These success criteria are observable both to students, their peers and their teacher. They make students' thinking public.
- **Accessible Language**: If students are familiar with or provided clear instruction about what the five-finger retell strategy is and perhaps have access to an anchor chart to remind them, these success criteria could be a clear guide for a first-grade student.
- **Focused on Student Learning**: These success criteria direct students to the most important learning in this lesson, not to everything they will do in the lesson.
- **Demonstrable**: It is reasonable to imagine that a lesson could afford students the opportunity to demonstrate their learning through these success criteria.

Engaging Students in Learning Goals and Success Criteria

Students should be at the center of classroom interactions and decisions if our assessment practices are truly focused on learning. By asking students to engage in activities that directly relate to the learning goals and success criteria, students feel respected by their teachers and see the school experience as purposeful and coherent (Erkens & Schimmer, 2017). Furthermore, for teachers to engage students in the learning goals and success criteria, it is imperative that teachers find **clarity** in the standards for themselves in order to translate those standards into clear learning goals for students. If teachers are unclear about what students must know and be able to do, students will also be unclear and unable to own their learning (Almarode, et al., 2019). Figure 4.6 below illustrates the crucial role that clarity plays in engaging students in the creation of learning goals and success criteria.

Student investment (or ownership) is the degree to which students invest in their own learning. When students are invested in their own learning, they are more engaged and motivated and, therefore, more apt to reach their learning goals. Invested students see the relevance in what they are learning and understand why they are learning it because they have teachers who are intentionally and consistently making learning goals and learning progressions transparent for them. According to Cassandra Erkens and Tom Schimmer (2017), highly effective teachers who seek to promote student investment incorporate high levels of engagement and reflection by:
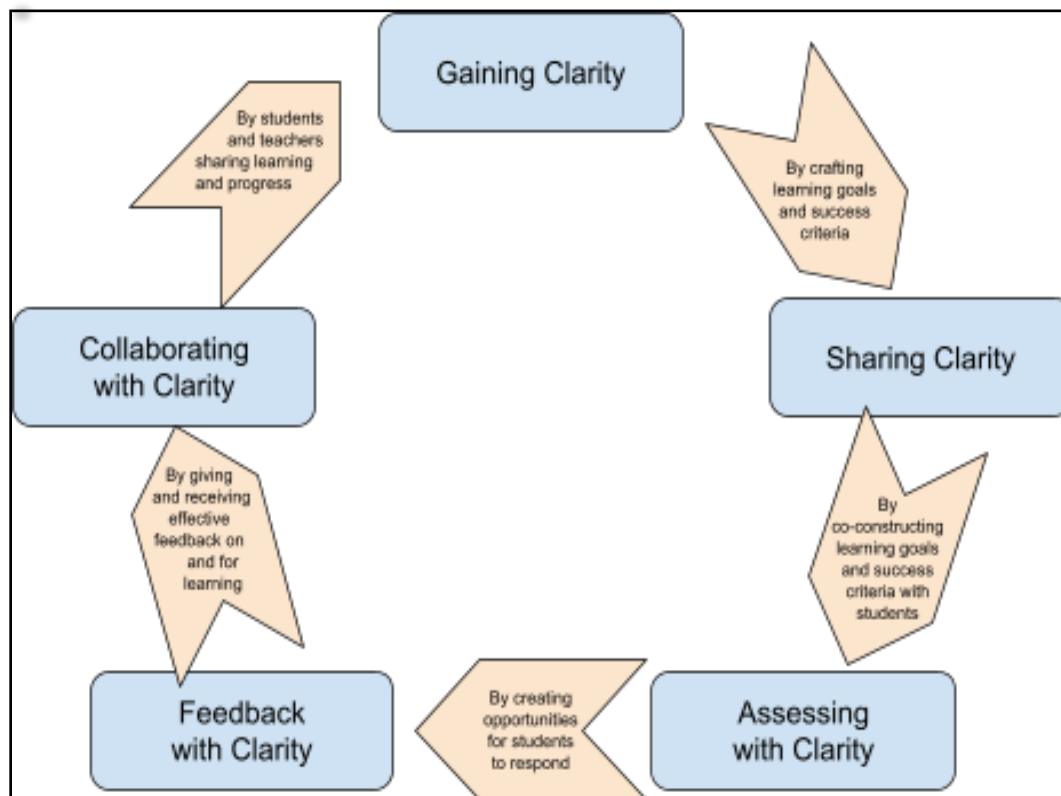
- Asking thought-provoking questions;
- Affirming student understandings and confidence;
- Clearing up misconceptions;
- Monitoring the impact of assessments and instructional practices; and
- Continually seeking feedback from students regarding the classroom culture, assessments and practices to make responsive adjustments to those as needed.

Because the formative assessment process requires active engagement by students in their own learning, learning goals and success criteria cannot support **active engagement** if students do not fully understand them. Teachers can actively engage students in the learning goals and success criteria by making connections to previous learning experiences, building understanding through examples, and empowering students to reflect on their progress using learning goals and success criteria throughout lessons. Success criteria can be made more meaningful by examining examples with students. By unpacking examples that fully meet the success criteria (as well as those that do not) and emphasizing the next steps that could improve the example to fully meet the success criteria, teachers are able to make the success criteria concrete for students and model how students can use the evidence of their learning to propel learning forward (WestEd, 2020a). Through this process teachers can develop success

criteria with students, known as **co-constructing**, to ensure clarity and encourage the kind of metacognitive thinking that can allow students to become self-directed learners.

Figure 4.6. *Importance of Clarity*

*Adapted from content in *Clarity for Learning* (Almarode, et al., 2019).

Co-Constructing Success Criteria

In her book, *Clarity for Learning*, Shirley Clarke (2019) claims that "The worst learning scenario is to be unaware of expectations or how your work will be judged and to have no guidelines about how to achieve the objective in the first place." (p. 70). This ambiguity in expectations and next steps is diminished when teachers take the time to co-construct success criteria with students. While some educators argue they don't have time to co-construct success criteria with students, doing so often reduces the amount of time overall teachers spend reviewing and reteaching content later to students (Almarode, et al., 2019).

Co-constructing increases the likelihood that students will become self-regulated learners because the process helps students internalize what they are learning and provides students with the tools necessary to monitor their own progress during a lesson (Gerzon, 2020). When students know the intended goal or standard that they are aiming for in a lesson, they are better able to compare their *actual* level of performance against the *intended* performance

level that has been shared. Intended performance levels can be clearly articulated through modeling, worked examples and exemplars.

- **Modeling** involves explicitly demonstrating to students what the expectation looks and sounds like, typically through a process, so students know what they are expected to later do. Chefs often model how to complete a recipe, while a writer may model how to write an introductory paragraph. When we model, we are providing the information necessary for the learner to replicate or imitate our process to arrive at the same or a similar result (Almarode, et al., 2019).
- **Worked examples** are often shared so students know how to solve a problem or perform a task. They can be shared as a fully completed problem or worked examples that show progress over time. Progress over time worked examples are often used to illustrate steps in a progression (i.e., a writing process or mathematical equation) or to share a person's thought process.
- **Exemplars** are high-quality examples that show students what their work can look like if they meet or exceed the success criteria. Exemplars are helpful when teachers want to challenge students to reach higher levels of performance and can act as springboards for discussions around specific criteria that make the examples high-quality. Using a variety of the examples above demonstrates to students that there are multiple pathways they can take as learners to meet or exceed the success criteria; it keeps learning interesting and engagement high (p. 83).

While there is no set right or wrong way to co-construct success criteria with students, any experience that clarifies learning goals and success criteria with students will have a positive impact on their learning. Once teachers have a clear understanding of the standards, have developed the learning goals and success criteria, and have determined the examples, models and exemplars they will use, they are then ready to begin co-constructing success criteria with students (p. 81). In their book *Clarity for Learning*, authors John Almarode and Kara Vandas suggest the following steps as a general framework for co-constructing success criteria with students.

Steps to Co-Constructing Success Criteria
1. Decide *when* you will co-construct success criteria with students.
2. Collect the models, worked examples and exemplars you will use, such as:
   - Attainment of the learning goal(s)/standard examples;
   - Exceeding the learning goal (exemplars) examples;
   - Works in progress or non-examples; or
   - Processes, steps or various approaches to attain the same criteria.
3. Determine your approach for sharing criteria with students. This could include:

- o Teacher or student modeling demonstration with a think-aloud;
- o Modeling worked examples and posting for later reference;
- o Studying and analyzing multiple exemplars in small groups to develop success criteria; or
- o Determining which exemplars and examples are better through a comparison between lower-quality examples and nonexamples.

4. Begin generating success criteria with students. Make sure that:
- o After sharing modeling, worked examples and exemplars, teachers allow students to share their criteria; and
- o Based on the knowledge of the standards and expectations, the teacher adds any missing success criteria he/she may notice.

5. Sort and organize success criteria into categories to create a(n):
- o Checklist;
- o T-Chart;
- o Rubric (including meets/exceeds learning expectations portions of rubric); and
- o Additional method for representing the criteria.

6. Model/practice using the criteria to provide feedback and set personal goals. Which criteria should be worked toward next?

7. As learning deepens, revise success criteria and student goals over time.

Strategies to Co-Construct Success Criteria

In the *Steps to Co-Constructing Success Criteria* listed above, step 3 encourages teachers to determine their approach for sharing criteria with students. The following strategies from Nancy Gerzon (2020) provide teachers with several suggested strategies they could use to approach demonstrating success criteria to students:

- **Demonstrating a Skill:** The teacher demonstrates a specific skill and asks students, "What did I just do?" as a way of gathering the criteria.
- **Demonstrating Good and Bad:** The teacher demonstrates how to do the skill well and how to do it poorly and asks students to identify key features of a successful performance.
- **Working Through It:** Teacher engages students in the analysis of a graph, diagram or text and discusses the specific steps to interpret it.
- **Sloppy Success Criteria**: Teacher provides students with an example that contains errors, along with the success criteria, and asks them what has gone wrong. Students analyze the errors and correct the success criteria (WestEd, 2020a).

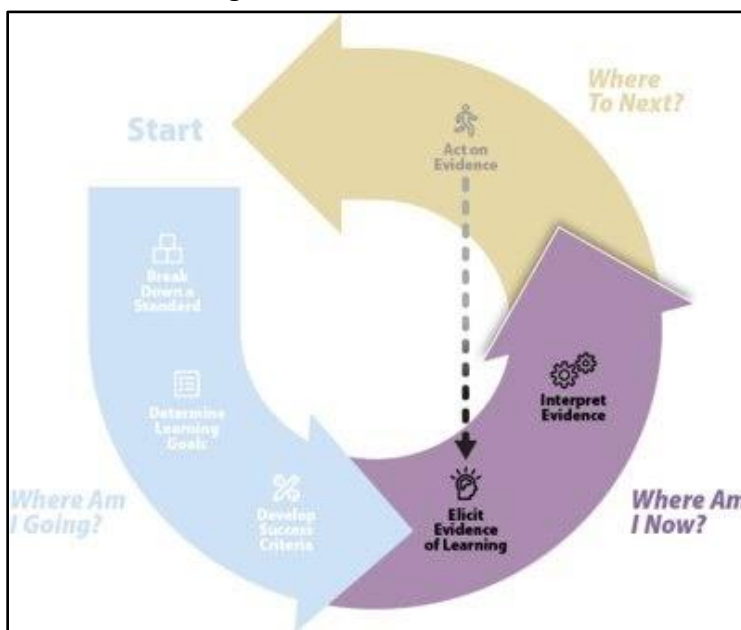**A Word on Goal Setting with Students**

Once students have a better understanding of what success looks and feels like through the co-construction process, they will be empowered to more accurately self-assess their own learning progress and achievement. Steps 6 and 7 above set the stage for students to begin to set goals and determine their next steps based on the success criteria. When using a pre-assessment or other formative evidence of student learning, paired with the co-construction process, students can be asked which success criteria they have successfully met and which they need to work towards next. By establishing regular reflective conversations or structures in their classrooms, teachers enable students to visibly see the progress they are making towards accomplishing all the success criteria (Almarode, et al., 2019). Seeing their successful progress builds students' self-efficacy and sets them up for moving along an upward trajectory of learning (Hattie, et al., 2016).

Eliciting Evidence of Student Learning

As emphasized previously in this framework, understanding where learners are heading and how they will know if they are successful is essential for teaching and learning. Once students and teachers understand where they are headed in their learning, their focus then shifts to the second question, "Where am I now?" as illustrated in Figure 4.7.

Figure 4.7. *Where Am I Now? Eliciting Evidence*

Students and teachers should understand their current status so that they can make decisions to move learning forward (Chappuis, et al., 2017). This starts with eliciting meaningful evidence that can be used to interpret student learning and inform next steps. The primary way that educators elicit meaningful evidence is through assessment. Assessment helps educators measure effectiveness and informs their educational decision-making by:

- Measuring the impact of our policies, practices and programs;
- Supporting equity by providing insight into the educational outcomes of different subgroups;
- Making comparisons between students, groups and systems;
- Providing information to inform continuous improvement;
- Supporting teaching and learning of the guaranteed curriculum;
- Informing decisions about classroom practice, instructional support and intervention; or
- Providing guidance about next steps for teachers and students in a classroom (WestEd, 2020a).

Key Considerations for Evidence of Student Learning

Evidence of student learning is a key component of the formative assessment process because it informs student and teacher decisions about next steps to move students towards their learning goals. While there are a multitude of strategies for eliciting evidence of student learning, WestEd (2020a) suggests the following key considerations:

- Design and implement evidence intentionally.
- Make student learning visible.
- Inform students and teachers about next steps to encourage student self-regulation.
- Embed opportunities to elicit evidence during learning.

As a key element of the lesson design process, eliciting evidence should be part of a strategic plan to support students in their intended learning, so it's not done on-the-fly (Wiliam, 2018). While teachers are encouraged to adjust their evidence-gathering strategies while teaching, the central purpose of eliciting evidence should be focused on making student learning visible, such as collecting evidence as students engage in a performance that makes thinking into a tangible product. This could include opportunities during teacher-to-student interactions, peer interactions or examinations of student work. The goal should be for students to begin to manage their own learning beyond just "meeting" or "not meeting" the success criteria (WestEd, 2020a). Teachers should have a firm understanding of where students are along their learning progression to inform not only where they need to go next in their instruction, but also determine the type of feedback that will be most effective in helping students understand,

"What am I good at?"; "What do I need to work on?" and "What should I do next?" (Chappuis, et al., 2017).

Formative assessment practices keep teachers in touch with student learning and students in touch with their own progress. These practices help develop students' understanding that their actions can make a positive impact on their achievement (Chappuis, et al., 2017). Students need to see the formative assessment process as an integral and embedded part of teaching and learning (Wiliam, 2018). The process of eliciting evidence should occur during learning so that the information collected can immediately inform next steps by continually checking to see that students are making progress (WestEd, 2020a). When evidence is *not* collected during instruction, teachers are unable to determine when progress is not being made until it is often too late. This wastes valuable instructional time because teachers are unable to make timely adjustments to their instructional practices when they are needed most.

Supporting Students to Manage Their Own Learning

In the previous section we learned that by asking students to engage in activities that directly relate to the learning goals and success criteria, students feel respected by their teachers and see the school experience as purposeful and coherent (Erkens, et al., 2017), but how do the choices we make about eliciting evidence of student learning impact student feelings of respect, purpose and coherence? Engaging students in meaningful opportunities to share and reflect on their learning allows them to become managers of their own learning. When students understand what they are learning and why they are learning it, motivation and engagement increase as students begin to become more metacognitive in their thinking, recognizing and monitoring their work to become self-directed learners. Students are able to continuously self-monitor and feel in control of their growth process when they see for themselves that they are close to reaching their learning goals, thus replacing fear and anxiety with confidence and persistence. By providing students with a clear and understandable vision of their intended learning, we are increasing their motivation and achievement because our instruction is being guided by clearly defined goals (Chappuis, et al., 2017).

What is Meaningful Evidence?

For evidence of student learning to provide students and teachers with the information they need to make well-informed decisions, the evidence must be meaningful. This requires thoughtful planning to ensure that the information gathered is telling students and teachers what they need to know. It is essential that the evidence gathered is **aligned** to the learning goals and success criteria. When the evidence is aligned, students and teachers will be able to understand how they are progressing toward the learning expectations of the lesson and students will see the evidence elicited as purposeful and coherent. Because quality designs

begin with the end in mind, classroom assessment should uncover the discrepancy between where students are and where they need to be in their learning (Erkens, et al., 2017). Ensuring that evidence gathered is aligned to the learning goals ensures that evidence gathered can reasonably represent the specific learning of the lesson (WestEd, 2020a).

As you may recall from the previous section, learning goals represent a "lesson-sized" step in a learning progression toward the end-of-year grade level standards. Learning progressions represent the path that learners will travel to reach their lesson destination (learning goals). Success criteria reflect the way that students will demonstrate they have achieved that learning goal over the course of a lesson. So, during a lesson, evidence gathered should be designed to provide check points on student understanding leading up to the learning goal. One piece of evidence will not reflect the full content and complexity of the standard (WestEd, 2020a). Teachers should keep in mind that the evidence gathered should reflect both the content described in a learning goal, as well as the level of cognitive complexity. It is not necessary for every evidence gathering opportunity to be aligned to all aspects of the learning goal, but cumulatively, they should provide an actionable picture of student learning; the full breadth of the learning goal and how well students are able to demonstrate their learning on the success criteria.

Because various interpretations for a key skill or process outlined in a standard can exist, it is important for PLCs to establish common levels of cognitive complexity. Establishing these common understandings as a team will increase the likelihood that there is equity from classroom to classroom because teachers will have shared expectations regarding the degree of rigor for each of the standard components (Erkens, et al., 2017).

While there are multiple frameworks that exist in education to describe cognitive complexity, perhaps the most widely used is Norman Webb's Depth of Knowledge (DOK) Model. Because testing companies commonly use Webb's model in developing external assessments, teachers should consider eliciting evidence within their classrooms using the same or similar DOK levels to ensure that students are prepared for the cognitive complexity that external assessments demand. For example, Table 4.2 below details the nuances that can exist within the single word *describe*. While it might be easy for some educators to assume the word *describe* is a lower-level recall challenge, this example reinforces why teams need to carefully examine intended levels of complexity within their PLCs to reach consensus (p. 86). Below are a few examples of how the word *describe* could be employed differently at each of the four DOK levels:

Table 4.2. *Example of Word Nuances at Various DOK Levels*

Learning Goal	I can **describe** the life cycle.

DOK 1: Recall	**Describe** the four stages of the monarch butterfly's life cycle. (Requires simple recall)
DOK 2: Skill or Concept	**Describe** the differences between the first and the fourth generations of the monarch butterfly's life cycle over the course of a single year. (Requires students to discern the differences between the two types of life cycles)
DOK 3: Strategic Thinking	**Describe** a model that represents the relationships that exist between the life cycle of a monarch butterfly and its migration patterns. (Requires a deep understanding of the life cycle and for students to determine how best to represent it when blended with another concept)
DOK 4: Extended Thinking	**Describe** and illustrate the commonalities in life cycle patterns among three migratory creatures. (Requires students to investigate, think and process through multiple conditions of the problem)

*Adapted from _Essential Assessment_ (Erkens, et al., 2017).

In addition to being aligned to the learning goals and success criteria, for elicited evidence to be deemed meaningful, it should provide **multiple sources of meaningful evidence** at various points throughout the lesson. Because there is no one-size-fits-all regarding eliciting evidence of student learning, multiple sources can offer a broader, holistic view of student thinking and allow teachers to take pedagogical action. This is because students and teachers need different information at different points in a lesson to make sure that student learning is moving forward, and students and teachers need nuanced information about where students are in their learning. One question or task is unlikely to provide the full picture of student learning necessary to make well-informed decisions (WestEd, 2020a).

The _Kentucky Academic Standards for Reading and Writing, Mathematics, Social Studies and Science_ include student practices which emphasize **disciplinary discourse and meaning making practices**. According to researchers Margaret Heritage & E. Caroline Wylie (2020), evidence should be elicited that encourages the sharing and building on of thinking rooted in disciplines, including:

- Interactions and exchanges that promote new ways of thinking and promote connection and inquiry;
- Questions that invite deeper reflection and answers that must be justified and connected;
- Discussion and argumentation; and
- Professional engagement with the subject matter.

Disciplinary discourse makes thinking visible in ways that can support the formative assessment process and supports the development of deeper understanding through collective meaning-making. As teachers design lessons that integrate meaningful opportunities to elicit evidence of student learning, priority should be given to strategies that engage students deeply in disciplinary discourse. This means more than just talking about the content in a classroom, but rather opportunities to share and build upon thinking rooted in the discipline (WestEd, 2020a).

Strategies to Elicit Evidence

In planning future lessons, it is important for teachers to think about the kinds of evidence that could be gathered during a lesson that will best elicit the information they need to determine if students are progressing toward their learning goals (WestEd, 2020b). Teachers should intentionally design opportunities to elicit evidence that will make student thinking visible and give teachers and students a full picture of where students are along their learning journey. As mentioned earlier, regardless of the discipline or lesson content, teachers should continually be thinking about what strategies would:

- Be aligned?
- Elicit multiple sources of meaningful evidence?
- Prioritize disciplinary discourse and practices? (WestEd, 2020a).

The example below reflects a learning goal and success criteria aligned to the *Kentucky Academic Standards for Reading and Writing* for grade 6.

Standard	Learning Goal	Success Criteria
C.6.1.c: Support claim(s) with clear reasons and relevant evidence, using credible sources, acknowledging opposing claims, and demonstrating an understanding of the topic or text.	Identify relevant evidence from different texts to support a claim.	Annotate texts to identify strong evidence to support my claim and note how I might use it in my essay.

Over the course of the lesson, students will learn to identify relevant evidence from multiple texts to support a claim. They will later demonstrate their learning by annotating the texts to flag strong evidence and ideas for use in their own essays. Some **suggested strategies to elicit evidence** that could be integrated into this example lesson could include:

- Opportunities for students to share their opinions and experiences related to the claim by guiding students to record the opinions or experiences for use during classroom

discussions (peer and teacher led).; conducting peer discussion around the relevance of different articles on a specific topic;

- Facilitating a teacher quick review of the evidence students have highlighted in the text;
- Initiating individual discussions with students about highlighted passages in the text; and
- Establishing partner work about specific, selected passages and how students might use them in their essay through an assessment conversation with the teacher about evidence. Some suggested prompts might include:
  o How does this example support your claim?
  o How does this example connect with the previous example you chose?
  o How well does this evidence support the claim?
  o How might you revise your evidence to better support the claim?

Thus, these examples:

- Are **aligned** to the learning goals and success criteria and are focused on understanding how students are moving forward as they learn to identify relevant evidence from different texts to support a specific claim;
- **Offer multiple opportunities** for students to demonstrate their thinking in front of their peers and teacher; and
- **Prioritize** ways for students to engage in **disciplinary discourse** with their peers and their teacher, deepening their understanding and the development of disciplinary literacy skills.

Eliciting evidence in a **remote learning** setting may require different strategies, but still should focus on the same priorities (Fisher, et al., 2020). For example, teachers may elicit evidence of student learning through disciplinary discourse using breakout rooms and commenting on each idea using a collaboration tool (e.g., Google Docs). Teachers can float between breakout rooms to listen in on student discussions or could pull students into a one-on-one breakout room for quick individual discussions with the teacher. Distance learning structures such as these allow teachers to collect the evidence they need to inform next steps, while providing students with multiple opportunities to demonstrate their thinking, deepen their understanding and develop their disciplinary literacy skills (WestEd, 2020a).

Eliminating Barriers: Why Equity Matters in Formative Assessment

As we have discussed previously, planning for formative assessment involves intentional design to ensure that both students and teachers elicit meaningful evidence. Another aspect of this intentional design is ensuring that the evidence elicited is not clouded by unnecessary barriers that get in the way of students showing their learning. Equitable formative assessment ensures
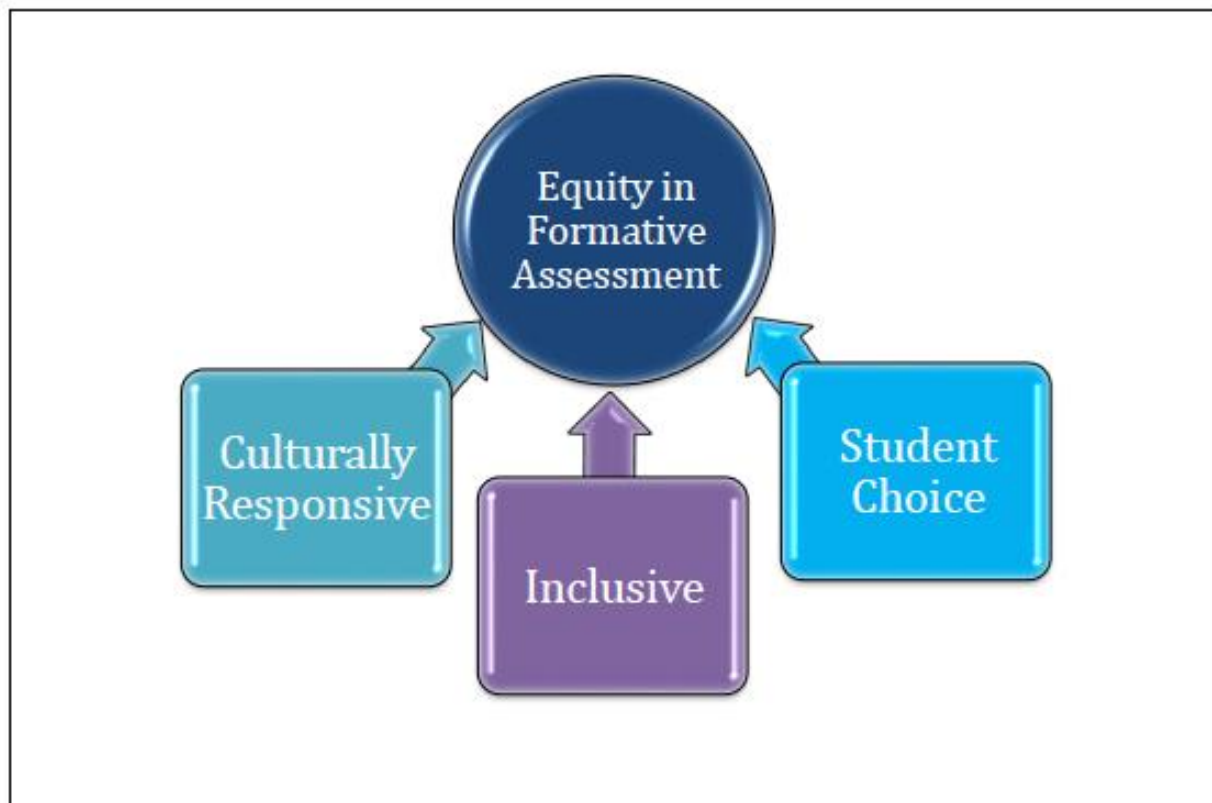
that all students, regardless of their unique experiences and qualities, can engage meaningfully in the formative assessment process and have an opportunity to show their thinking. Formative assessment is equitable when *every* student:

- Can fully engage in the formative assessment process;
- Is able to provide accurate evidence of what they know and can do;
- Receives feedback and support based on where they are in their learning; and
- Can build capacity to manage their own learning (WestEd, 2020a).

When eliciting evidence of student learning, teachers should consider how to ensure that all students can fully access the opportunity to make their thinking public in order to move their learning forward. When teachers use formative assessment the right way, they build meaningful relationships within their classrooms (Erkens, et al., 2017), but to do so requires an intentional design and use of strategies to ensure that opportunities to elicit evidence of learning are culturally responsive, inclusive and offer student choice. Strategies to elicit evidence should get at what students know and think rather than ignoring or hiding their thinking. Attending to these considerations in the design of strategies to elicit evidence of student learning can help build a classroom culture in which students are engaged and motivated to share their learning and students feel empowered to manage their own learning (WestEd, 2020b).

Figure 4.8. *Equity in Formative Assessment*

Culturally Responsive Formative Assessment

Culturally responsive instruction is a mindset that respects and values each student's culture, experiences and history and holds all students to high expectations (WestEd, 2020a). According to Gloria Ladson-Billings (2020), culturally relevant and responsive instruction promotes cultural competence, academic success and sociopolitical consciousness. To incorporate culturally responsive instruction requires an open mindset, intentional planning, strategic teacher actions and carefully planned student learning experiences. Effective formative assessment practice involves providing engaging instruction where students experience grade level tasks that build interest tied to their background knowledge and culture. By acknowledging students' ethnic, racial and linguistic identities within the context of their grade level work, we are providing students with formative assessment opportunities that are engaging, affirming and meaningful (Ladson-Billings, 2020). Culturally relevant and responsive instruction is important for formative assessment because it creates a classroom culture where all students are invited to effectively manage their own learning, and it allows students to provide evidence of student learning that truly demonstrates what students know and can do, unclouded by barriers and biases (WestEd, 2020b).

Bringing culturally responsive instruction into formative assessment practice requires considering each student's strengths and growth areas as one plans to elicit evidence of student learning. This means eliciting evidence of learning in ways that allow students to tap their cultural strengths, individual curiosities, learning styles and home language knowledge. Students engage in learning and sharing evidence of their learning in ways that are relevant and value their strengths and experiences. When considering culturally-responsive design in formative assessment, teachers should ask themselves, "Does this opportunity to share student learning allow each of my students to bring their cultural and language strengths to bear?" and "Does this opportunity disadvantage students who may not have prior knowledge related to the context?" (WestEd, 2020a).

Strategies for Culturally Responsive Formative Assessment

Culturally responsive formative assessment creates opportunities for students to provide and reflect on evidence of their own learning that truly reflects what they know and can do. Some examples of **strategies to support culturally responsive formative assessment** include:

- Welcoming students' full identity into learning by helping them activate prior knowledge that taps into their culture, language and history;
- Helping students make explicit connections between their own lives, what they are learning and the ways they are showing it;

- Giving students opportunities to celebrate and share their culture, language, experiences and community as they provide evidence of their learning; or
- Giving students opportunities to connect and apply their real world lived experiences to local community-based issues (Ladson-Billings, 2020).

Teachers should reflect on how they can bring a culturally responsive mindset to their formative assessment practice by considering:

- How can I demonstrate that I value my students' cultural and language strengths, experiences and histories?
- In what ways can formative assessment be culturally responsive in my classroom?
- How can I elicit evidence of student learning that values my students' broad range of strengths and experiences?
- How can culturally responsive formative assessment support student learning? (WestEd, 2020a).

Inclusive Formative Assessment

Formative assessment practices are inclusive when all students can fully access and engage in ways that allow them to demonstrate what they know and can do. Educators should plan to design evidence-gathering opportunities that ensure that all students are able to fully understand the language, symbols and information with which they are engaging, regardless of prior knowledge, language background or disability. This can mean representing information in different ways, explicitly teaching key vocabulary and symbols and checking for understanding (WestEd, 2020a).

It also means that all students, including English learners, students with disabilities, students of various racial and ethnic backgrounds, and students with a variety of learning styles, can be successful in expressing themselves. Teachers should regularly consider, "Does this opportunity allow each of my students to be successful in sharing what they know and can do?" This may include appropriate scaffolds and options to support expression that focuses on the learning, not on mandatory modes of expression that may pose barriers such as assessment bias.

Assessment bias refers to the "qualities of a test that can offend or unfairly penalize test-takers because of personal qualities such as gender, race, ethnicity, religion, or similar group-defining characteristics" (Popham, 2010). Inclusive education considers the diversity of all learners and is grounded in the premise that all students are special, have the potential to learn and deserve to be supported (Opertti, 2017). Inclusion in formative assessment seeks to eliminate biases and barriers by ensuring that all students receive equitable learning opportunities (WestEd, 2020a). According to WestEd some **Strategies for Inclusive Formative Assessment** include:

- **Knowing Your Learners:** Inclusive formative assessment practices start with understanding your learners. This means not only understanding and planning formative assessment to meet the specific learning needs of students with disabilities and English learners, but also understanding the needs of *all* students since learners have their own unique styles and methods for interacting (Erkens, et al., 2017).
- **Presenting Information Using Multiple Formats**: Providing information in a variety of formats (e.g., text, audio, video, images, graphs and charts) can ensure that diverse learners have access to the information they need to learn. Consider how specific learners access information and provide alternatives that can ensure their success (WestEd, 2020a).
- **Offering Students Options for Providing Evidence:** Formative assessment relies on eliciting evidence of student learning that can inform the students and the teacher about where students are in their learning. Allowing students different ways to share that evidence can help ensure that the evidence is meaningful. For example, could students present research findings as a written text, oral presentation or series of charts and still provide specific information about their progress toward the learning goals? Would that allow more students to be successful and provide a more accurate picture of where they are in their learning?
- **Using Appropriate Scaffolds and Accessibility Supports:** Students should be provided appropriate scaffolds, accommodations and accessibility supports to allow them to fully engage in the formative assessment process, including not only providing evidence of their learning, but also in the self, peer and teacher feedback that will inform next steps in learning.
- **Inviting Students to Provide Feedback:** Students should be invited to provide feedback on ways that the formative assessment process could be more inclusive. Did the accessibility support provided to students help them? Are there other strategies that could allow students to more effectively share their learning?
- **Considering Students' Remote Learning Environments:** This includes computer access, sufficient internet bandwidth, access to learning support, and the availability of a workspace that allows them to meet the learning goals and success criteria. This may mean allowing students to keep their camera off to conserve bandwidth, providing print materials, connecting with students by phone or allowing them to work during evening hours when they may have access to adult support at home. While teachers don't usually have control over these conditions, understanding them can support planning for alternative ways for students to access materials and share evidence of their learning (Fisher, et al., 2020).

Student Choice in Formative Assessment

The goal of formative assessment is not only to ensure that students meet their learning goals, but also that they develop the skills to manage their own learning (also known as self-regulation). According to Cassandra Erkens (2017), self-regulation is "an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior" (p. 113). When students have the autonomy or power to take ownership over their learning, students are said to have **agency**. Offering student choice builds student agency and ownership of learning, which is essential for the formative assessment process. The design of the range of evidence gathering strategies in a lesson should provide choice, autonomy and relevance for students. This promotes motivation and engagement and allows students to see themselves as the primary managers of their own learning (WestEd, 2020a). When considering **strategies for student choice in formative assessment,** teachers should:

- Start with clarity about the learning goals.
- Engage students in co-constructing success criteria.
- Offer multiple ways for students to share evidence of their learning.
- Welcome student ideas about reasonable alternatives to share evidence.
- Value different ways that students approach their learning.

Student choice should be anchored in strong teacher and student clarity about the specific learning goals so that teachers can determine where choice is appropriate and can improve the learning for students. Engaging students in co-constructing success criteria can give students a voice in how they show where they are in their learning. By providing students with different options about how they can share evidence of their learning, teachers help to ensure that students understand the specific learning they are focused on, no matter how they choose to share their ideas, and teachers create a safe classroom climate in which students have real opportunities to suggest alternatives and improvements (WestEd, 2020b).

Planning Evidence-Gathering Opportunities

Lesson Design Considerations: Different Evidence at Different Times
Years ago, psychologist David Ausubel (1968) argued that what the learner knows is the most important factor influencing student learning, and it is the teacher's job to ascertain this and plan accordingly (Wiliam, 2018). Teachers regularly plan the instructional activities that take place in their classrooms, but oftentimes, planning to elicit evidence from those activities are done "on the fly" (p. 83). Designing lessons that elicit meaningful evidence of student learning that can support students and teachers to move their learning forward is critical to the formative assessment process.

Over the course of a lesson, students are working on different things and in different ways as they build up to demonstrating their learning through the success criteria. This is important to keep in mind in designing evidence-gathering opportunities throughout a lesson because specific aspects of student thinking are more important at different points in the lesson. While some educators rely too heavily on only assessing students at the end or conclusion of a lesson, knowing *why* they are eliciting specific evidence and determining the aspects of student thinking they *most* want to focus on will help teachers decide where in the lesson they should elicit the evidence (WestEd, 2020a).

There are a multitude of evidence-gathering opportunities that can be employed throughout a lesson. The **beginning of a lesson** could include identifying prior knowledge, clarifying misconceptions or checking for understanding about learning goals and success criteria (just to name a few), while the **middle of a lesson** might include checking for understanding on key concepts and skills that build to the learning goals, providing opportunities for individual and collaborative sense-making or clarifying student misconceptions. The **end of a lesson** could include sharing progress toward success criteria or fine-tuning learning and performance toward success criteria (WestEd, 2020a). For discipline-specific examples of eliciting evidence at the beginning, middle or end of a lesson, visit Module 4: Eliciting Evidence of Student Learning found on the balanced assessment professional learning modules page.

It is important to ensure that over the course of a lesson, evidence-gathering strategies are aligned to disciplinary discourse and practices from multiple sources are prioritized. By engaging students in evidence-gathering opportunities that employ a **variety** of tasks and participation structures, teachers provide opportunities for a broader and well-informed view on student learning. When a variety of evidence is collected, teachers are more apt to determine when student learning is on track and when misconceptions are leading them in a different direction (Wiliam, 2018). These different tasks and structures should be aligned both to the learning goals and success criteria, but also to where students are during a lesson. Table 4.3 below provides a few examples of tasks and the corresponding participation structures teachers could incorporate in their classrooms (WestEd, 2020a).

Table 4.3. *Variety of Tasks and Participant Structures*

Participant Structure	Classroom Talk	Student Work	Peer and Self-Assessment
Independent	Conference with teacher	Written response, essay, jigsaw	Thumbs up/thumbs down, exit ticket, reflection journal

Participant Structure	Classroom Talk	Student Work	Peer and Self-Assessment
Pair	Turn and talk, peer conference, teacher and peer questioning, pair share, elbow partners	Presentation, work plan, graphic organizer, reading guide	Peer conference using a rubric, peer editing
Small Group	Teacher and peer questioning, discussion, share work	Presentation, work plan, graphic organizer, reading guide, jigsaw	Carousel, group presentation feedback
Whole Class	Teacher and peer questioning, classroom discussion	Class play, Four Corners, debate	Gallery walk, parking lot

Evidence-Gathering Routines

Evidence-gathering routines are critical to informing students and teachers about next steps in their learning. There are many evidence-gathering routines that are likely already in place in classrooms that teachers can leverage. The key is for teachers to choose routines which elicit evidence at different points throughout their lessons and to select strategies that best help to fuel the formative assessment process by maximizing equity, fairness and choice. According to WestEd, teachers can elicit meaningful evidence through **five primary evidence gathering routines**: activating prior knowledge, academic dialogue, questioning, observation and analysis of student work, and peer and self-assessment (2020b).

Routine #1: Elicit Evidence Through Activating Prior Knowledge

Activating prior knowledge is an important instructional strategy that can help students connect things they already know with new learning. It also is an opportunity to invite students' cultural strengths, language knowledge and personal identity into the learning and to promote engagement. Prior knowledge activities are also important opportunities to elicit evidence about where students are in their learning coming into a lesson. This helps to inform teacher decisions about building up background knowledge, clarifying misunderstandings and informing how to help all students find entry points into lessons.

Prior knowledge activation opportunities are often provided at the beginning of a lesson, but they can be employed throughout a lesson, whenever it is useful to connect what students are learning with what they might already know. The *Kentucky Academic Standards* provide

specific information about the vertical alignment of the standards that could be a helpful resource in planning to identify students' prior content knowledge.

- **In Mathematics:** Each mathematical standard (K-8) presents coherence in the clarifications section, providing links to the matching standard from the preceding and following grade.
- **In Reading & Writing:** The reading and writing standards also each offer progression information, linking to the matching standard in the preceding and following grade.
- **In Science:** The standards offer articulation of the Disciplinary Core Ideas (DCI) across grade levels.
- **In Social Studies:** The social studies standards are intended to convey the importance of both conceptual knowledge and understanding within four disciplinary strands in social studies (civics, geography, economics and history) and the development of the inquiry practices of questioning, investigating, using evidence and communicating conclusions. The complexity of the standards within the concepts and practices progresses from kindergarten through high school.

Routine #2: Elicit Evidence Through Academic Dialogue

Engaging in academic dialogue allows students to both share and develop their thinking. It supports exploration of ideas, connections and inquiry. When students talk, teachers (and students themselves) can better understand what students know, the strategies they are using and how they are thinking about the content. When structured equitably, eliciting evidence through academic dialogue should:

- Build a classroom culture that encourages questions, suggestions and learning from mistakes within small and whole group structures.
- Establish opportunities to explore multiple viewpoints and solutions.
- Ensure dialogue allows for equitable participation by all students.
- Establish consistent use of both large and small group dialogue.
- Anchor discussion in disciplinary practices and discourse to make meaning in the subject area (when aligned to learning goals and success criteria).
- Provide an opportunity for culturally responsive formative assessment that is fair and accessible to all students (WestEd, 2020b).

Routine #3: Elicit Evidence Through Questioning

Asking questions is a key aspect of the way that students and teachers interact in classrooms. However, questions that focus on right or wrong answers or student questions that generate a closed exchange, don't generate meaningful evidence of student learning to inform the formative assessment process. When intentionally designed and implemented, effective questions are a powerful tool to gather evidence of student learning, as well as to guide

students to manage their own learning through the next steps of the formative assessment process. Teachers seeking to gather meaningful evidence through questioning should:

- Plan questions in advance.
  - Develop questions that will elicit thinking at key points in the lesson.
  - Sequence questions to address growth in student knowledge and skills over the course of the lesson.
- Apply the research on effective questioning.
  - Allow for adequate wait time.
  - Integrate questions that encourage higher-order thinking.
  - Employ pre-thinking strategies (pair/share, pre-write) when asking cognitively complex questions.
- Use questions to engage in assessment conversations.
  - Build on student thinking to make connections. (*How would this connect to what we studied in our last unit on motion?*)
  - Challenge students to prove their thinking. (*What evidence do you have to prove that?*)
  - Probe students' ideas and misconceptions. (*What would it look like if…?*)
  - Bring other student voices into the conversation. (*What do you think about what was just said? Can you build on his response?*)
  - Engage others to elicit different thinking. (*Can you think of a different way to approach that problem?*)

Assessment conversations differ from typical teacher question/student answer interactions in that they are designed to explore student thinking. Teachers should identify the questioning routines that they find most powerful to help them plan for those strategies in advance. For example, mathematics teachers looking for resources to support questioning might choose to reference the *Kentucky Academic Standards* resource: [Engaging the SMPs: Look Fors and Question Stems](). By thinking through the kind of evidence of student learning specific questions elicit, and how they use that evidence, teachers are better able to plan questioning routines that ensure evidence is meaningful, fair and offers choice. Through modeling of routines and structures, students begin to internalize the questioning stems they hear their teachers using and can begin to support the learning of others by replicating similar stems with their peers (WestEd, 2020a).

Routine #4: Elicit Evidence Through Observation and Analysis of Student Work
Student work can take a variety of forms. With thoughtful design, it can be a powerful way to elicit evidence of student learning. Students who review work and understand the qualities of that work have an increased understanding of how to grow in their own achievement (Erkens, et al., 2017). When planning to elicit evidence of student learning, teachers should keep in mind

that any evidence collected needs to focus on making student thinking visible so that it can inform next steps in learning. It also can prioritize disciplinary practices and discourse to ensure that student thinking is anchored in the specific disciplinary learning outlined in the standards. Some **examples of student work that elicit evidence** of this type could include:

- Drawings;
- Investigations;
- Diagrams;
- Student writing;
- Graphs;
- Graphic organizers;
- Concept maps;
- Detailed outlines;
- Model building; or
- Student notes (WestEd, 2020b).

Regardless of which type of evidence students are asked to elicit, teachers should intentionally design evidence-gathering opportunities that are fair and promote choice and autonomy so that students can accurately show their thinking and begin to manage their own learning. Teachers should ensure that students fully understand the language, symbols and information with which they are engaging and that they have the appropriate scaffolds and options to support expression of that learning (WestEd, 2020a).

Routine #5: Elicit Evidence Through Peer and Self-Assessment
Teachers are not the only ones responsible for eliciting evidence of student learning in the formative assessment process. Students also play a key role by developing the metacognitive skills that allow them to see that by making their ideas and learning visible, they are providing evidence of their own learning. Once they understand this, students can better elicit and interpret the evidence they collect from themselves and their peers (Wiliam, 2018). While this isn't something most students do automatically, through modeling, direct instruction and structured opportunities, students can become effective at eliciting and using evidence of learning. Providing these supports is the teacher's role (p.83). While peer and self-assessment routines are designed to help students manage their own learning, it is also an opportunity for teachers to gain insight into students' thinking as they elicit and use evidence from their peers (WestEd, 2020a).

Additional Planning Resources
In addition to the *Kentucky Academic Standards* resources listed for activating prior knowledge above, KDE offers additional resources to support teachers in offering standards-aligned lessons. These resources include content-specific protocols for reviewing assignments as well as

example assignments. For a more in-depth analysis of these resources for mathematics, reading and writing, or social studies, consider reviewing the KDE's [Assignment Review Protocols](#) or [Student Assignment Library Resources](#).

Interpreting Evidence of Student Learning

As emphasized earlier in this framework, understanding where learners are heading and how they will know if they are successful is essential for teaching and learning and is a key aspect of quality assessment practices. Knowing if students are successful throughout the formative assessment process requires that teachers and students continually interpret meaningful evidence elicited from student learning. Evidence is defined as any student learning that can be observed, and it is understood in relation to the specific learning goals that students are working toward. This continuous, ongoing process of interpretation is often referred to as **evidence-based interpretation** and is used to engage students and teachers in identifying where students are along their learning progression and where they need to go next based on a careful analysis of student artifacts.

Teachers can better understand a students' learning development when they move beyond just knowing which students "got it" or "didn't get it." Knowing whether an assignment is complete or incomplete does not provide any actionable evidence that can be used to move learning forward. When teachers have clarity on the disciplinary and cognitive path towards learning goals and can clearly communicate that information to students through regular, ongoing feedback, students are better able to develop the skills to become self-directed learners and move their learning forward (WestEd, 2020a). Students who can conduct self-assessment and interpret evidence of their own learning are continually developing the skills necessary for becoming self-regulated learners (Chappuis, et al., 2017).

Engaging Students with Interpreting Evidence of Learning

Student engagement is key to the interpreting of evidence and allows teachers and students to meaningfully engage in the formative assessment process by embracing opportunities to make learning public. When students are engaged in interpreting the evidence of learning they produce, they are developing the skills of metacognition (thinking about their thinking) and self-regulation (WestEd, 2020a). Because metacognition involves knowing what one knows and can do, growing research suggests that the most effective learners are self-regulating learners. When we train students to reflect on evidence of their learning and be metacognitive, their performance in the classroom is improved (Wiliam, 2018).

According to John Hattie's research (2009), metacognitive strategies have an effect size of 0.69. Together, disinhibition - the skill of not being distracted or stuck, updating/monitoring what we

are learning, and being skilled at shifting between tasks to attack problems combine to form what is referred to as metacognition or self-regulation (Clarke & Hattie, 2019). Self-regulated learners monitor their learning by comparing their work against specific learning goals and success criteria and the ideas of their peers, making adaptations to their learning strategies as they see fit. When self-regulated learners engage in this process, they can make connections between behaviors exhibited during the learning process and evidence of learning produced, thus strengthening their own understanding and the understanding of those around them (WestEd, 2020a).

Classroom Culture and Evidence

Climate and culture are often used interchangeably. However, the two are not synonyms. **Culture** reflects the norms, values, beliefs and traditions that are transmitted historically over time. Culture influences climate but is more fluid in nature. **Climate** is how members of a community experience that community, the mood of the community per se. The formative assessment process, in which students and teachers must work together to move students toward their disciplinary learning expectations and to become self-directed learners, relies on both classroom culture and climate (WestEd, 2020a). In order to sustain the work of formative assessment, the classroom culture must be carefully monitored and structured (Erkens, et al., 2017).

How can classroom culture support students to use evidence of their own learning? Students can become the kind of self-directed, engaged learners who can recognize evidence of their own learning, embrace opportunities to make their learning public and engage with evidence when the classroom culture empowers them to engage fully in the formative assessment process (WestEd, 2020a). In the book, *Visible Learning Feedback* (2019), authors John Hattie and Shirley Clarke share the following **seven key elements of an effective feedback culture** (p. 8):

Key Element #1: Feedback resides within a framework of formative assessment.
Feedback is one of the key ingredients of formative assessment. Improving learning through assessment requires that educators involve students in their own learning and self-assessment by sharing learning goals with them, helping students understand next steps, knowing how to take those steps and how best to improve. This is underpinned with the belief that all students can improve and that assessment has a tremendous influence on students' motivation and self-esteem (p. 9).

Key Element #2: Our goal for all learners is to give them the motivation, curiosity and willingness to learn and deepen current understandings (what Hattie refers to as "the skill, will, and thrill").

- **The Skill:** Knowing and building on what students bring to the classroom by teaching students the skills to own their own learning (leads to students' self-feedback);
- **The Will:** The learning dispositions students hold and bring to learning experiences; and
- **The Thrill:** Motivating students to be invested in achieving the success criteria through co-construction and involving them in self-assessment (p.13).

Key Element #3: Spaced and deliberate practice, metacognition, embedded challenge mindsets and mind frames are effective.

- Spaced practice elicits improvement when teachers plan practice that is deliberate and the result of continual ongoing feedback. Massed practice - that is practice opportunities given in large amounts or within a shorter time frame - is not effective.
- A growth mindset - the belief that one's skills, qualities and intelligence can develop over time with work - is enabling and most effective when students are in situations of "not knowing" and need to invest in learning more, such as when they make mistakes.
- Positive teacher mind frames go a long way to ensure authentic and effective feedback strategies for students. Positive mind frames bring about feelings of value and self-efficacy in students, which can have a more desirable impact on learning outcomes (p. 23).

Key Element #4: The key to new learning is for the normalizing and celebration of error.
Students should feel safe to take risks in learning and make mistakes. Students are more enabled and invested in learning when they are in situations of "not knowing" and make mistakes (p. 13). Errors invite learning opportunities and should not be seen as shameful or embarrassing (p. 27) since making errors and having opportunities to correct those errors.

Key Element #5: Mixed ability grouping maximizes equity in learning.
Mixed ability grouping can help to build motivation, social skills and independence and raise standards because students become more engaged in their own learning. Placing students in similar ability groups has negative equity effects because students in the top or bottom groups wonder why they should invest in their learning when the system has already made its decision (p. 38).

Key Element #6: Feedback should be task related, not ego driven.
Mixing feedback about learning with praise "interferes with and dilutes the message about learning." While praise for effort or praising specific student behaviors can sometimes prove helpful at building relationships, the most effective praise type is praise given to students for performing an activity well against various criteria (p.44).

Key Element #7: External rewards act as negative feedback. We need to motivate students intrinsically to want to learn.

Programed instruction, praise, punishment and extrinsic rewards are the least effective forms of feedback. Hattie has determined that extrinsic rewards have a negative effect size of -0.34 on task performance. The use of extrinsic rewards also has been found to undermine engagement and regulation (p. 46).

Effective Student and Teacher Feedback

James Popham defines formative assessment as "a planned process in which assessment-elicited evidence of students' status is used by *teachers* to adjust their ongoing instructional practices or by *students* to adjust their current learning tactics" (2010). This definition highlights the key role students can play in the assessment process, and at the heart of students' self-assessment and peer assessment lies feedback (Bailey & Jakicic, 2012).

Feedback remains one of the most powerful influences on student achievement (Hattie, 2009). Used as a basis for improvement, feedback provides information about a person's performance. When broken down into two parts, the word *feed* means to nourish, and *back* means in exchange or in return. Therefore, "feedback is meant to nourish learning through an exchange" (Almarode & Vandas, 2019).

Effective feedback helps students understand where they still need to build proficiency and guides them to employ the specific strategies needed to improve (Bailey & Jakicic, 2012). Simply put, effective feedback communicates to learners where they are and where they need to be. According to Susan Brookhart, the following **three criteria characterize effective feedback** (Almarode & Vandas, 2019):

1. **Timely -** Students have opportunities to respond to content close in time to when they were engaged in the learning and teachers provide ongoing feedback to students throughout the learning process so that adjustments and improvements can be made as needed (p.134). Feedback effectiveness is determined by whether it is delayed or immediate. Delaying feedback is helpful only when students have additional opportunities to respond through error analysis or test corrections. In most cases, immediate feedback is the most effective form of feedback because it allows learners the opportunity to make corrective modifications during their continued practice (p.135).
2. **Specific** - Giving students specific feedback regarding an action, event or process or additional steps they can take to improve on a task is more effective than general feedback (p. 135).
3. **Constructive** - Focused feedback that is specific to the learning and not just the learner and supports the learning process is considered constructive (p. 136).

There should be a focus in classrooms on timely, effective feedback and self-reporting (Bailey & Jakicic, 2012), and as John Hattie stresses in *Visible Learning*, "When teachers seek, or at least are open to, feedback from students as to what students know, what they understand, where they make errors, when they have misconceptions, when they are not engaged - then teaching and learning can be synchronized and powerful. Feedback to teachers helps make learning visible" (Hattie, 2009).

Self and Peer Assessment

The purpose of self and peer assessment is to help students manage their own learning. Students who manage their own learning can set goals, make plans, monitor their progress and adapt their approaches to learning. Essential to this process is being able to view their own work and the work of their peers critically and use it to make decisions about how to proceed in their learning (WestEd, 2020a).

Whether it's through a well-designed project, a well-written essay or a strong hypothesis, students need a clear picture of the features of quality work. Unfortunately, educators are often the ONLY ones to evaluate and categorize student work based on its quality. However, many educational experts argue that by engaging students in the process of defining quality, students are empowered to make meaning from information. Rather than simply being handed a rubric or list of criteria, students can make personal connections to information, which often results in students taking charge of their own learning. When students begin to make comparisons between their work and the indicators of quality, they are generating the kind of feedback they need to assess their own learning (Bailey & Jakicic, 2012).

If students and teachers do not have a shared understanding of the learning they are working toward and a shared sense of quality, students will not be able to appropriately manage their own learning. Teachers need to explicitly teach self-assessment, give students opportunities to practice self-assessment and model the strategies students will be utilizing as embedded classroom routines within the formative assessment process (WestEd, 2020a). Helping students understand where they are in their progress compared to where they need to be increases the likelihood that students will address their own learning gaps during self-assessment opportunities (Erkens, et al., 2017).

Common View of Success

To build a common view of success, teachers can help students internalize expectations in a variety of ways. Some of these include using (WestEd, 2020a):

- **Learning goals and success criteria**: If students are to use them to guide their understanding of their own progress, they need more than just seeing the learning goals and success criteria posted on the board. To assess students using the success criteria often involves teachers and students conferencing to discuss what students are doing well and what they need to work on moving forward. By creating a box or checklist for each criterion, students can discuss each criterion they have mastered and justify that mastery through the evidence collected and demonstrated up to that point. These conferences can be conducted as an independent student reflection, between peers or teacher to student and should lead to a natural goal-setting conversation (Almarode & Vandas, 2019).
- **Transparent evaluation criteria**: Students should understand how their learning will be evaluated and what criteria will be used to determine where students are in their understanding. Regardless of the type of feedback, tool or approach used, students will ultimately need to know: What does quality look like? Who determines what quality looks like? Where am I in this learning process? Where do I need to go next? In *Hidden Lives of Learners,* we find out from Graham Nuthall's research that up to 80 percent of the feedback that students receive every day is from their peers and 80 percent of the time that peer feedback is wrong or inaccurate. Therefore, it becomes increasingly more important for teachers to model providing quality feedback to students using learning goals, success criteria and a variety of elicited evidence examples (p. 144).
- **Examples and non-examples**: Providing students with examples that can illustrate what success might look like can strengthen student understanding of what students are working toward. Examples can be used to further illustrate non-examples by showcasing common missteps students may make and possibly modeling how to improve the non-example.
  - An example of this in reading and writing could be an argument that is well supported by evidence while a non-example could be an argument that lacks relevant support.
- **A variety of approaches**: Teachers also can provide students with examples of multiple approaches that can lead to success. This acknowledges students' diverse learning needs, differing learning styles and diverse background knowledge through the ability to be successful and take ownership of their learning.
  - An example of this in social studies could be to demonstrate how different types of primary sources can be used to support an argument (political cartoons, propaganda posters, voice recordings of oral histories, diaries, photographs, maps, economic data and letters). Teachers also can offer students choice in the lesson to empower students to take charge of their learning. For example,

students could find their own primary sources or choose three sources from a set of six that the teacher has compiled.

Explicit Teaching and Modeling

Nearly everything a teacher does during a lesson can be seen as modeling, but deliberate, purposeful modeling is a powerful instructional strategy. Teaching and modeling with self and peer assessment is no different. Teachers can help students develop their self and peer assessment skills by **making intended learning visible** and modeling what it looks like to make evidence of their own learning visible. By sharing their own work and process, teachers demonstrate what it looks like to view your own ideas and work as evidence and use that evidence to make decisions (WestEd, 2020a).

Teachers can help students learn to make sense of their own learning by providing **explicit instruction and modeling of self-assessment** to demonstrate how to look at evidence of their own learning in the context of the learning goals and success criteria. (WestEd, 2020a). By thinking aloud and comparing a shared teacher example against specific success criteria to describe the ways in which the example measures up (or doesn't measure up) to those criteria, teachers are explicitly modeling the self-assessment process they hope students will replicate (Almarode, et al., 2019).

In the same way that teachers can make self-assessment explicit, they can support students in understanding where their peers are in their learning by thinking about evidence of their peers' learning in the context of the learning goals and success criteria. This requires helping students understand they have a responsibility to notice their peers' learning and to respond in ways that support progress toward the learning goals through **teaching and modeling of the peer assessment.** An example of this in social studies might involve showing students how to evaluate the reliability of a source so that students can provide feedback when evaluating peers' arguments such as (WestEd, 2020a):

- I'm not sure that I trust this source. Do you know if the author is an expert on the issue?
- Do they have experience that gives them authority?
- Do you have another source that supports, or corroborates the information in this one?

Practice

Students need the time and space to practice engaging with evidence of their own learning and the learning of their peers. For students to develop the skills that they need to be independent learners, students need multiple opportunities to practice "underpinned by specific, clear goal-based instruction." This practice that works "hand in hand with specific skill building, deliberate teaching, feedback, and success criteria" is what is often referred to as deliberate practice

(Hattie & Clarke, 2019). In order to get better at applying success criteria to their work and the work of their peers, students need opportunities to practice in an environment that makes it safe for them to manage their own learning and support the learning of their classmates through the following (WestEd, 2020a):

- **Classroom culture:** As discussed previously, students can engage in the formative assessment process when they are learning in a context that supports them to do so. To practice and improve at self and peer assessment, students need a culture that supports them to make meaning for themselves, manage their own learning, and participate and contribute to a collaborative environment; a culture that makes space for errors and mistakes as learning opportunities.
- **Low-stakes:** Students can practice and get better at meaningful self and peer assessment when they view assessment as an opportunity to understand where they are in their learning in order to make decisions about how to improve, as opposed to a way to determine if they are right or wrong, or whether they get a good grade or a bad grade. This could mean giving student pairs a set of questions to ask each other to guide peer-assessment of arguments that the students have constructed. Teachers also can gather evidence of student learning by observing students as they evaluate each other.
- **Repeated Opportunities:** Just like with other skills your students are learning, students need ongoing and repeated opportunities to practice the skills related to self and peer assessment. There is a need to progress from scaffolded self and peer assessment to being able to apply success criteria to evidence independently.
- **Feedback**: Repeated practice needs to be coupled with specific feedback about how students are doing at self and peer assessment. Students need a chance to hear their teachers' perspective on what they are doing well and how they can sharpen their peer and self-assessment skills to become more independent. Students also need opportunities to discuss their own reflections on the process. Too much feedback overwhelms the learner and can distract from the learning goals and success criteria while too little feedback leaves the student and teacher unsure as to where to go next. Feedback should be planned around the Goldilocks principle - "not too much, not too little, but just the right amount" (Almarode & Vandas, 2019).

Tools and Strategies for Interpreting Evidence

In addition to teaching, modeling and opportunities to practice, teachers can provide a variety of strategies and tools that students can use to build student responsibility, ownership and the skills they need to manage their own learning through self and peer assessment. These tools and strategies are not intended to be a one size fits all. Teachers will need to determine which tools and strategies are developmentally appropriate for the students they teach. Some

examples of tools and strategies that can support students to make sense of evidence of their learning and that of their peers include (WestEd, 2020a):

- Templates;
- Self and peer correction checklists and look-fors;
- Sentence starters;
- Student-friendly rubrics;
- Background knowledge anchor charts;
- Graphic organizers for the intended learning sequence;
- Student reflection sheets;
- Question prompts; and
- Explicit comprehension strategies.

Strategies for Interpreting Evidence of Student Thinking
When teachers interpret evidence of student learning, they are focusing both on the progress of individual students and the class or groups of students in terms of their learning progressions. As teachers look at evidence of student learning, they are looking for gaps between where students are in their learning and where they are headed. There are multiple strategies that teachers can employ to interpret evidence of student thinking including (WestEd, 2020a):

- **Probing and unpacking students' responses** in order to get an accurate idea of students' progress toward learning goals. Merely identifying a gap is not enough to support effective pedagogical action. Teachers need to understand why there is a gap in order to support students to move forward, and students need to understand what helps and what hinders their understanding so they can work together to close those learning gaps (Erkens, et al., 2017).
  - **In Reading and Writing:** For example, a teacher may look for students simply restating what is presented in a quotation in their writing, as opposed to elaborating and making connections to their overall claim in opinion/argumentative writing.
  - **In Social Studies:** In a whole class discussion, a student might begin to describe how a primary source supports an argument. Probing with questions such as, *"Say more about that. What do you mean?"* can draw out and unpack student knowledge.
- **Interpreting evidence in light of specific disciplinary misconceptions** or issues that may constrain students from reaching their learning goals. Teachers can draw on their content knowledge as well as their understanding of how students learn disciplinary ideas and skills to anticipate these kinds of issues and support in-process pedagogical responses (WestEd, 2020a).

- o **In Reading and Writing:** For example, the teacher might notice a group of students misinterpreting the diction, or word choice, in a sentence or paragraph of text, which hinders their ability to analyze and explain how those words and phrases shape meaning and/or tone in the context of the passage or larger text.
- o **In Mathematics:** Teachers can encourage students to describe the process, the conceptual understanding, and informally the mathematical practices that drive a problem-solving process.
- o **In Science:** For example, a demonstration of a phenomenon that cannot be explained using the misconception might help some students reason through the misconception OR having small groups construct concept maps showing connections and interrelationships can produce evidence that allows students to see and discuss differences between their own thinking and the thinking of their peers.
- o **In Social Studies:** For example, before learning more about it, some students believe that the Constitutional protection of rights applies in every case, when in fact instances such as a parent searching a child's bedroom do not violate the child's Fourth Amendment rights. Evidence of this kind offers an example to teach about the difference between state action and non-state action.

- **Looking for patterns that show common errors, misconceptions or issues among groups of students**. This analysis supports direct feedback and support to individuals and groups of students. But it also should prompt reflection on and continuous improvement of the teacher's practice.
  - o **In Reading and Writing:** For example, the teacher might notice a student who claims to be opposed to gun control in an opinion/argument piece, yet the student cites reasons and/or textual evidence indicating he or she is in favor of the issue.
  - o **In Mathematics:** The teacher might notice that a group of students can identify fourths when each part of the whole is the same shape and size (e.g., a rectangle partitioned horizontally and vertically into 4 same-sized squares), but cannot identify fourths when this is not true (e.g., a rectangle partitioned into two halves vertically, where one half is partitioned into two same-sized parts vertically and the other half is partitioned into two same-sized parts horizontally).
  - o **In Science:** For example, a teacher might notice from student diagrams or explanations that students' models of substances at the particle level do not include empty space (physical science), that objects sink because they have less mass (physical science), that plants obtain food energy by absorbing from soil

through their roots (life science), or that Earth is the center of the solar system (earth and space science).

- o **In Social Studies:** For example, a group of young students may think about history through the lens that Christopher Columbus "discovered the New World," when in fact people had been living in North America for thousands of years. Or students may think of American Indians living in undisturbed natural environments when evidence suggests they changed the natural forest composition through land management techniques such as burning.

Evaluating the Quality of Your Evidence

Even when evidence-gathering opportunities are carefully constructed and are aligned to learning goals and success criteria, the evidence elicited can still be clouded by other factors. An important step in making meaning of student evidence is evaluating the quality of the evidence in the context of the learning goals and success criteria. To best evaluate the quality of evidence that has been gathered, teachers should carefully consider their students' prior knowledge, any language or technological barriers that exist, and how questioning can be utilized to propel student thinking and learning forward. This sometimes means filtering extraneous information that doesn't provide insight into students' current learning status relative to the learning goals and success criteria and focusing tightly on the intended learning (WestEd, 2020a).

- **In Reading and Writing:** For example, a teacher may observe students misusing common grammar structures in a partner discussion focused on summarizing the central idea and supporting evidence in an informational text. If the learning goals are focused on comprehending and expressing ideas about informational text, oral language errors can be a distraction from the intended learning of the lesson.
- **In Mathematics:** If a student is asked to work independently on a math problem that requires them to have a working knowledge of the game of golf, the evidence of learning being analyzed may not be representative of that student's math knowledge if the student does not have the appropriate prior knowledge structures to engage with the content of the problem.
- **In Science:** For example, if students are asked to work independently on a physics problem about Newton's laws that requires them to have a working knowledge of a particular sport or the terminology specific to that sport, the evidence of learning may not be representative of the student's science knowledge if the student does not have the appropriate prior knowledge structures to engage in the problem. Complex scientific terminology and idiomatic usage of scientific terms (such as the common usages of terms like *energy* or *work)* may also be language barriers for students that prevent them from producing evidence that reflects their understanding.

- **In Social Studies:** A teacher may observe students misusing common grammar structures in a partner discussion focused on analyzing a primary source. If the learning goal is focused on using primary sources to identify strategies used by groups facing discrimination, oral language errors are extraneous information.

Evaluating the quality of evidence also can mean considering possible factors that may be limiting your students' capacities to demonstrate what they know and can do relative to the learning goals and success criteria. Some examples of factors that may impact the quality of the evidence of student learning to inform good decisions about student learning include:

- **In Reading and Writing:** If students struggled in a lesson in which they were asked to determine a theme of a text and analyze its development through citing textual evidence, paraphrasing or summarizing , teachers should unpack whether this was because students struggled with the intended learning for the lesson or whether there were other factors at play (i.e., students were unable to read the passage).
- **In Social Studies:** If students struggle to understand the point of view in a primary source, teachers should ask questions to determine whether this is because students are having difficulty with unfamiliar, archaic language or with a lack of historical context.

As teachers work to identify any issues clouding evidence, it's an opportunity to go back and elicit evidence in a different way to ensure that they understand what their students know and can do. The formative assessment process is based on utilizing meaningful evidence of student learning. Teachers must be aware of the other filters that may impact a student's ability to demonstrate their knowledge as it relates to the evidence elicited to demonstrate specific learning goals and success criteria (WestEd, 2020a). Table 4.4 below summarizes evidence quality for the various aspects of feedback (Hattie & Clarke, 2019).

Table 4.4. *Quality of Feedback Evidence*

Aspect	Higher Feedback Evidence	Ineffective Feedback Evidence
Goal Setting	- Higher feedback evidence addresses task goals directly. - A specific and challenging goal is set, often with criteria for a high-quality performance on a task. - The goal is communicated so that students understand it (e.g., co-constructed success criteria and excellent examples are modeled and analyzed).	- Goals are vague and/or not used. - Students do not understand the learning goals or success criteria.

Aspect	Higher Feedback Evidence	Ineffective Feedback Evidence
Kind of Feedback	• Higher feedback evidence draws attention to positive elements of the performance (i.e., the details of correct responses). • Higher feedback evidence can include constructive criticism: advice that encourages the student to improve task performance. • Higher feedback evidence can refer to changes in performance from previous efforts. • Higher feedback evidence can include an element of self-assessment by students (including peer assessment) as part of the process of encouraging student autonomy and responsibility.	• Ineffective feedback evidence is focused solely on incorrect responses. • Ineffective feedback evidence does not provide information or support to improve performance or understanding. • Ineffective feedback evidence has a focus on comparisons to other students or marks and grades. • Ineffective feedback evidence relies on extrinsic rewards (i.e., stars, stickers) and/or includes punishment.
Level of Feedback	• Higher feedback evidence provides information about a task, how well it was performed and how to do it more effectively. • At the process level: How can the student improve the learning processes needed to understand and perform the task? • At the self-regulation level: How can the student do a better job of planning, monitoring/managing their actions and using strategies in approaching the task (described as metacognitive feedback)?	• Non-specific feedback is given, such as praise or criticism for task performance without detail. • At the self-level: Comment on personal student qualities (positive or negative) with little or no information about processes or performance.

*Adapted from _Visible Learning Feedback_ (Hattie, et al., 2019).

Anticipating Student Understanding

By anticipating the understanding of knowledge and concepts that students bring when embarking on new learning goals, teachers position themselves to respond with in-process feedback and questioning that can quickly move students in the right direction. Anticipating

possible student responses is a set of skills that teachers hone over time as they develop their deep knowledge of the discipline and understanding of how students progress through their disciplinary learning. Teachers also rely on contextual factors including the profile of their individual students as learners and the specific way that learning is structured in the lesson (WestEd, 2020a). Because much of learning today relies on meaning making and conceptual understanding, the assessment practices of recall and memorization from years past are simply not enough (Erkens, et al., 2017).

Teachers prepare for a lesson by reflecting on common preconceptions, misconceptions and challenges or confusions that might arise for the students in their class. By thinking about when they are likely to arise in the lesson, teachers can plan to use strategies that will support students to clarify and advance their learning. Planning to use these strategies allows teachers to be ready to quickly take appropriate pedagogical action for many of their learners. Key to anticipating student responses to interpret in-process evidence is responding to what the student presents in the evidence of their learning, not what they do not do. Interpreting evidence to inform the formative assessment process is about more than just catching what students may not get right but rather where they are in their thinking and why (WestEd, 2020a).

An example of what it could look like to anticipate student understanding when planning a lesson is included in table 4.5 below (WestEd, 2020a):

Table 4.5. *Anticipating Student Responses in Social Studies*

Learning Goal	Success Criteria
Use primary sources to identify and evaluate successful strategies used by groups facing discrimination to expand their rights and liberties.	I can describe the strategies advocated by key Civil Rights leaders to improve equality. I can construct an argument, supported by evidence from multiple sources, about whether specific strategies were successful.

Start of Lesson	Middle of Lesson	End of Lesson
Evidence Gathering Strategy: Questioning	**Evidence Gathering Strategy:** Self and Peer Assessment	**Evidence Gathering Strategy:** Disciplinary Discourse

In small groups, probe student ideas and misconceptions about the topic.	In pairs, students create graphic organizers to organize arguments.	As a class, engage in a discussion anchored in student-found evidence.

Using the social studies learning goal and success criteria in Table 4.5 above as an example, a teacher might anticipate student learning by answering the following questions below. One of many possible responses or teacher considerations are listed in italics beside each question as an example:

1. What are common challenges or misconceptions that might arise in teaching this content? *Students often understand history in overly simplified terms. For example, the Montgomery Bus Boycott was not simply a result of Rosa Parks refusing to give up her seat. Students may believe that all historical sources are equally trustworthy.*
2. How will I support students at these points in the lesson? *Guide students as they evaluate sources to understand the context of historical events and the multiple perspectives of the historical actors. Help students understand how to evaluate sources by asking questions that require them to think critically: Who wrote the document and why? What claims does the author make? What is the author's point of view? Under what circumstances was the document created? Do other documents agree?*

Examples of Evidence-Gathering Strategies Across Disciplines

Start of Lessons

As mentioned previously, evidence-gathering routines are critical to informing students and teachers about next steps in their learning. According to WestEd, teachers can elicit meaningful evidence through **five primary evidence-gathering routines**:

- Activating prior knowledge;
- Academic dialogue;
- Questioning;
- Observation and analysis of student work; and
- Peer and self-assessment (2020b).

All five strategies can be employed at differing stages through a lesson and may be better suited for a specific discipline, depending on the student responses that teachers are anticipating and the intended learning goals. While this is only a sampling and not a comprehensive list, Table 4.6 below provides some example strategies across disciplines and the potential student misconceptions that can arise. Each paragraph explanation that follows coincides with a matching row or strategy within Table 4.6. The following planned evidence gathering strategies, coupled with anticipated student responses in order to facilitate in-

process feedback during teaching and learning, are just a few examples that can be used at the beginning of a lesson.

At the start of a reading and writing lesson, students can engage in **disciplinary discourse** in small groups, discussing the type of textual evidence they would be looking for to support a claim. This collaborative discussion can support students to focus their attention as they read a variety of texts to find supporting evidence. Based on knowledge of the discipline and how students progress in their learning, as well as understanding of specific students, the teacher of this lesson may anticipate a few ways in which students may get stuck. The teacher may be looking for students who suggest evidence that does support the claim or who generate ideas about one type of evidence only. Either of these approaches may constrain a student from finding a variety of textual evidence that could support the claim, so timely, in-process feedback could allow the student to shift their thinking and be better positioned to achieve the success criteria (WestEd, 2020a).

Activating prior knowledge at the beginning of a mathematics lesson can help to identify students' conceptual understanding or elicit misconceptions students may have to clarify for teachers as to where to begin the lesson. It also can help students make connections between what they know and what they are learning and engage them in thinking about the learning goal. In science, the teacher may be looking for students who are unable to identify more than one property of the materials presented or who are able to identify only the simplest properties (e.g., color, shape). Either of these may limit a student from making the observations and measurements that could allow them to extend their ability to investigate. Activating prior knowledge helps to make student thinking visible early enough in the lesson so that teachers can clarify misconceptions or add on to current student understanding (Wiliam, 2018).

Eliciting evidence through **questioning** allows the social studies teacher to elicit and explore student thinking. Using the evidence gathering strategy of questioning at the beginning of a lesson may help teachers discover that students have little prior knowledge of the Civil Rights movement itself. Students with some knowledge of the Civil Rights movement might assume that there was a single strategy for improving equality to which all Civil Rights leaders agreed. Teachers could support students at this point in the lesson by guiding them to recognize and consider multiple perspectives. Then, as students examine primary sources throughout the lesson, continue to ask questions that compel students to analyze how each new perspective reflects the context and priorities of the historical individual (WestEd, 2020a).

Questioning also can reinforce a classroom culture that encourages learning and risk taking and supports students in their learning. In preparation for using this strategy, teachers should plan some of their questions in advance and then be ready to follow up based on student responses, thus encouraging a conversation. Teachers should keep in mind the research on effective

questioning, such as wait time, questions that encourage higher level thinking and pre-thinking strategies appropriate for the grade-level (such as pair/share). The beginning of a lesson is also an opportunity to gather and evaluate evidence of students' use of the inquiry process. Using the inquiry process throughout the lesson will guide students to think like a historian so that they make comparisons, apply reasoning, evaluate sources, interpret and synthesize evidence, and craft well-supported arguments (Wiliam, 2018).

Table 4.6. *Example Evidence Gathering Strategies - Start of Lessons*

Discipline/Content	Evidence Gathering Strategy	Potential Issues Impeding Student Understanding
Reading & Writing	**Disciplinary Discourse:** In small groups students discuss what type of textual evidence would be relevant to support the claim.	• Suggesting evidence that is not relevant or does not strongly support the claim. • Thinking narrowly about only one type of evidence.
Mathematics	**Activating Prior Knowledge:** Practice counting skills as a whole class.	• Skipping a number in the counting sequence • Saying the number sequence out of order • Using incorrect words to name numbers
Science	**Activating Prior Knowledge:** In pairs, students make observations of a small set of materials to identify and name their properties.	• Able to identify only one property among multiple possibilities • Struggles to name properties • Only materials that are rigid are identified as solids
Social Studies	**Questioning:** In small groups, probe student ideas and misconceptions about a topic, including, but not limited	• Lack of prior knowledge • All Civil Rights leaders agreed

Discipline/Content	Evidence Gathering Strategy	Potential Issues Impeding Student Understanding
	to the presence of multiple perspectives.	

Middle of Lessons

The same five evidence-gathering routines employed at the start of a lesson can be utilized throughout lessons as well to inform students and teachers about next steps in their learning. Teachers need to be mindful of the evidence they are planning to elicit at the beginning, middle and end of a lesson to adjust the strategies and tools they are planning to use throughout. For example, while some lessons may use the evidence-gathering strategy of questioning throughout an entire lesson, other lessons may switch between discourse and activating prior knowledge to ensure that the evidence that is collected is meaningful for students and teachers. Table 4.14 below provides some example strategies across disciplines and the potential student misconceptions that can arise. The following planned evidence-gathering strategies, coupled with anticipated student responses in order to facilitate in-process feedback during teaching and learning, are just a few examples that can be used throughout lessons (WestEd, 2020a).

Throughout a reading and writing lesson, the teacher could circulate around the classroom to review individual student evidence and annotations and to ask probing **questions** to deepen and guide student thinking. Again, teachers can anticipate student responses based on their knowledge of the discipline and how students progress in their learning, as well as their understanding of specific students. Teachers can use that to support immediate feedback to help students move their learning forward toward the learning goals and success criteria.

The teacher may be looking for students identifying textual evidence that doesn't relate well to the claim, overreliance on a single source, misinterpretations of the evidence selected or not explaining how they would use the evidence in an explanatory or argumentative essay. By identifying these possible issues in advance, the teacher may be better equipped to take timely pedagogical action at this point in the lesson, adjusting and scaffolding the questions asked based on what they see and hear (Erkens, et al., 2017).

An evidence gathering strategy that can be used by the mathematics teacher in the middle of a lesson is **questioning**. Anticipating student responses, lesson planning should consider possible misconceptions or confusions students might have about the content embodied by the learning goals and success criteria that can surface as a result of teacher and peer questioning. Connecting this strategy to the kindergarten learning goal of counting objects put together in

different ways, questioning might involve asking students to show various ways to count a set of buttons. This activity engages student understanding about whether the number of buttons changes based on which button the counting sequence starts. For additional supports around mathematical questioning, visit the Grade Level Samples found on the KDE's Professional Learning Modules page for mathematics.

Eliciting evidence through **questioning** in science lessons allows the teacher to collect and explore student thinking. This strategy also can reinforce a classroom culture that encourages learning and risk taking and supports students in their learning. In preparation for using this strategy, teachers should plan some of their questions in advance and then be ready to follow up based on student responses, thus encouraging student discourse. The teacher may be looking for students struggling to describe measurements and observations that they could use to determine properties. Teachers also may notice limitations in discipline-specific vocabulary that keep students from being able to describe patterns, such as flexibility, texture or properties of mass and volume (WestEd, 2020a).

In social studies, as students investigate the disciplinary strand standards, teachers can ask probing questions to determine if their understanding is "emerging, partially formed, fragmentary, or at the point where it can be consolidated" (Heritage, et. al., 2020).

By knowing whether students understand the different perspectives and strategies of the various Civil Rights leaders, for example, they can advance student learning by building on prior knowledge to reach new understandings. Scaffolded **questioning** supports students in reaching an understanding on their own, thus empowering students to become self-regulated learners. The middle of a lesson is an opportunity to evaluate student understanding of disciplinary practices around analyzing historical social studies sources through **self and peer assessment**. Teachers should consider if students can evaluate perspective, credibility, and bias in the sources and think about the questions they can ask and answer about this source to determine its credibility. Using the example strategy below (see Table 4.7) in this way helps students organize their arguments and makes their thinking visible (WestEd, 2020a).

Table 4.7. *Example Evidence Gathering Strategies - Middle of Lessons*

Discipline/Content	Evidence Gathering Strategy	Potential Issues Impeding Student Understanding
Reading & Writing	Questioning: Teacher circulates around the classroom reviewing individual student's evidence and annotations	• Comprehension challenges • Evidence identified is not relevant to claim • Over reliance on a single text

Discipline/Content	Evidence Gathering Strategy	Potential Issues Impeding Student Understanding
	and asking questions to deepen and guide student thinking.	• Misinterpretation of the selected textual evidence • Annotations do not explain how to use evidence in essay
Mathematics	**Questioning:** Ask students to show different ways to count the buttons.	• Thinking that the number of objects is related to the order in which objects are counted • Struggling to keep track of which objects have been counted
Science	**Questioning:** As a class, students brainstorm strategies they could use to find patterns in the properties of materials.	• Confusion about ways of describing the amount of substance • Struggles with strategies involving quantitative measurements (e.g., using a ruler to measure length)
Social Studies	**Peer and Self-Assessment:** In pairs, students create graphic organizers to organize arguments.	• Credibility of primary sources • Perspective in primary sources • Bias in primary sources

End of Lessons

As students approach the end of a reading and writing lesson, students engage in **peer and self-assessment** by asking students to evaluate the quality of their own textual evidence and annotations and assess those of their peers. Teachers can support students to think critically about the textual evidence and annotations they provide so that they can consider and respond to any challenges or misconceptions themselves. In doing so, teachers could help students look for peers struggling to make a strong connection between the textual evidence and the claim, insufficient evidence to support the claim or not including evidence that can help them address the opposing claim (WestEd, 2020a).

Peer and self-assessment also can be used in mathematics at the end of a lesson. By anticipating student responses, lesson planning should consider possible misconceptions or confusions students might have about the content embodied by the learning goals and success criteria that can be surfaced during group work (Wiliam, 2018). Connecting this strategy to the kindergarten learning goal of counting objects put together in different ways could involve asking students to work together to count a given set of objects or create a set of objects of a given number. Students in each group could count a given set of objects silently, sharing out their counts as they model their counting processes. This allows others to see how a student arrived at the number of objects and to provide additional thinking when necessary. In the same way, each student in a group could make a set of objects given the number of objects and then compare their sets with each other, again modeling the understanding engaged and providing additional thinking when necessary (WestEd, 2020a).

As students approach the end of a science lesson, they can engage in **peer and self-assessment** by explaining the observations and patterns in properties they used to sort their materials with their peers. Students could assess whether their peers' material properties were sorted appropriately. Teachers can support students to think critically about their patterns and to extend their thinking while watching for students struggling to make the measurements and observations that can be used to make comparisons, find patterns in their observations or describe the patterns they used.

Communicating conclusions is the final step in the inquiry process. As students communicate their conclusions at the end of social studies lessons, they may be tempted to frame arguments in absolute terms (e.g., The Civil Rights movement was a failure.). When students think like a historian, they uncover the nuance and complexity of historical events. Probing, discipline-specific questions can help guide students to a more balanced view of historical events and eras (e.g., Was any legislation passed during this era that improved equality? What was the effect of the decision in *Brown v. Board of Education*?). As they engage in a discussion about their evidence, evaluate student **disciplinary discourse** to determine their level of understanding of the topic and their progress toward the success criteria. Students should be guided to consider the conclusions reached by other students. For example, they could be asked, "Can you restate what your classmate has said?", "Do you think the evidence supports that conclusion?" or "Will you explain your reasoning?" Questioning and whole class reflections also can help students evaluate their own evidence-based conclusions in light of others' feedback. Using the example strategy below (Table 4.8) in this way helps students anchor their discussions in student-found evidence and makes their thinking visible (WestEd, 2020a).

Table 4.8. *Example Evidence Gathering Strategies - End of Lessons*

Discipline	Evidence Gathering Strategy	Potential Issues Impeding Student Understanding
Reading & Writing	**Peer and Self-Assessment:** Partners practice linking annotated evidence to the claim by providing reasoning.	• Issues connecting evidence to claim • Not identifying enough evidence to fully support the claim • Not identifying evidence that can address opposing claims
Mathematics	**Peer and Self-Assessment:** Students work together to count items and make groups as requested.	• Counting an object more than once • Thinking that rearranging the objects might change the number of objects
Science	**Peer and Self-Assessment:** Students sort new materials into groups and explain the patterns in properties they used to a peer group.	• Patterns limited to only easily observable properties rather than including less obvious patterns in properties (e.g., uses of the materials, strength, flexibility, texture) • May leave some materials out of the groups
Social Studies	**Disciplinary Discourse:** As a class, engage in meaningful discussions and democratic discourse that respects diverse opinions.	• There are absolutes in history.

Strategies and Tools for Interpreting Evidence

In addition to anticipating common student responses, teachers can employ a variety of strategies to support them to interpret evidence of student learning in ways that facilitate effective pedagogical responses during the learning. Interpretation strategies should be anchored and aligned to both the stated learning goals and success criteria, as well as to the type of evidence needed to demonstrate student mastery. Additionally, strategies should reflect how they will be used. Teachers need different tools and strategies to analyze and respond to student learning and students need them to make sense of their own learning and the learning of their peers. While much of this interpretation happens "on the fly," as

mentioned previously, educators must anticipate student thinking as part of their planning process. A few questions teachers need to consider include (WestEd, 2020a):

- What questions might unlock student thinking?
- What whole-class discussion might need to happen and with what focus?
- Are examples and artifacts of student work needed?

Teacher-facing strategies and tools can help teachers focus their attention on key learning in a lesson by tracking their observations and marking which success criteria students have met. One strategy that teachers could use to track student progress can be as simple as a checklist (e.g., on a clipboard or electronic tablet), such as the one seen below in Table 4.9. In this reading and writing example, the teacher is circulating among students as they discuss relevant evidence in a passage to support the claim. While overhearing conversations and through direct questioning, the teacher can note students who are able to both identify evidence and then connect that evidence to a claim. They are also then able to keep track of who is getting stuck and establish small groups for those students struggling on specific concepts. Regardless of the discipline, column headers are tied to the success criteria the teacher lays out at the beginning of the lesson, so check marks and notes can show progress toward meeting those criteria (WestEd, 2020a).

Table 4.9. *Example Teacher-Facing Strategy*

Student	Can identify relevant evidence	Connects their evidence to claim	Notes
Juan	✓	✓	Relying on only one source, redirect to another text
Hannah	✓	-	Focusing on topic, not argument
Cinda	✓	✓	Effectively connecting evidence to claim verbally, struggling in writing
Min	-	-	Comprehension challenge, provide alternative text sources and individual support
Jackson	✓	✓	Good example of refuting opposing evidence - share with class

Peer-Assessment Strategies

Student-facing strategies are used by students. They provide the language and structure to assist students in making sense of their learning and the learning of their peers. When students are self-assessing, a pre-planned set of questions related to the success criteria help students gauge their *own* understandings. When students are assessing their *peers*, a pre-planned set of questions related to the success criteria help students gauge their *peers'* demonstrated understanding. Teachers should clearly communicate the purpose of the questions and how they connect to the success criteria for the lesson. When teachers can co-construct assessment criteria with students, the relevance of the questions is made clear for students. With young children, this activity can be simplified to drawing a face that communicates how they feel about what they know and can do in relation to the success criteria.

Table 4.10 below is an example of a student-facing tool that could support students to effectively engage in this activity in ways that help them move their learning forward. Each student could work with their peers to answer the questions about their own work. This is an example of a more scaffolded strategy to support students' emerging skills at peer and self-assessment. Here you see that the student demonstrated that they did three criteria well and needed to improve on one. The goal of tools like these is not just to manage the specific activity, but to help students develop skills that will allow them to independently assess and manage their own learning (Erkens, et al., 2017).

Table 4.10. *Example Student-Facing Strategy*

My Evidence	What I did well	What I can improve
My evidence is convincing.	✓	
I can explain how my evidence supports the claim.	✓	
My evidence offers more than one argument to support the claim.	✓	
My evidence responds to the counterargument to the claim.		✓

Self-Assessment Strategy: Prompts

Teachers also can take advantage of strategies which encourage students to self-assess their learning. Teachers and students can use a prompt to co-construct and engage students in thinking about their own learning as they engage in the lesson. Prompts are an example of a

less scaffolded strategy to support peer and self-assessment. For example, in reading and writing, teachers could use the prompt, "How do I know that the evidence I have chosen supports the claim?" Students and teachers can work together to develop the specific criteria they will use to evaluate their work (prompt responses). Students and teachers should consider the following questions as they begin to co-construct evaluation criteria (WestEd, 2020a):

- How will students know they are successful?
- Why are they successful?
- What are they getting stuck on or need more practice with?

Prompt responses may be written down for the teacher to collect as evidence or they may be used as paired or group discussions that students engage in with their peers. For more discipline-specific resources on interpretation strategies and prompts, consider reviewing the KDE's [Interpreting Evidence Module 5](#) .

Acting on Evidence of Student Learning

Regardless of the assessment type or purpose, acting on evidence of student learning is probably the most important, and all too frequently overlooked, element of the assessment cycle. Acting on evidence of student learning helps to answer the third question in the assessment cycle of "Where to next?" (See figure 4.18 below) because teachers and students have opportunities to receive feedback. Both students and teachers benefit from continually acting on meaningful evidence of student learning because, without this crucial step in the assessment cycle, students and teachers cannot effectively determine where they are headed. Students need this information to determine if they are successful and adjust their learning tactics, and teachers need to know if the classroom instructional practices they are utilizing have a positive impact on student learning (Popham, 2010).
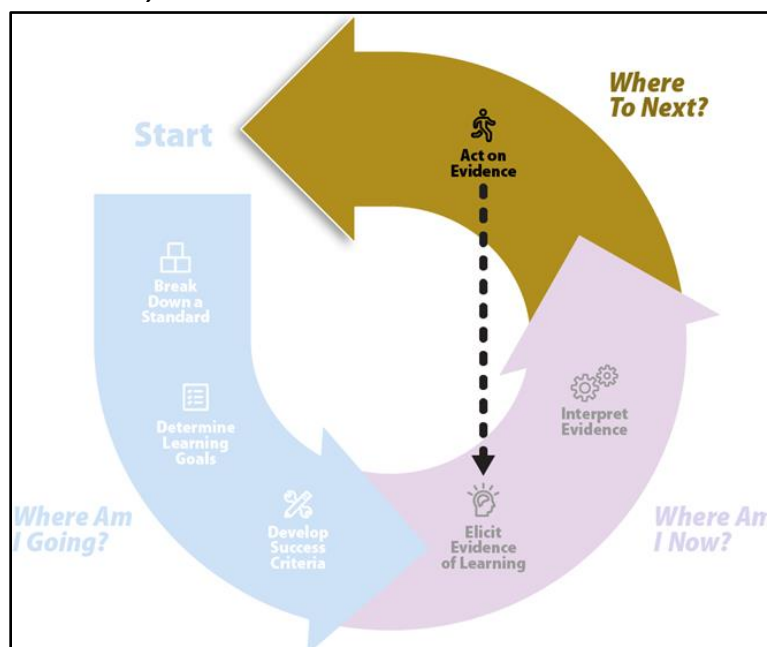
Assessment Purpose and Grain Size

According to Dylan Wiliam in *Embedded Formative Assessment* (2018), how an assessment is used or functions determines whether the assessment is deemed formative or summative. The action taken by the teacher should be contingent upon the purpose of the assessment tool or strategy and should reflect the student learning goals and progressions. In a **summative** assessment context, where the learning goal includes a culmination of standards and comes at the end of a learning period, the evidence usually informs teacher or leaders' actions related to district policy, programs or practice decisions (e.g., investments in culturally responsive teacher professional learning, design of a support strategy to ensure intervention implementation fidelity or making future adjustments to the curriculum). In **interim** assessment, where the learning expectations include a smaller group of standards, the evidence usually informs actions

toward future instruction (i.e., revising upcoming instruction to address gaps or identifying students in need of additional enrichments or interventions). Formative assessment is ultimately about using the evidence elicited to answer the question, "Where to next?" so that students can move toward their learning goals. When we consider the **formative** assessment process where the learning expectations are narrowly focused on a smaller grain size of the standards, evidence should inform action about the day-to-day moves that students and teachers make in the classroom to move students along their learning progression (WestEd, 2020). With formative assessment, these actions should occur more frequently as data is collected by students, peers and teachers more often. By providing students with specific, timely feedback in an ongoing and regular assessment cycle, we give students the tools they need to accelerate towards their learning goals more quickly. When students are making progress towards their learning goals, often the formative data collected supports teachers in determining that the best course of action is staying the course and continuing with the pedagogical strategies they are currently using, while a lack of progress suggests an immediate change in the course of action is needed (Wiliam, 2018).

As illustrated in the assessment cycle in Figure 4.9 below, the dashed line that connects "act on evidence" to "elicit evidence of learning" reflects the repetitive, cyclical nature of the formative assessment process. Using meaningful evidence of student learning aligned to the learning goals and success criteria, informs pedagogical action and empowers students to manage their own learning. After taking pedagogical action, it is important to elicit further evidence to determine if the action chosen successfully moved student learning forward and to inform what comes next in helping students move along their learning progression.

Figure 4.9. *The Assessment Cycle*

Taking Pedagogical Action

In the formative assessment process, students and teachers interpret meaningful evidence of student learning to get a clear picture of the current status of learning in relationship to the learning goals and success criteria. This interpretation is then used to make decisions regarding the pedagogical actions that should be embedded in student learning. Dylan Wiliam (2018) states that one of the most difficult aspects for teachers transitioning to formative assessment is giving up old instructional practices, while replacing them with new ones that will have a greater impact on student learning. In the transition, teachers often add new assessment practices (sometimes with good intentions) without taking away old ones. For instance, they may add a variety of formative checks or self-assessment tasks but continue to give the old unit tests that have been around for years. In this example, the teacher must evaluate both the tests and results from the student formative tasks. Nothing was taken away and removing the tasks that had less impact on student learning would be best here. Being responsive to this evidence by removing what is not working demonstrates that the teacher has a detailed knowledge of students' current level of understanding in relation to their progression of learning (RIDE, 2021). The section that follows will take a closer look at the variety of forms pedagogical action may take.

Pedagogical Action #1: Telling

Telling is a pedagogical strategy teachers can use to supply what students need at the moment (i.e., an unknown word or steps for task completion) to enable them to maintain momentum in the learning process. This instructional strategy requires teachers to make professional judgments by removing barriers to learning so that students do not become unnecessarily frustrated. Telling should only be used when students are stuck to keep student learning moving forward; it should not eliminate productive struggle or prevent students from increasing the complexity of their thinking. Some discipline-specific examples of telling include:

- **In Reading and Writing:** Telling students an unknown phoneme or sight word when decoding words could be an effective strategy to keep students engaged in learning and moving forward when the told word or sound does not interfere with the overall learning goal(s).
- **In Mathematics:** Selective telling can help to move learning forward by providing useful terminology, ways of representing mathematical ideas or counterexamples to student conjectures to keep students engaged in learning and moving forward toward their learning goals. For example, consider a classroom discussion focused on incorrect mathematical reasoning (e.g., counting the tick marks on a number line instead of the spaces between the tick marks). Inserting statements to challenge the reasoning can

help to shift student thinking away from incorrect conceptualizations towards correct conceptual understanding.

- **In Science:** Telling students who are confused, "The rats eat seeds and fruits, but they also eat insects and crawfish."
- **In Social Studies:** Telling can level the playing field, removing temporary obstacles on the way to deeper learning. For example, telling students the meanings of unfamiliar words like "manumission" or "usufruct" in Thomas Jefferson's letters may eliminate some of the frustrations that students can experience with historical texts.

Pedagogical Action #2: Directing

In her book *Literacy Lessons Designed for Individuals* (2016), author and researcher Marie Clay discusses how students often need clear and explicit language (e.g., "Do this. Don't do that.") to know exactly what teachers want and expect from them. This specific verbal instruction is a strategy referred to as directing. When teachers use directing, they are giving a specific instruction to let the learner know what he or she is supposed to do. Some examples might include:

- "Find the sentence or passage in the text that suggests…"
- "Write the letter for the sound…"
- "Turn to your partner and share…"
- "Point to the number…"

Directing can be used across disciplines to increase the level of clarity with students, particularly when providing teacher-to-student and peer feedback. A few examples of content-specific directing include (WestEd, 2020a):

- **In Reading and Writing:** Teachers may use directing as a strategy when facilitating a peer review of student written essays.
- **In Mathematics:** Teachers might use directing as a strategy when students struggle to read provided directions (e.g., a kindergarten activity involving sorting shapes) or to guide specific classroom actions (e.g., solve the problem on your own, then discuss with your neighbor).
- **In Science:** Teachers may use directing as a strategy when all students should follow the same process such as, "Draw and label all parts of your model."
- **In Social Studies:** A teacher may use directing as a strategy when describing steps in an assignment. For example, "Identify two reasons given by Richard Hakluyt for supporting English colonization of the New World."

Pedagogical Action #3: Explaining

Explanations are verbally explicit directions tailored to individual student needs and intended to help students develop their own understandings. While explanations are similar in nature to directing, teachers may use explanations to introduce an unfamiliar concept, clear up misconceptions, explain a process or clarify the steps of a specific learning strategy, such as taking notes. Explaining is focused on helping students develop their own understandings so they can apply them to their learning. Explanations are often paired with pedagogical action #5, modeling, since demonstrating a skill or process often requires teachers to explain steps or think-aloud. Some discipline-specific examples of explaining include (WestEd, 2020a):

- **In Reading and Writing**: The teacher may use a model text to help explain how onomatopoeia or another literary device works.
- **In Mathematics:** For example, not all concepts can be deeply understood through discovery alone. Explanations are often needed for mathematical procedures or to justify the need for differentiating between mathematical representations (Mathematical procedures such as writing ordered pairs as (x, y); determining the value of an expression using order of operations; and formal terminology for mathematical representations).
- **In Science:** For example, a teacher who observes a student struggling to make sense of a phenomenon may need to explain part of a core idea by saying, "Striped fur may be an advantage in an environment with lots of plants, but it might be a disadvantage in another with bare soil. That's one way geographical location can lead to speciation. Can you think of any others?"
- **In Social Studies:** For example, a teacher who encounters confusion about the relationship between political parties in the Civil War era and political parties in the modern era could briefly explain how and why the Democratic and Republican parties changed over time.

Pedagogical Action #4: Prompting

Prompting can help students access and apply prior learning as a bridge to new learning and moves beyond surface level understanding because it often forces students to apply what they have learned previously to a new learning situation (Fisher, et al., 2021). Prompting may take the form of a reminder, a strong hint, a clue or question and should always be followed by adequate wait time. Prompting is most effective when the teacher has a clear picture of where individual students are along a learning progression in order to formulate a prompt that will successfully bridge to new learning (e.g., moving students up to the next stage along their learning progression). Some discipline-specific examples of how teachers might utilize prompting in their classrooms include (WestEd, 2020a):

- **In Reading and Writing**: Prompting could be used when students are working to decode challenging text and the teacher is attempting to get the student to reread the text and monitor for meaning.
- **In Mathematics:** Prompting is an excellent strategy when helping students build connections between new content and previously learned content or for providing differentiation in feedback to students. For example, when solving a multi-digit addition problem, a teacher might ask a student struggling with the computation to solve a problem using numbers with fewer digits and then connect that solution process to the original problem.
- **In Science:** Prompting is an excellent strategy when students are making sense of a phenomenon and need a reminder of previously learned content to make a connection to improve understanding or skills. For example, a teacher may ask a struggling student to explain how energy flows within an ecosystem to think of the way energy flows in a simple food chain (e.g., sun to producer to consumer) and then connect that mental model to the food web of the larger ecosystem.
- **In Social Studies:** Prompting is an excellent strategy when students need a reminder of previously learned content in order to make a connection, to help students get to the next stage of learning with a question or to highlight information so students can synthesize the information to draw a conclusion.

Pedagogical Action #5: Modeling

Modeling is a deliberate and purposeful instructional strategy in which the teacher demonstrates a new concept or approach to learning and students learn by observing. Modeling describes the process whereby students learn or acquire new information, skills or behaviors through observation, rather than through trial-and-error or student practice. Deliberate, purposeful modeling is a powerful instructional strategy, which makes learning visible by verbalizing the teacher's reasoning out loud, explicitly narrating thinking during a problem-solving process as they demonstrate a specific skill. Many initial metacognitive and self-regulatory skills needed for students to be successful as learners begin at a young age through observation and modeling (Salisu, 2014).

Modeling often involves a gradual transfer of responsibility from teacher to student as students become familiar with the concepts, skills or behaviors being demonstrated. This gradual transfer of responsibility is often referred to as the Gradual Release of Responsibility Model (GRR) and purposefully shifts the cognitive load from the teacher as a model to the joint responsibility of teacher and learner; whereby at the end of the process, students are ultimately able to independently practice and apply what they have learned (Pearson & Gallagher, 1983).

Some examples of modeling used in the classroom across disciplines include (WestEd, 2020a):

- **In Reading and Writing:** Modeling can be used when asking students to incorporate prosody (expression) in their voice as they are reading. Teachers can first model what that sounds like before asking students to practice reading with expression on their own.
- **In Mathematics:** Modeling can be used to demonstrate various strategies for solving a problem to show multiple representations or strategies to solve a problem. This gives the teacher opportunities to facilitate conversations with students to develop an understanding of efficient problem solving and classroom norms related to responding to the thinking of others. (Note: This type of modeling is not referencing the [Mathematical Modeling Cycle](#) outlined in the KAS, but is speaking to how teachers might demonstrate an instructional strategy in a deliberate and purposeful way).
- **In Science:** Similar to how the practice of modeling in science can help a person "see" an unseen cause to help explain a phenomenon, the strategy of modeling as a pedagogical action is used to help make scientific and engineering thinking and strategies visible to students. For example, when a student is struggling with how to use evidence to make and support a claim, a teacher could model the thought processes used to reason through or analyze data aloud. The teacher can talk through how different pieces of evidence support or do not support a particular claim and how data can help formulate or revise a claim.
- **In Social Studies:** Modeling is an excellent way to make disciplinary strategies visible. For example, a teacher may ask a struggling student to explain economic interdependence and then connect that definition to understanding why countries depend on each other to produce products.

Pedagogical Action #6: Questioning

Asking questions is an ideal way to develop students' understanding through discussion and exploration. Well-designed questions can allow students to uncover answers for themselves about their own learning and can help scaffold students to deeper understandings. When teachers probe answers with follow-up questions, they can yield information that can support evaluation of current understanding and identification of appropriate next steps.

Based on the level of cognitive demand required to answer them, questions are typically classified by levels. Perhaps the most widely known system for categorizing the cognitive level of questions is Bloom's taxonomy (1956), in which the six levels of cognitive demand move from low to high orders of processes. Lower-order questions ask students to recall and comprehend material that was previously read or taught by the teacher while higher-order questions ask students to apply information previously learned to create or support an answer with logically reasoned evidence. Both higher- and lower-order questions are useful and have

their place in the teaching-learning process depending on the purposes they serve (Corley, 2013).

Some examples of questioning used in the classroom across disciplines include:

- **In Reading and Writing:** Questioning is a strategy that supports students in their comprehension and can be used to scaffold students to more complex levels of thinking. Students can self-question as they read to think deeper about the text. Teachers can question students to evaluate if students are making meaning from what they are reading.
- **In Mathematics:** The development of meaningful questions should be part of the planning process as teachers think about the ways in which students are likely to engage with the content and the places where concerted questioning might help guide student learning. Questions should be open-ended, allowing for a range of responses, with the potential to stimulate additional student conversation and collaboration.
- **In Science:** Questioning is a strategy that supports educators in eliciting targeted evidence of student understanding in order to adjust instruction in real time. Meaningful questions should be developed as part of the planning process and be designed to empower students to reflect on their own knowledge, skills and abilities to make sense of the world around them.
- **In Social Studies:** Questioning could be used in social studies to encourage students to view historical texts or documents from varying perspectives they may not otherwise have considered on their own (WestEd, 2020a).

Pedagogical Action #7: Feedback
From John Hattie's research (2012) we see that feedback yields an effect size of 0.70, which is equivalent to almost two years' worth of growth in one year's time; feedback is one of the most impactful pedagogical strategies a teacher can employ in the classroom when done effectively. According to Hattie (2012), feedback's primary purpose is to feed-forward learning by equipping the receiver to act. However, when we unpack the purpose of feedback, we see that feedback requires an action, event or process - a person's performance. In classrooms, teachers must provide students with opportunities to respond for feedback to even be possible.

Because feedback is used as a means for continuous improvement, timely, specific and constructive feedback is needed to enable students to reflect on their use of strategies during learning and determine which strategies were helpful and which hindered their progress. By giving and receiving effective feedback on and for learning collaboratively with the teacher, students are better equipped to answer the three questions for effective feedback: Where am I going?, How am I going (or doing)? and Where to next? Providing feedback that gives hints, cues or suggestions rather than total solutions will assist students to build a repertoire of

learning strategies as they become more metacognitive, self-regulated thinkers (Almarode, et al., 2019).

Both teacher-directed and student feedback is a central element of the formative assessment process. Below are some examples of how feedback could be used in content-specific areas:

- **In Reading and Writing:** Students may provide each other with peer feedback on an opinion/argument piece by looking for specific evidence used to support a claim. For example, "I see in your essay that you disagree with offering peanut products in our school cafeteria. You discussed several examples of those peanut-based foods, but I'm not seeing where you gave specific reasons for why serving them in our school is a bad idea."
- **In Mathematics:** Some examples of mathematics teacher-provided feedback are:
  - "I see that you determined the answer to the problem, but the reasoning doesn't help me understand your thinking. Can you tell me about your thinking to help you think about words that might help others understand?"
  - "I see that you wrote an expression that models the situation. Is there a different expression that could also be written? What must be true about a different expression and the expression you wrote for them to model the same situation?"
  - "I see that you and your partner have the same answer, but the way that you found the answer is different. Work with your partner to determine how two different ways might be used to find the answer."
- **In Science:** Teachers should consider wording feedback so that it allows students to reflect on their own skills and knowledge as they reconsider, revise or enhance their ideas. For example, a student has developed a model of the water cycle using marbles to represent the water molecules. The model was supposed to be used to explain what causes movement of water through the water cycle but falls short. Feedback could be provided in the form of a question, prompting the student to reconsider a part of their model. "I like how you used the marbles to represent water molecules, but could you use this model to explain what causes the water molecules to rise up into the air or why they are pulled back down to the surface?"
- **In Social Studies:** One example of actionable teacher feedback could include comments such as, "This quotation works well because it describes Rosa Park's background in her own words, showing that her involvement in the bus boycott was not a momentary whim."

Reflecting on Pedagogical Action

As in assessment types, pedagogical strategies are not a one-size-fits-all. While the seven actions just discussed can be applied to most all classrooms, regardless of age level or content area, teachers need to be prepared to adjust feedback to meet the needs of specific learners. When considering the different pedagogical strategies discussed above, teachers may want to reflect on the following guiding questions in the context of their own practice (Almarode, et al., 2019; WestEd, 2020a):

- Which strategies do I rely on most?
- Which strategies should I try to engage in more, and why?
- How do I decide which strategy to use in specific instances?
- Which strategies are well-suited to the content and the students I teach?
- What challenges do I find with any of these strategies? How might I overcome those challenges?
- Which learning tasks are well-suited for feedback from the teacher, self or peers?
- Have I modeled the success criteria for students using examples, models or exemplars?
- What structures have I modeled for students to provide one another with feedback?
- Have I provided students with multiple opportunities to practice giving and receiving feedback?
- What opportunities have I provided to gradually release responsibility away from me to my students? How and where might I intentionally embed more?
- How have I engaged in these different pedagogical actions in a remote, hybrid or face-to-face learning setting?
- Which of these pedagogical actions are well-suited for a remote learning context and which are more challenging?
- How might I adapt these actions for use in the remote, hybrid, or face-to-face learning environment?

Taking Action in Professional Learning Communities

As mentioned in the previous section of this framework, in order to make meaningful decisions about their instructional practices, many educators participate in professional learning communities (PLCs). Teachers and school leaders who effectively engage in the PLC process take time to develop common formative assessments, collect student data from those assessments and even collectively work to examine student evidence (Bailey & Jakicic, 2012). However, for many teachers, taking the time to respond and act on the evidence of student learning is often a step that teachers often fail to prioritize amidst all of their other professional responsibilities. Teams need time to respond to the evidence they collect in order to make the responsive changes necessary to improve teaching and learning. This involves intentionally

setting time aside for teachers to analyze, plan and prepare. PLCs provide this embedded time and structure within the school week for teachers and leaders to collaboratively identify common learning goals, develop assessments linked to those goals, conduct the assessments across student subgroups and process the results together to determine next steps. By analyzing the evidence collected from multiple common assessments, teachers learn how they can improve their instruction and have a clear picture of which pedagogical actions worked well (and which did not) for individuals or groups of students. This analysis lays the groundwork for teachers to make intentional decisions about the strategies they will employ in future lessons to continuously improve their practice (Chappuis, et al., 2017).

While common formative assessments provide teams with important information to plan for future learning opportunities on a weekly basis, teachers need to gather evidence from a variety of sources to formatively assess where students are for their day-to-day, minute-by-minute decisions in the classroom. As Mattos, et al. (2016) caution, "relying on any one type, method, model, or format of assessment would be a seriously flawed assessment strategy." Because assessment of a student's work should provide an array of information on progress and achievement, the challenge becomes how teachers "match appropriate assessment strategies to curricular goals and instructional methodologies'' (p. 104).

One critical element in this planning is integrating strategies to gather evidence of student learning *during* the learning, and then having the essential tools and strategies at your fingertips to interpret and act on that evidence (WestEd, 2020). When teachers begin to see that students are making progress as a result of the pedagogical actions they are taking in their classrooms and the strategic decisions made within PLCs, they are more apt to believe that all students can learn (Bailey & Jakicic, 2012) and begin to see value in the formative assessment process.

Four Characteristics of Effective Feedback

In the formative assessment process, feedback is designed to empower students to make decisions about where to go next in their progress toward their learning goals. This requires thoughtful feedback that:

1. Relates to the student learning goals and success criteria;
2. Is actionable for the student;
3. Is specific to the learner; and
4. Helps students manage their own progress towards learning goals.

Characteristic #1: Related to Learning Goals and Success Criteria
The primary purpose of feedback in the formative assessment process is about communicating to students where they are in their learning relative to where they are going. In order to engage

fully in applying feedback to their learning, students must have a clear understanding of their learning goals and success criteria. Effective feedback also requires the teacher to have a strong understanding of the learning pathway that leads students toward the learning goals and success criteria so that they can offer feedback that clarifies next steps in learning for the students. For teachers and students to clearly see progress towards the learning goals and success criteria, every opportunity to respond offered to students should make their thinking visible (Almarode, et al., 2019).

Characteristic #2: Actionable

Feedback is effective if it creates a shift in student thinking that allows students to move their own learning forward. Feedback helps students and teachers take action by helping to answer the question of Where do I go next? Once the learning goals and success criteria have been identified, feedback is like the voice on a GPS (global-positioning system) or mapping program reminding one of when to proceed, turn around, stop or recalculate. When students are making intended or better-than-intended progress in moving towards their learning goals, they need to proceed or continue with the learning tactics they currently have in place. When feedback indicates that students are not making progress, it is often necessary for students to stop, turnaround or recalculate by trying new methodologies and strategies to reach their intended goals. Feedback is actionable when it can clarify for the student where their learning is in relation to the learning goal, help to communicate strengths or next steps and is followed by time for supported reflection (p.141).

Feedback should focus on what students are doing well and how they can improve. It is most actionable when students can apply it not only to their current learning, but also to develop an understanding of how to transfer it to new contexts as well. Providing clear, descriptive language (i.e., through think alouds, directing or explaining) can signal to students where they currently are in their learning and what they can do to make progress toward their learning goals. Students need time and structures during their learning to process feedback, ask clarifying questions and plan for next steps in their learning. Without structured opportunities to make sense of feedback and translate it to their learning, feedback will not support students in meeting their learning goals (WestEd, 2020a).

Characteristic #3: Specific to the Learner

Much like pedagogical strategies, there is no one-size-fits-all approach when it comes to feedback. Because students are in different places in their learning, they bring various strengths, needs and experiences. All learners bring their own unique learning and communication styles to the classroom. Effective feedback considers each of these needs and what will help students make the most progress along their learning journey (Almarode, et al., 2019). Feedback is more apt to improve students' performance when it is focused on what needs to be done to improve, and specifically when teachers give students details about *how* to

improve (Wiliam, 2018). Planning for and providing specific, constructive feedback can only be achieved when teachers know their students well and where they fall along a progression of learning. This highly effective feedback takes into account the learning needs of the individual student and considers (WestEd, 2020a):

- What prior knowledge, personal experience, language and cultural strengths does this student have that can serve as a bridge to my feedback?
- How can I offer feedback in ways that will keep this student motivated?
- What volume of feedback will this student be best able to process and apply?
- What specific feedback do I need to offer this student currently and how does it align with the learning goals and success criteria?
- How will I know if my feedback makes sense to the student?

Characteristic #4: Feedback Should Help Students Manage Their Own Learning

Dylan Wiliam (2018) states that "feedback functions formatively only if the learner uses the information fed back to him or her to improve performance." Feedback should draw students' attention to what's next rather than what was done correctly or incorrectly. Unfortunately, this rarely happens in classrooms, and students view feedback as punishment rather than a valuable tool of formative assessment. Because students often equate more written annotations on learning tasks from teachers as poorer performance, teachers need to be mindful of not only the quality of feedback they give, but the quantity of feedback as well. In general, feedback should be more work for the recipient than the donor (Wiliam, 2018).

Feedback is effective when it helps students build their own capacity as self-directed learners. This involves helping students understand what they did well so they can apply those understandings to new contexts in a way that does not do the work for students, but rather helps them clarify where they are in their own learning and develop an individual course of action for moving forward. When students share evidence of their learning that shows they are on track, they still need descriptive information to understand what they are doing well so that they can build on that success. Telling students things like, "good job" or "I love this paragraph" does not position them to understand what they did well and apply feedback to new contexts in the future (WestEd, 2020a).

Students' voices should be used to evaluate the effectiveness of and make improvements to feedback. Teachers need feedback from students as do students from their teachers. Questions like, "Are you clear on what you need to do next?" or "Can you tell me what you are going to do next?" can help teachers determine if the feedback given was effective, and if not, make adjustments to their feedback practices. This recurring structure, often referred to as a feedback loop, can inform the teacher's overall practice, helping develop a sense of the kind of feedback that is most effective for specific students and the class as a whole (p. 141).

Applying Feedback Through Student Goal Setting

Regarding student goal setting, Hattie and Donoghue (2016) note that "progress breeds progress," and "success breeds a desire for more success." When students are engaged in regular self-reflective conversations around the progress they are making toward accomplishing success criteria, they are more apt to develop self-efficacy as learners and be motivated to continue learning. Teachers should be mindful to intentionally embed structures within their classroom schedules for students to self-reflect, conference with peers and conference with the teacher. As teachers model and students practice using the success criteria to provide effective feedback, students learn how to initiate setting goals for themselves with greater independence. In turn, this creates an upward spiral for learners that is crucial for continuous improvement and success (Almarode, et al., 2019).

While feedback can be applied in several ways throughout the formative assessment process, when students understand the success criteria they have successfully met and which ones they need to address next, they are better able to prioritize and set personal learning goals for themselves. As learning deepens, students and teachers can revise the success criteria and goals over time (through co-construction), and students begin to feel empowered with the knowledge of what success looks like. Once this self-regulation unfolds, students are better equipped to manage and self-assess their own progress moving forward (p. 82).

Though not a frequently used term in education, ipsative assessments are assessments used to compare a student's present level of performance to their past performance. Teachers often use ipsative assessments to analyze initial and final assessment data to determine instructional impact. Other educators may use ipsative assessments to measure student growth over time. For students, ipsative assessments provide opportunities to gain insight into individual progress and challenges, helpful information for students to reflect upon for setting goals and acting for themselves. One example of an ipsative assessment is a goal-setting conference (Fisher, et al., 2021).

Goal-setting conferences provide structured opportunities for students to reflect on their intended goals, the tactical learning strategies employed throughout a lesson or group of lessons, the effort students put forth and the outcomes they receive from those decisions (Wiliam, 2018; Fisher, et al., 2021). Goal-setting conferences typically occur between a student and their teacher although students may participate in conferences with their peers as they become more empowered to give and receive effective feedback. Because clear goal intentions have the potential to accelerate student learning (as they have an effect size of 0.51), students need to have ownership over their own goals so that the goals motivate them to improve (Fisher, et al., 2021; Hattie, 2009). For the goals to motivate students, they should (Nordengren, 2019):

- Build competence;
- Provide students with choice and autonomy;
- Align with students' interests; and
- Change how students perceive themselves.

Teachers should steer students away from goals that are performance-based (i.e., "I want to get all 4s on my opinion writing rubric.") and toward more mastery-driven goals (i.e., "I want my introductory paragraph to be clear to the reader and entice them to read more."). When developing goals collaboratively, teachers should direct students to create goals that are measurable and attainable. These goals should focus on what students will do as a result of the feedback received and should be attainable enough for students to experience success more regularly since "success breeds (more) success." Through ongoing goal-setting conferences teachers can scaffold students to design short-term goals, which accumulate to help students master their long-term goals (Fisher, et al., 2021). As students meet their goals and move toward mastery of the standards, they should be positioned to navigate and see the full learning pathway before them. Students should be able to reflect on their accomplishments, and teachers should use goal-setting conferences as a platform to celebrate student success in learning because, when they do, teachers draw attention to what is valuable and set benchmarks for other students to replicate (Erkens, et al., 2017).

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Appendix D

The Kentucky Department of Education's [Balanced Assessment Modules](#)

Module 1: Comprehensive, Balanced Systems of Assessment

Through this module, participants will learn about the essential components of a comprehensive, balanced assessment system and how different assessments can work together to support student learning. The module will take a closer look at different assessment types and purposes, how a knowledge of the standards leads to meaningful assessment and build an understanding of the assessment cycle.

Module 2: Understanding Formative Assessment

Through this module, participants will build a common understanding of the assessment cycle in the formative assessment process. The module will both define formative assessment and take a closer look at the essential conditions necessary for formative assessment.

Module 3: Clarifying and Sharing Learning Goals and Success Criteria

Through this module, participants will learn about how the standards and associated learning expectations inform high quality assessment. The module will focus on how to elicit meaningful evidence of student learning through clarification of learning progressions, learning goals and success criteria.

Module 4: Eliciting Evidence of Student Learning

In section 1 of this module, participants will learn about designing and eliciting evidence of student learning aligned to the standards. The module will take a closer look at strategies for eliciting evidence aligned to the depth of the standard and criteria for high-quality classroom assessments. In section 2, participants will learn about valid assessment practices. The module will also consider how to ensure assessment practices are culturally relevant and free from unintended barriers.

Module 5: Interpreting Evidence of Student Learning

Each content-specific module is designed to address the unique needs of interpreting evidence of student learning in Mathematics, Reading and Writing, Science or Social Studies. Participants will learn about strategies for interpreting student evidence, engaging students in the interpretation and analysis of their own evidence, using student learning evidence to guide the formative assessment process, and identifying patterns in student responses that can inform teacher and student learning.

Module 6: Acting on Evidence of Student Learning

Each content-specific module is designed to address the unique needs of acting on evidence of student learning in Mathematics, Reading and Writing, Science or Social Studies. Participants will learn about strategies to adjust instruction in the moment as well as to improve teacher practice over time. The module will also focus on the characteristics of meaningful feedback and how students and teachers might use the evidence of student learning to adjust learning tactics and instruction.

The Kentucky Department of Education's [Assessment Leadership Modules](#)

Module 1: Leading a Comprehensive, Balanced Assessment System

This module supports school and district leaders in understanding the characteristics and value of a comprehensive, balanced assessment system, as well as the role that leaders play in developing and sustaining a comprehensive, balanced assessment system.

Module 2: Leading for High-Quality Formative Assessment

This module supports school and district level leaders in understanding the formative assessment process and the culture necessary for high-quality formative assessment to improve student outcomes. The module also takes a closer look at how leaders can empower teachers and foster student ownership of learning within the formative assessment process.

Module 3: Using Assessment Leadership Tools

This module orients school and district level leaders to a suite of tools to support comprehensive, balanced assessment systems and high-quality formative assessment practice. This module also helps leaders determine the purpose of each tool in the context of their own system, which tools are most relevant, and when and how to use them.

Assessment Leadership Toolkit

This toolkit, in combination with the three modules, is intended to help guide leaders as they work to develop and implement a comprehensive, balanced system of assessment and formative assessment at the local level. This toolkit is organized into two sections:

- **Section 1** is designed to support leaders as they engage with the process of building a comprehensive, balanced system of assessment. It is closely connected to Leadership Module 1.
- **Section 2** is designed to support leaders as they work to implement and support the formative assessment process at their school or in their district. It is closely connected to Leadership Module 2.