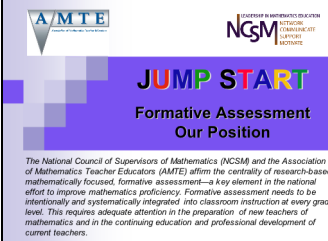
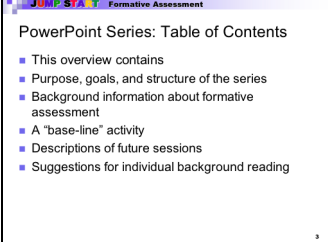
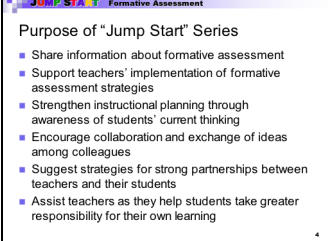
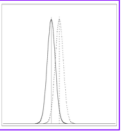

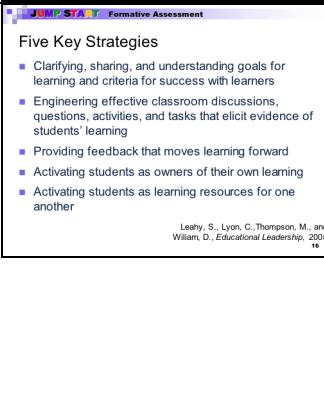
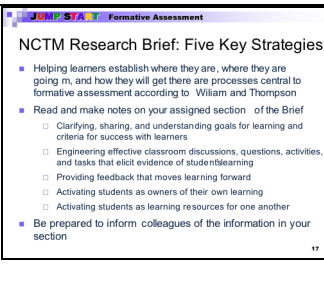
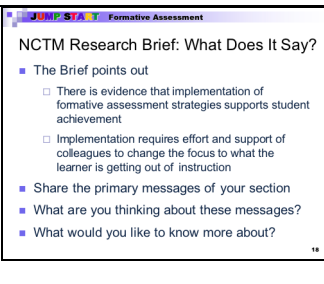
	<p>1. This is the first PowerPoint in the “Jump Start” series. While other titles in the series may be used in any order, this should be the first session. As the leader, you need to review the entire PowerPoint and all of the notes in preparation for your session. The slides are designed for you to use with participants; notes accompanying each slide give suggestions for you as the leader. In preparation for this session, print copies of the NCTM Research Brief “Five Key Strategies for Effective Formative Assessment” written by Dylan Wiliam (http://www.nctm.org/uploadedFiles/Research_News_and_Advocacy/Research/Clips_and_Briefs/Research_brief_04_-_Five_Key%20Strategies.pdf). For other suggestions see the notes accompanying the final slide.</p>
	<p>2. These materials are part of the work of a joint AMTE/NCSM task force dedicated to helping teachers grow their understanding and use of formative assessment strategies. The statement on the slide is the opening of a position paper that is available for your information. We encourage you to read the entire document prior to leading JUMP START professional development.</p>
	<p>3. This Table of Contents will help you to set the stage for your audience – be it 5 colleagues or 20+ colleagues. It identifies what the “JUMP START for Formative Assessment” series is all about and what it includes. The JUMP START kit includes PowerPoints that address single topics that may be viewed in any order. You can involve your audience/colleagues in identifying the order for discussing the topics or you might plan the series yourself.</p>
	<p>4. At this point in the overview, you may choose to just read (or have different participants read) the bullets on this slide. We have added notes to give you some ideas in case you wish to elaborate.</p> <ul style="list-style-type: none"> *Share information- In this session participants will write their own definitions of formative assessment and post the sentence strips that they make. *Support teachers-Again, later in the session participants will list their personal goals for the professional development. Be sure to ask them to identify the support they would find helpful as they begin to implement formative assessment. *Strengthen planning- Instructional planning is strengthened when teachers become more aware of students' current thinking; they are able to adjust the time allotted for activities, modify plans, and address misconceptions. *Encourage collaboration-Collaboration may not be new to the participants; consider asking them how collaboration will assist in implementing new formative assessment ideas.

	<p>*Suggest strategies-You may want your participants to brainstorm (and record) how these partnerships can be developed and promoted.</p> <p>*Assist teachers-Ask participants to identify roles for you (as the leader) and for grade-level/department colleagues as they implement formative assessment strategies.</p>
<p>JUMP START Formative Assessment</p> <p>Overarching Goals for "Jump Start"</p> <ul style="list-style-type: none"> ■ To provide teachers with understanding that formative assessment is a <i>process</i> of gathering evidence about what students know and understand, their misconceptions, and their incomplete knowledge ■ To support teachers in using strategies that inform teaching and learning and shape their instructional decisions "in the moment" and in short and long-term planning ■ To suggest strategies for encouraging greater involvement of students 	<p>5. If your district or school has goals related to formative assessment, you will want to tie them into the purposes and goals of the "Jump Start" series. In each separate PowerPoint, these goals are repeated and specific strategies that relate to one or more of the goals are explored in depth. These goals, along with the five key strategies for formative assessment identified by Leahy, Lyon, Thompson and Wiliam and discussed in the NCTM Research Brief (see slide #16), promote a vision of classrooms in which teaching and learning come together for student success. Remind participants that these goals are interrelated and that the results of formative assessments influence planning and decisions throughout instruction.</p>
<p>JUMP START Formative Assessment</p> <p>Audience for "Jump Start" Series</p> <ul style="list-style-type: none"> ■ Math coaches, math specialists, faculty who teach mathematics education courses, teacher leaders might use the series with professional learning communities and informal gatherings of colleagues ■ Ultimately, classroom teachers and students will implement and benefit from the strategies <ul style="list-style-type: none"> □ Teachers will know more about their students thinking and reasoning and students' misunderstandings □ Teachers will use this knowledge to modify instruction to better meet students' needs □ Students will be supported in taking greater responsibility for their own learning 	<p>6. There are many possible groups who will be interested and benefit from formative assessment sessions. Ultimately it is teachers and their students who will implement and benefit from formative assessment strategies, but in today's climate of teacher evaluation, teacher evaluators (such as principals) as well as pre-service teachers should be aware of the ideas presented in JUMP START. Having students' take greater responsibility for their own learning will promote greater efficacy and instill the habit of life-long learning without the necessary constant reliance on teacher approval. This does not abdicate the teachers' responsibility for monitoring students' progress, but rather encourages students to think about what they know and what they still need to learn.</p>
<p>JUMP START Formative Assessment</p> <p>Structure of "Jump Start" Series</p> <ul style="list-style-type: none"> ■ PowerPoint presentations with discussion notes, activities, and suggestions for follow-up ■ Single-topic focus for each session <ul style="list-style-type: none"> □ Grade-level groups, department meetings, faculty discussions, PLCs □ Web search ideas for further information ■ Technology requirements: computer and projection device; internet connection ■ Leader notes for each session and discussion ideas for each slide; participant alerts (e.g., alternative ways to implement strategies, cautions) 	<p>7. The JUMP START series is designed for 60-90 minute sessions. The sessions are NOT in-depth examination of formative assessment topics; rather, the purpose is to provide information and examples that will encourage teachers to try the strategies discussed. Each individual session (on a single topic) will engage participants in various topics and research about formative assessment. Each session will include notes for the leader/presenter about discussions, activities, and follow-up. Some sessions will include web searches, so you will need internet access in your workshop setting. In addition, there will be notes and at times, alternative activities. District and school leaders can provide further support through additional the professional development, readings and resource materials, and planning/discussion times for teachers.</p>

<p>JUMP START Formative Assessment</p> <p>Defining Formative Assessment</p> <ul style="list-style-type: none"> Using all of your background knowledge, what are the two words you would use to define formative assessment? 	<p>8. Activity: The purpose of this slide and the next is to engage participants in personal reflection and to give you some information about individuals' understanding and goals related to formative assessment. Tell participants to write down their two words.</p> <p>How you debrief the activity will depend on the group size and your familiarity with the audience. As you walk around the room and listen to participants talking, think about how you will invite them to share. For example. They could write their words on separate large index cards to post during the discussion. Asking them to explain their rationale for the words they chose will generate a rich discussion. You might debrief the activity by having participants share by tables if the group is very large or with the entire group if this is comfortable. The sharing discussion will give you information for future planning. You might invite participants to write a definition in their journals/notes based on the discussion.</p> <p>Other discussion questions: When does formative assessment take place? Who benefits from formative assessment?</p>
<p>JUMP START Formative Assessment</p> <p>Personal Goals for "Jump Start"</p> <ul style="list-style-type: none"> On a scale of 1 to 5, what is your level of knowledge about formative assessment? On a scale of 1 to 5, what is your level of on-going use of formative assessment? What are you most proud about in your classroom related to formative assessment? What are you most interested in improving or changing? What questions do you have? 	<p>9. One strategy for debriefing the first two points is to prepare sentence strips labeled 1 to 5 and have participants put a sticky dot where they rate themselves. You may or may not have participants share their personal goals (though it will be helpful for you to have this information). You can also use a "parking lot" approach for participants to post what they are most interested in anonymously. It will be important to get everyone's questions "on the table."</p>
<p>JUMP START Formative Assessment</p> <p>Formative Assessment Makes a Difference!</p> <p><i>The power of formative assessment for learning, when well done, is firmly established in the research.</i> Black and William, 1998</p> <p><i>I know of no other school improvement innovation that can claim effects of this nature or size.</i> Stiggins, 2002, p.8</p> <p><i>This is formative assessment's "advocatable moment."</i> Popham, 2013</p>	<p>10. The amount of time you spend on background slides such as this one depends on the experience of the participants and their knowledge about formative assessment. As you preview this PowerPoint, decide how you will use the slides and if you want/need to add any additional information in your notes.</p>
<p>JUMP START Formative Assessment</p> <p>Formative Assessment Makes a Difference!</p> <p>Black and William (1998) report, based on their extensive review of research, typical effect sizes of formative assessment experiments are between 0.4 and 0.7</p>  <p>Effect Size = The number of standard deviations between the means of the experimental and control groups</p> <p>A positive effect size indicates that the experimental group performed better than (that is, outscored) the control group</p> <p>(Dynamic Classroom Assessment 2004)</p>	<p>11. background reading, you may wish to read "Inside the Black Box" by Black and William (<i>Phi Delta Kappan</i>, October, 1998).</p>

<p>JUMP START Formative Assessment</p> <p>Formative Assessment Makes a Difference!</p> <ul style="list-style-type: none"> ■ According to Black and Wiliam (1998), these gains are <ul style="list-style-type: none"> □ Larger than most instructional innovation strategies, □ Particularly helpful to pupils who have previously struggled, □ Consistent across countries (i.e., US, Canada, England, Israel, and Portugal), across age brackets, and content areas, and □ Sustained over extended periods of time (William, 2005) ■ <i>It's really not surprising that formative assessment works so well. What is surprising is how few U.S. teachers use the process.</i> (Popham, 2013) <p style="text-align: right;">12</p>	<p>12. Have participants turn and talk: In what ways does any of this information or any quote (on the previous two slides and this slide) resonate with your and your colleagues? The quote by Popham in 2013 is significant. It is NCSM’s main reason for putting together this JUMP START series.</p>
<p>JUMP START Formative Assessment</p> <p>Defining Formative Assessment</p> <p>Formative assessment...</p> <ul style="list-style-type: none"> ■ Is a deliberate process by which teachers and students gather information about what students know and can do ■ Is information used by teachers to make more effective instructional decisions based on understanding how students think about key ideas and by students to improve their achievement of learning goals ■ Occurs during instruction or as teachers examine student work; it supports actionable feedback <p style="text-align: right;">13</p>	<p>13. There are many definitions for formative assessment (also called classroom assessment in some resources); however, they all focus on classroom interactions between the teacher and the students. As you go through these points, you may want to paraphrase so that participants will be comfortable with each component of formative assessment.</p> <p><i>First point:</i> Formative assessment does not just happen. It must be planned for in order to become a part of every lesson.</p> <p><i>Second point:</i> Information about the understandings, misconceptions, and questions that a student or students or even whole class have help teachers determine strengths (and who has them) and weaknesses (and who has them) related to learning targets. Assessment informs instructional decisions both in the moment and for the future. Increasingly, educators are highlighting the importance engaging students in self-monitoring. Formative assessment does not just happen; it must be planned for in order to become a part of every lesson. According to Wiliam, 2011, to be considered formative assessment, the evidence must be “elicited, interpreted, and used by teachers and learners.”</p> <p><i>Third point:</i> Assessment information related to what students know and can do is available during a lesson and also as teachers examine the work students have completed. Assessment is the crux of actionable feedback to students upon which they can act. Formative assessment is often referred to as assessment <i>for</i> learning, because the emphasis is on what students are getting from their experiences as opposed to assessment <i>of</i> learning that evaluates students’ progress and achievement (Stiggins, 2005).</p>
<p>JUMP START Formative Assessment</p> <p>Defining Formative Assessment</p> <p>Formative assessment has three key elements:</p> <ul style="list-style-type: none"> ■ Elicit evidence about learning to close the gap between current and desired performance ■ Adjust the learning experiences to close the performance gap through useful feedback ■ Involve students in the assessment learning process <p style="text-align: right; font-size: small;">Adapted from Margaret Heritage, 2008</p> <p style="text-align: right;">14</p>	<p>14. These points and others made in this overview session will be revisited in the other professional development sessions. What may be critical to point out here is that formative assessment is not another add-on program. Rather, formative assessment involves many strategies and ways that teachers and students interact - all intended to help teachers better plan instruction and students learn in greater depth.</p> <p>The reason for collecting specific information about students’ performance is to have evidence about where they are in the process of “not knowing” to “becoming proficient” with content. As teachers, we always strive to close the gap between what students are doing/know currently and where we want them to be (the desired performance). Providing students with clear descriptions of expectations and giving them feedback that indicates paths for improvement helps students become more self-reliant in developing/strengthening their own learning.</p>

 <p>Description of JUMP START Sessions</p>	<p>15. Unless you have predetermined the order of the PD sessions, tell participants to think about their interests and be prepared to identify the order in which they would like to investigate the ideas. The next three slides provide a discussion of five overarching strategies for formative assessment. These are followed by brief descriptions of the individual PowerPoint files for each component highlighted. Plans are for the JUMP START series to be a growing resource to which new sessions will be added periodically.</p>
 <p>JUMP START Formative Assessment</p> <p>Five Key Strategies</p> <ul style="list-style-type: none"> ■ Clarifying, sharing, and understanding goals for learning and criteria for success with learners ■ Engineering effective classroom discussions, questions, activities, and tasks that elicit evidence of students' learning ■ Providing feedback that moves learning forward ■ Activating students as owners of their own learning ■ Activating students as learning resources for one another <p><small>Leahy, S., Lyon, C., Thompson, M., and William, D., Educational Leadership, 2008</small></p>	<p>16. Educational leaders have identified and defined five strategies that support the use of formative assessment in classrooms. These key strategies are discussed by Dylan Wiliam in a short research brief available on the web from NCTM (http://www.nctm.org/uploadedFiles/Research_News_and_Advocacy/Research/Clips_and_Briefs/Research_brief_04_-_Five_Key%20Strategies.pdf) The next two slides are an activity using this Research Brief. We have made the assumption that many teachers will not have read and internalized the information in the Brief. If your participants are familiar with the Brief, this will be a good time to invite them to share (at tables or with the group) how the ideas in the Brief have influenced their instructional planning and classroom interactions. Point out that each of the JUMP START sessions provides support for implementing one or more of these strategies.</p>
 <p>JUMP START Formative Assessment</p> <p>NCTM Research Brief: Five Key Strategies</p> <ul style="list-style-type: none"> ■ Helping learners establish where they are, where they are going to, and how they will get there are processes central to formative assessment according to Wiliam and Thompson ■ Read and make notes on your assigned section of the Brief <ul style="list-style-type: none"> □ Clarifying, sharing, and understanding goals for learning and criteria for success with learners □ Engineering effective classroom discussions, questions, activities, and tasks that elicit evidence of students' learning □ Providing feedback that moves learning forward □ Activating students as owners of their own learning □ Activating students as learning resources for one another ■ Be prepared to inform colleagues of the information in your section 	<p>17. Dylan Wiliam authored the NCTM Research Brief that discusses the five key strategies and illustrates the ideas. JUMP START sessions are meant to provide beginning ‘how to’s’ that will assist teachers in implementing these strategies in their classrooms.</p> <p>Have participants count off by 5’s. Allow about five-seven minutes for participants to read the short sections. Have them organize themselves so that there is someone who read each section in each group. There are discussion prompts on the next slide.</p>
 <p>JUMP START Formative Assessment</p> <p>NCTM Research Brief: What Does It Say?</p> <ul style="list-style-type: none"> ■ The Brief points out <ul style="list-style-type: none"> □ There is evidence that implementation of formative assessment strategies supports student achievement □ Implementation requires effort and support of colleagues to change the focus to what the learner is getting out of instruction ■ Share the primary messages of your section ■ What are you thinking about these messages? ■ What would you like to know more about? 	<p>18. This article makes important points in a very reader-friendly manner. Do not rush the discussion of the bullets on the slide. If possible, encourage participants to keep the Research Brief and read the entire article when they go home. JUMP START identifies strategies and small routines for classrooms. However, these are only starting points. The changes that help teachers plan and modify their instruction based on what students know, what makes sense to students, and what helps students make connections in order to use mathematics fluently and effectively develop overtime as teachers continue to study, reflect, and support each other.</p>

<p>JUMP START Formative Assessment</p> <p>Identifying and Planning Clear Learning Targets</p> <p><i>Teaching begins with clear learning targets</i></p> <ul style="list-style-type: none"> What do we expect students to learn? How are they going to learn it? How will <u>we</u> know when they have learned it? How will <u>they</u> know when they have learned it? How will we respond when they don't? How will we respond when they do? <p><i>Learning takes place as students makes sense of the mathematics in their lessons</i></p> <p>19</p>	<p>19. This slide identifies content in the session on learning targets. The session emphasizes the importance of knowing clearly what is to be taught, knowing how each lesson fits into unit goals and learning progressions, and recognizing different types of learning targets. Discussions will focus on each of the questions on the slide.</p>
<p>JUMP START Formative Assessment</p> <p>Activating Students' Prior Knowledge</p> <ul style="list-style-type: none"> The focus is "in the moment" assessment Students recall what they know about a topic Teachers have immediate feedback on "where the group is" Begins the lesson with students thinking about the topic and what they already know Is usually short (4-6 minutes) Can be introductory in nature or a quick review <p>20</p>	<p>20. Activating students' prior knowledge is a strategy that provides information for teachers "in the moment." It is not meant to be an in-depth analysis; rather, it gives teachers a global "feel" for the class, reminds everyone of prior discussions, and encourages students to think about their own thinking. The power of the strategy becomes evident when teachers are able to make adjustments to their plans to incorporate what they learn from the task.</p>
<p>JUMP START Formative Assessment</p> <p>Feedback to Students</p> <ul style="list-style-type: none"> Timely, actionable feedback helps students know what is correct and what they need to rethink Either oral or written, quality feedback moves student learning forward In this session there are opportunities to identify feedback that is not very helpful and turn it into comments that support student learning <p>21</p>	<p>21. As teachers we are quick to praise our students, but does saying "good job" tell the student what is correct? Or does saying "needs work" tell the student what parts of the assignment are okay and what parts need to be reworked? This session focuses on giving students useful information to help them improve without taking over the student's thinking.</p>
<p>JUMP START Formative Assessment</p> <p>When the Answer Is Wrong...</p> <p>This session has two main goals:</p> <ul style="list-style-type: none"> To consider strategies that support what is correct in students' thinking yet address misconceptions, incomplete understanding, and wrong answers To identify one or more strategies that fit with each participant's instructional practices and to plan ways to implement the strategy <p>22</p>	<p>22. This session focuses on ways to respond to students during discussions when a student answers incorrectly. The decision of whether to call on another student for the correct answer or to probe the first student's thinking is a critical professional task.</p>
<p>JUMP START Formative Assessment</p> <p>Plans Call For Additional Topics</p> <ul style="list-style-type: none"> Inferences About Students' Thinking Student Self-Assessment Asking Productive Questions Intentional Listening Using Student Data To Make Instructional Decisions Prior Knowledge - Not To Be Ignored! Students Becoming Resources <p>23</p>	<p>23. These are topics that the JUMP START authors have been discussing. However, they may not become titles for sessions. If NCSM and AMTE members find the JUMP START sessions helpful, others will be developed.</p>

JUMP START Formative Assessment

References

- Black, P., Harrison, C., Lee, C., Marshall, B., & William, D. (2004). Working inside the black box: Assessment for learning in the classroom. *Phi Delta Kappan*, 86(1), 8-21.
- Heritage, Margaret (2008). Learning Progressions: Supporting Instruction and Formative Assessment
<http://www.illustrativemathematics.org/Classroom-Assessment/Integration/Classroom-Assessment/Progressions.pdf>
- Leahy, S., Lyon, C., Thompson, M., and William, D. (2008). Classroom Assessment: Minute by Minute, Day by Day. *Educational Leadership*, 63(3), 19-24.
- National Council of Teachers of Mathematics (2007). Five "Key Strategies" for Effective Formative Assessment.
- Popham, J. (2013) Formative assessments: advocatable moment. *Education Week*, 32(15), 29.

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24. There are numerous resources available that provide information about formative assessment. The purpose of the reference slides in each PowerPoint is not to recommend resources but to identify sources of quotes or specific information used in the session.



JUMP START Formative Assessment
 JUMP START Authors

Ana Floyd Randolph County Schools, NC	Mari Muti Wesleyan University, CT
Jeanne Joyner Meredith, College, NC	Wendy Rich Asheboro City Schools, NC
Katherine Mawhinney Appalachian State University, NC	Catherine Schwartz East Carolina University, NC

25. Many colleagues made suggestions for the content of these JUMP START sessions and the editing of the PowerPoint files. We encourage you to add your own ideas to the Leaders' Notes as you prepare for the sessions. Making explicit links to the work already underway in your school or district will support teachers in trying formative assessment strategies in their classrooms.