Questioning

Assessment for Learning Video Series

VIEWING GUIDE

A resource to support the implementation of ***GROWING SUCCESS***
Assessment, Evaluation and Reporting in Ontario Schools
First Edition, Covering Grades 1 – 12, 2010

reach every student

Ontario

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Introduction

This video shows teachers learning about effective questioning, an *assessment **for** learning* practice.

The video:
- provides information about effective oral questioning practices
- models oral questioning in an *assessment **for** learning* context
- facilitates reflection and discussion about effective questioning
- provides resources that support teachers' professional growth in the area of classroom assessment

This viewers' guide provides information, activities, and supports for trying new practices. While you can use this resource to learn independently, by learning collaboratively with teaching colleagues, you can provide each other support and feedback through the learning process.

Planning Your Professional Learning

a. Self-Assessment and Goal Setting

Before viewing the video, use the self-reflection tool, Appendix A: *My Questioning Practices* to identify what you are already doing well, and an area of questioning practice that you would like to implement or improve. You might revisit this tool at regular intervals to monitor your professional learning over time.

b. Viewing the Video

Each segment of the video focuses on specific aspects of questioning in the context of *assessment **for** learning*. Each segment is organized as:
Before Viewing: Sets the context to focus your viewing activity.
After Viewing: Presents additional information about the segment's content. Time signatures relate the information to specific points in the segment.
Extending Learning: Includes a selection of post-viewing activities to extend learning about the segment's content.

A suggested **organizer** for recording your thoughts and observations:

What I Already Knew…	
What I Hadn't Thought of…	
Next Steps:	

c. Action and Feedback

The activities provided in "Extending Learning" are intended to help you implement the strategies in your teaching. Consider inviting a colleague to provide feedback as your "critical friend." (Costa & Kallick, 1993) Critical friends observe and ask questions to explore the reasons for your instructional decisions. They provide support as they challenge you to help you grow professionally.

d. Reflection and Goal Setting

Once you have reached a level of comfort in using the new practice, revisit the self-reflection tool to plan next steps. See Appendix A: *My Questioning Practices*.

Setting the Stage

The questioning-related quotes provided in Appendix B: *Questioning Quotes* can be used before viewing to activate prior knowledge and engage the viewer(s) in reflection and/or discussion; and to make connections to their own questioning practices.

In a community setting, use a **Mix and Mingle** strategy. Prepare index cards for each quotation on different coloured paper. Participants move around sharing their cards, listening and making connections to their own practice and to the ideas on other cards. As a whole group, participants share their reflections and questions.

Segment 1 **Effective Questioning**

Before Viewing

Questioning is fundamental to effective teaching and learning. It is a critical skill that teachers must learn to do well and that students need to be taught. Through questioning, teachers gather evidence about their students' current level of knowledge and skills, as well as their interests. Teachers can use strategically planned questions to guide students' thinking on a topic, identify challenges and misconceptions, and focus their efforts to achieve learning goals.

> **The art of questioning is central to the practice of teaching.**
> Fisher & Frey (2007)
>
> **Fewer questions, better questions and time to think.**
> Morgan & Saxton (1994)

Questioning is an area of classroom practice identified by (Black, Harrison, Lee & Wiliam, 2003) as an important aspect of *assessment **for** learning*. A substantial body of research identifies *assessment **for** learning* as a powerful tool for improving students' learning: (Black & Wiliam, 1998). *Assessment **for** learning* is "the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there". (Assessment Reform Group, 2002)

*Assessment **for** learning* differs from *assessment **of** learning* in that the information gathered is used for the specific purpose of helping students improve *while they are still gaining knowledge and practising skills*. Teachers who view assessment as integral to learning engage students as collaborative partners in the learning process. This assessment provides precise and timely information so teachers can adjust instruction in response to individual student needs, and so students can adjust their learning strategies or set different goals.

When teachers use assessment to promote student learning, they:

- ensure a shared understanding of **learning goals and success criteria**
- use effective **questioning** strategies
- provide descriptive **feedback**
- model and provide opportunities for peer- and **self-assessment** skills

While viewing, look for common questioning practices.

This segment shows staged examples of some common questioning practices. You will be prompted to pause the video for reflection and discussion about the effectiveness of these practices. As you view each example, look for ways the teacher uses questioning, and consider whether the questioning practices can be improved. Additional information is provided in the **After Viewing** section.

After Viewing

Common Questioning Practices (3:06 – 5:50)

Consider the examples to stimulate your thinking and discussion about questioning.

Example 1 (3:18 – 3:41)

- The teacher's questions are all "closed" – questions for which there are a limited number of factual, "right" answers. (See Segment 2 for a discussion of question classifications.) Closed questions can be effectively used for reviewing, checking for understanding, and activating prior knowledge. They are often considered to be "lower-cognitive" questions. (Blosser, 1991)
- There is very little wait time provided for students to formulate or consider their responses.
- Questions are answered by a limited number of students.

Example 2 (4:03 – 4:15)

- Teacher asks, "Why do you think height is important in calculations for volume?" This question is more open-ended and invites students to think about volume, and how its calculation is different from the calculation of area.
- Uncomfortable with a lack of student responses, the teacher immediately rephrases the question and poses it again. Research confirms that waiting three seconds or longer after posing a question results in many benefits, including longer and more detailed responses from students. (Rowe, 1986)

Example 3 (4:36 – 4:48)

- The two students in the foreground are off task. The teacher uses a question to indicate that their behaviour is inappropriate and to refocus their attention. To engage students fully in higher-order thinking, they need to feel that they are in a safe emotional environment. Using questions to discipline or manage behaviour is counter-productive to creating that kind of a learning environment. Paula Denton, in *The Power of Words* (2008), suggests a more direct approach: "It's more helpful in such situations to issue a positive challenge that names the behaviour we want."

Example 4 (5:09 – 5:32)

- The teacher uses a rapidly paced string of closed questions to check students' understanding of a shared text. Slowing down the pace of questioning allows more students to engage in thinking about the topic.
- A student is called upon to answer a question, but has no response. The teacher states, "Let's go on to the next person," rather than providing time or support for the student to develop a response.
- Only certain students volunteer to respond. By using alternative approaches, such as **Think-Pair-Share** or **No Hands**, more students can be engaged in thinking about the topic.

The Questions Teachers Ask (5:53 – 6:50)

A substantial portion of teachers' time is spent asking questions. Research conducted in 1912 indicates that teachers spent approximately 80 percent of the school day asking questions. This statistic was replicated in the 1980s. (McComas & Abraham, retrieved September, 2008)

About 60% of teachers' questions are factual or recall questions, and about 20% are related to management of the classroom. Only about 20% of questions require students to engage in higher cognitive processes such as generating, integrating, synthesizing, and evaluating. (Cotton, 1988; Gall, 1984)

Extending Learning

Activity 1 *Reflection and Discussion*
Use one or more of the following questions to reflect on the topic of questioning:
- How can questions be used in an engaging way to access prior knowledge?
- Should questions start from simple to more challenging or should teachers begin with challenging questions first and then determine where to go next?
- What might teachers consider as they are planning questions?

Each of these questions is considered in subsequent segments.

In a community setting, use an **Inside/Outside Circles** strategy: Participants standing in pairs in two concentric circles engage in a focussed discussion. Then, they rotate to new partners to further the discussion process on the same question or on an extension question.

Activity 2 *Examining My Questioning Practices*
If you haven't already done so, use the self-reflection tool, Appendix A: *My Questioning Practices,* to identify what you are already doing well, and an area of questioning practice that you would like to implement or improve. Revisit this tool at regular intervals to monitor your professional learning over time.

Segment 2 **Planning Questions**

Before Viewing

Effective questioning requires that questions be planned with a clear purpose. These purposes include:
- accessing prior knowledge and understanding
- gathering information about what students know and are thinking with respect to identified learning goals
- engaging students in thinking about their thinking and learning
- expanding students' thinking from the concrete to the abstract.

This segment introduces a process for planning questions, linked to a familiar planning model, Backward Design (Wiggins & McTighe, 2005) (also known as "design down" and "planning with the end in mind"). When using this approach, teachers begin by identifying what they want students to learn by listing key learnings, expectations, and learning goals. This is an appropriate time to plan questions linked to the content. By designing a progression of questions that range from lower cognitive to higher cognitive, teachers scaffold student learning and address the wide variety of student learning needs.

> **Increasing the use of higher-cognitive questions can produce learning gains.**
> Cotton (1988)

While viewing look for a three-step process for planning questions.
- Step 1 Identify the learning goals. (1:25)
- Step 2 Develop a variety of question types related to the learning goals. (2:48)
- Step 3 Anticipate student responses. (6:51)

This segment emphasizes the importance of planning a question related to the identified learning. Teachers identify what students are to learn in a variety of ways, from statements of the "big ideas" (broad understandings) to specific, incremental learning goals.

After Viewing

Consider the following practices shown in this segment:

Key Questions Linked to Big Ideas (1:17 - 1:19) (2:03 – 2:49)

"Big ideas" (*key learnings, enduring understandings*) identify the broad concepts to be learned in a unit of instruction. A **key question** related to the big idea provides students with a focus for learning as they investigate a topic. Posed before the learning experience, it establishes "a 'mental set' with which the student processes the learning experience" (Marzano, 2001). In the Grade 8 mathematics class shown (1:17 – 1:19), the teacher has identified the big idea as: "There is a relationship between the area of the base, the height, and the volume of a cylinder."

> **Successful responding to lower level questions is a prerequisite for high level learning…it is impossible to summarize or evaluate information that a person does not know or understand.**
>
> Bellon, Bellon, Blank (1992)
>
> **It appears that teachers emphasize fact questions, whereas research indicates that an emphasis on higher cognitive questions would be more effective.**
>
> Gall (1984)

In this case, the key question might be:

- What is the relationship among the area of the base, the height, and the volume of a cylinder?
- What is the relationship between the area of the base and the height of a cylinder, when determining the volume?

The big idea for the Grade 2 science and technology lesson is: "Our actions affect the quality of the air and water." (2:03 – 2:49) What might be a key question related to this big idea?

Identifying Learning Goals (1:23 – 2:44)

Learning goals are brief statements that describe for students what they should know and be able to do by the end of a period of instruction, (e.g., a lesson, a series of lessons, a sub-task). They represent a subset or cluster of knowledge and skills that students must master to successfully achieve the overall expectations.

The specific expectations set out in the Ontario curriculum describe in detail what students are expected to know and be able to do by the end of the grade/course. While some can be used as learning goals, specific expectations often need to be further "unpacked," (i.e., expressed in grade-appropriate, student-friendly language and/or broken down into smaller increments), particularly when differentiating to address diverse learning needs and levels of student readiness.

Developing a Range of Question Types: A Progression of Questions (2:45 – 6:51)

One way to ensure an appropriate variety of question types is to build a progression of questions using a taxonomy or framework to determine the level of thinking addressed by the question.

The literature on questioning references a variety of frameworks or taxonomies to help categorize questions by the type of thinking skills in which they engage students. A very simple organizer refers to questions as "closed" or "open." **Closed questions** have a "limited number of acceptable responses" (Blosser, 1994), and can be used to check understanding and recall of facts. **Open questions** "anticipate a wide range of acceptable responses" (Blosser, 1994), and often require students to demonstrate higher-order thinking skills such as analysis, synthesis, and evaluation. They have no single correct answer, but rather, encourage students to explore their thinking on a topic or issue. For more information about thinking skills frameworks, see *The Skillful Teacher* (Saphier, Haley-Speca, Gower, 2008).

When planning questions related to a learning goal, begin with lower cognitive questions, (e.g., questions that check understanding or recall of facts) and progress to more cognitively complex questions (e.g., questions that require students to analyze, infer, predict, generate).

Sample Question Starters

Lower Cognitive*	Higher Cognitive
Who is …? Where is…? When did …? What information from the text shows…? What examples can you find of…?	Why do you think…? What evidence can you find to…? What do you predict…? How can you improve…..? What might be a better way of…? What might happen if…? What do you think about…..? What is your opinion on…? Why was it better that…..? How can you ensure that…?
*The nature of thinking required by any question is related to the context in which it is posed. For example, the question, "Why is the sentence imposed for this offender appropriate?" is higher cognitive if students are generating ideas from prior knowledge, supposition, or logical inference. However, if this question was posed in a previous lesson, and is now being used to review, the question is lower cognitive, as it is reviewing previously learned materials.	

Anticipating Student Responses (6:51 – 8:50)

Teachers should anticipate students' responses, particularly those that demonstrate misconceptions or challenges. The assessment data provided by the response to the question about ordering fractions may well be flawed, as the teacher did not anticipate that students might use the numerators to order their answers. (Example adapted from Darling-Hammond & Bransford, 2005)

In the lesson about water, the teacher anticipates that some students' responses will be limited to the use of water in its liquid state, and adjusts her questioning accordingly.

Ongoing Assessment (8:51 – 9:48)

Having planned their oral questions, the teachers end by determining how they will monitor students' progress toward achieving the learning goals. They use an **Exit Card** strategy. Exit cards are written student responses to questions posed at the end of a class or learning activity. Students put their names on cards and respond to a question(s) given by the teacher. They give the card to the teacher before they leave the classroom. Exit cards help teachers determine the readiness of their students for learning a new concept and/or serve as a check for understanding. For further information about exit cards, see Tomlinson & Strickland, 2005.

In the examples shown in this segment, both questions are open-ended: "Why is water important?" "What did you learn about water today?"

Extending Learning

Activity 1 *Key Questions Linked to Big Ideas*

- Consider a unit of study you are currently teaching. Identify the big ideas for the unit. Is there a **key question** that captures each of the big ideas for this unit? Does the key question address what the students will know and be able to do by the end?
- Share the question with students at the beginning of instruction. Explain that they will be looking for answers as they progress through the learning.
- Post the question in a visible place, and regularly refer to the question during the learning.
- Invite specific feedback from students on the effectiveness of this strategy in improving their learning.

Activity 2 *Questions Linked to Learning Goals*

Consider a unit of study you are currently teaching. Identify one of the unit's learning goals and list some of the questions that will guide students' thinking and learning. Are there misconceptions or challenges that you can anticipate?

Sample

Learning goal(s)	Questions
Students will build a simple electrical circuit. (Grade 6 Science & Technology)	What are the parts of a circuit? What do circuits do? Where would you find a circuit? How does a circuit work? What might cause a circuit to break?
Anticipated misconceptions or challenges	

Activity 3 *Identifying Lower and Higher Cognitive Questions*

Revisit the questions you developed in Activity 2. Determine the cognitive level of each question by identifying the nature of thinking required. For example, lower cognitive questions could involve recalling, recognizing, describing, or summarizing. Higher cognitive questions could involve applying, analyzing, evaluating, or generating. (Saphier et al, 2008; Krathwohl, 2002) Revise and/or add to your questions to ensure that there is a progression of questions that address a range of thinking skills.

Activity 4 *Developing a Progression of Questions*

Questions should be sequenced in increasing levels of difficulty. If we are to challenge students and help them develop their thinking, we need to ask questions of different degrees of cognitive complexity.

Work with a colleague to plan a questioning sequence that you can use in an upcoming lesson. Observe how effective the questioning progression is, and reflect on what you might do to improve it.

Activity 5 *Reflecting on My Questioning*

- Are the questions sequenced?
- Are the questions linked to the learning goal(s)?
- Do they anticipate student responses and misunderstandings?
- Have I included appropriate prompts to encourage students to engage in an "assessment conversation" (See Segment 3)?
- Does the sequence allow for the integration of student questions?
- Do the questions progress from lower order to higher order thinking?
- Depending on student response, do the questions move from concrete to abstract? abstract to concrete?
- Do they encourage students to probe deeper and ask their own questions?

Segment 3 **Making Thinking Visible**

Before Viewing

In some classrooms, questioning seldom goes beyond a two-step process – pose a question and elicit a response. Even carefully planned questions aimed at promoting higher-order thinking by students can result in lower cognitive, factual responses.

> **Checking for understanding through questioning should not be thought of as a simple two-step process (question and answer) but rather as a complex progression as the teacher formulates and then listens to the response of the learner.**
>
> Fisher & Frey (2007)

> **In each and every case, we must be sure that we are asking the right questions and that we are making full use of the student responses that our questions elicit.**
>
> Afflerbach (2007)

Effective questioning should take the form of an "assessment conversation," where the teacher " elicits a question, the student responds, the teacher recognizes the student's response, and then uses the information collected to support student learning." (Ruiz-Primo & Furtak, 2006)

Teachers can use a variety of questioning strategies to extend the "question-response" scenario into "assessment conversations" that provide windows into students' thinking.

While viewing, look for ways the teachers use questions to:

- probe more deeply into students' thinking
- encourage students to take risks
- build on students' responses.

After Viewing

Consider the information to stimulate your thinking and discussion about questioning.

Nature of Questioning (1:16 - 1:53)

Research on teacher questioning indicates that the recitation method, which consists of a series of questions "each eliciting a student response and sometimes a teacher reaction to that response" (Gall, 1984), is highly popular.

A different pattern of questioning helps teachers elicit information about their students' learning, promotes higher-level thinking, and increases student engagement.

Developing "Assessment Conversations" Strategies (2:08 – 5:56)

Asking questions that expose students' thinking requires planning and practice. Appendix C: *Developing "Assessment Conversations"- Strategies* shows the strategies modelled by teachers in the video segment, and provides sample question stems for each strategy.

Extending Learning

Activity 1 *Developing Sample Question Stems*

Work with a colleague to add further examples for the strategies outlined in Appendix C. Keep this list of strategies and sample questions/prompts in a visible place for easy reference when planning and teaching.

Activity 2: *Creating a Safe Environment*

If students' thinking is to be made visible, the environment in the classroom must feel emotionally safe. Both students and teacher need to have a clear understanding of what it takes to create such an atmosphere. Collaborate with students to develop a list of criteria that will set out expectations

for classroom behaviors that establish an atmosphere where students can risk sharing ideas and making mistakes.

Work collaboratively with students to create a list of criteria:

1. Begin by asking for their input, drawing on their knowledge and personal experiences. In this 'generating' stage, all responses are accepted, including ideas from the teacher. Sample criteria might include:
   – Listen carefully to all answers
   – Speak politely when responding
   – Keep an open mind
2. Next, organize and prioritize the list, looking for common themes.
3. Once finalized, display the completed list in the classroom for ease of reference.

Segment 4 **Questioning in Action**

Before Viewing

Teachers gather to observe a lesson that has been filmed, and to provide feedback with respect to the questioning strategies presented in Segment 3. Excerpts from a lesson relating to the Grade 12 Canadian and International Law course are shown.

While viewing, look for ways the teacher uses students' answers to expose their thinking. Use the observation template, Appendix D: *Developing Assessment Conversations* to record your observations.

> **Put simply, the only point of asking questions is to raise issues about which a teacher needs information or about which the students need to think.**
>
> Black et al (2003)
>
> **It is essential to use effective questioning techniques to elicit richer evidence of understanding.**
>
> Fisher & Frey (2007)

1:34 The key question for this lesson is: "If you were convicted of a crime in either Canada or the United States, where would you like to be sentenced?"

1:41 – 2:38 Closed questions are used to review previous learning. The teacher is looking for specific factual information presented in a previous lesson.

2:39 – 5:26 Open questions are posed to promote critical thinking. These questions are intended to invite students to "consider and advance many possibilities". (Morgan & Saxton)

3:28 The key question for the unit is posted on the board: "What is the 'ideal' criminal justice system?"

7:56 –9:20 Students are encouraged to pose their own questions.

After Viewing

Reflect on the strategies you recorded on the observation template, or discuss with a colleague. Which strategies do you use regularly? use rarely? Select one strategy to implement during the questioning portion of future lessons.

Extending Learning

Activity 1 *Examining My Practice*

Consider inviting a colleague to observe a lesson and to provide feedback using the observation template, Appendix D: *Developing "Assessment Conversations"- Observation Template*. Alternatively, you might make an audio recording of your questioning and use the template to note what you are doing well, and where you will focus your efforts to improve.

Segment 5 **Engaging Students in the Conversation**

Before Viewing

Effective questioning occurs in an atmosphere that is focused on learning and encourages students to take risks. In this segment, teachers explore and implement strategies to provide students with time to process their thinking and with the confidence to ask questions.

> **If you can both listen to children and accept their answers not as things to be judged right or wrong but as pieces of information to reveal what the child is thinking, you will have taken a giant step to becoming a master teacher.**
>
> Easley & Zwoyer (1975) (in Saphier et al, 2008)

While viewing look for the following strategies used to engage students in thinking.

Think Time (1:07 – 4:18)

The addition of a minimum of three seconds of "think time" has been shown to improve the quality of student responses and student learning. (Rowe, 1986)

Think-Pair-Share (4:25 – 5:43)

Think-Pair-Share is a cooperative learning strategy that enables students to formulate their thoughts and ideas in advance of sharing them with their peers (Lyman, 1981).

"No Hands" Strategy (5:44 – 6:54)

This strategy increases student engagement, encourages all students to take ownership for the learning, and requires all students to think and be prepared to respond. Additional advantages rest in your ability to differentiate, to foster inclusion, as well as to ask students questions of appropriate levels of difficulty while building their confidence. (Black et al, 2003)

Creating a Safe Environment (5:34 – 7:05)

Effective questioning depends on the creation of a classroom environment where students feel able to take risks.

After Viewing

Consider the information to stimulate your thinking and discussion about questioning.

Think Time (1:07 – 4:18)

Research conducted on the pacing of questions provides significant information about the time students need to process and respond. The average amount of time a teacher waits between posing a question and eliciting a response (think time 1) is less than one second (Rowe, 1986). Likewise, the average amount of time a teacher waits between the end of a student's answer and responding (think time 2) is less than one second. Teachers also provide less think time to students they perceive as lower achievers. Cotton (1988) notes that if teachers purposefully increase the amount of time they wait to three seconds or more, students demonstrate:

– increases in the length of their responses
– increases in the amount and quality of evidence they offer to support their inferences
– increases in the number of higher cognitive responses
– decreases in their failure to respond
– increases in unsolicited but appropriate responses.

In addition, the following teacher results are noted:

– increases in teacher expectations regarding students usually thought of as low-achievers
– expansion of the variety of questions asked by teachers
– increases in the number of higher cognitive questions asked by teachers.

Think-Pair-Share (4:25 – 5:43)

Think-Pair-Share (Lyman, 1981) is designed to promote and support higher-level thinking. The teacher asks students to think about a specific topic, pair with another student to discuss their thinking, and then share their ideas with the group.

"No Hands" Strategy (5:44 – 6:54)

In the "No Hands" strategy (Black et al, 2003), *the teacher picks the respondent* rather than asking for a volunteer. The teacher explains this strategy to the students in advance as part of building a safe environment for learning. If a student does not have a response when called upon, he/she has the option to pass "for now." After providing additional time to process, and to listen to the responses of other students, the teacher gives the student an opportunity to respond.

Creating a Safe Environment (6:55 –7:53)

Teachers can nurture a culture of learning by promoting a climate of openness where all responses are accepted, all students are respected, and mistakes are treated as rich opportunities for learning.

Suggested approaches to foster a safe environment where students feel comfortable in exposing their thinking to others:

- Provide the question(s) in advance.
- Allow time for collaboration with peers before responding.
- Allow the student to pass and return to him/her after an extended think time.
- Encourage students to ask their own questions, seek their own answers and provide their own feedback.
- Use mistakes as rich opportunities for learning:
  – indicate what is correct and probe to deal with the mistakes
  – provide prompts and links to help students correct their mistakes
  – simplify the question and/or move from the abstract to more concrete
  – invite other students to address misunderstanding and misconceptions.

Extending Learning

Activity 1 *Increasing My Use of Think Time*

Do a self assessment of your current practice with respect to providing sufficient think time. At the end of a lesson, reflect on your use of think time. What are you doing well? What can you improve upon? How will you go about making the improvement? Alternatively, you could invite a colleague to observe your questioning and provide feedback on your use of think time.

Activity 2 *Implementing the Think-Pair-Share Strategy*

- Organize students into pairs (elbow partners).
- Pose a discussion question or topic.
- Give students 30 - 60 seconds to think about their responses.
- Ask students to share their thinking with their partner.
- Invite students to share their ideas with the class.

Activity 3 *Implementing the "No Hands" Strategy*

- Begin by explaining the strategy and its benefits to students. Some will need reassurance about their role in this different way of conducting classroom discourse.
- Implement the strategy initially for small segments of the lesson. You may find it helpful to combine **No Hands** with other strategies such as a **Think-Pair-Share** to give students time to process the question and reflect on their response.
- Tell students that they have the option to pass "for now" when called upon, but that you will be returning to them for an eventual response.
- Gradually increase the frequency and the length of time for which this strategy is used.

Activity 4 *Encouraging Students to Ask Questions – KWL Chart*

A KWL (**K**now – **W**ant to Know – **L**earned) Chart (Ogle, 2009) can help students identify what they know, generate questions about what they want to know, and record what they have learned. It is an excellent *assessment **for** learning* tool when used as an exit card following a period of learning.

What I know	What I want to know	What I have learned

Activity 5 *Examining My Practice*

Invite a colleague to observe a lesson and give you feedback, using the observation template, Appendix E: *Engaging Students in the Conversation*. As well, ask your colleague to track the distribution of your questions by recording this information on a seating plan.

Segment 6 **What We've Learned**

Before Viewing

Teachers share their experiences – both successes and challenges – as they continue to look for ways to improve oral questioning.

> **Questioning generates the kind of talk and communication which can lead to learning.**
> Morgan & Saxton (1994)
>
> **More effort has to be spent in framing questions that are worth asking; that is, questions which explore issues that are critical to the development of students' understanding.**
> Black, Lee, Marshall, Wiliam (2003)

While viewing, look for how the teachers' comments are organized:

1:15 – 2:26	Planning your questions
2:32 – 4:01	Exploring students' understanding
4:06 - 4:51	Accessing students' thinking
4:54 – 6:25	Enhancing student engagement
6:26 – 8:27	Impact on students

Reflection and Next Steps

Now that you have become familiar with effective questioning as *assessment **for** learning*, take some time to reflect on your learning, and to determine next steps.

- What have been some of the key learnings for you?
- What has been the impact on your students?
- What aspect of oral questioning will be the focus for your future professional learning?
- What do you need in order to do this? Where can you get what you need? Whose help do you need to engage?
- How will you know that you have improved? (i.e., What will you see?)
- What are some of the next steps in order to further develop effective questioning? For you? For your students?

Appendix A **My Questioning Practices**

Effective Questioning	**Usually**	**Sometimes**	**Rarely**
Planning Assessment and Instruction			
I plan questions to determine what students know, with respect to their learning goals, and what they still need to learn.			
I design questions that anticipate and expose individual student misconceptions or learning challenges.			
I develop questions that uncover students' attitudes and interests.			
I develop a sequence of questions that scaffold students' thinking from lower to higher cognitive levels.			
I design key questions to focus students' thinking on the critical learning (big idea, enduring understanding).			
During Teaching and Learning			
At the beginning of a lesson or series of lessons, I pose and post for viewing key questions to focus students' thinking.			
I use questions during the lesson to monitor whether students are grasping concepts and to see what they are thinking while I'm teaching.			
I ask questions to help students think about their thinking (metacognition).			
I pose a question at the end of a lesson to determine if students have achieved the learning goal(s).			
I wait at least 3 seconds between posing a question and eliciting a response.			
I wait at least 3 seconds after a student's answer before responding.			
I use a variety of strategies to engage all students in thinking about a question, (e.g., Think-Pair-Share, allowing time for individual reflection and collaboration, No Hands strategy)			
I use closed questions to review, check for understanding, and recall facts.			
I use higher cognitive questions to engage students in analysis, critical thinking, determining relationships, and making judgements.			
I use strategies to expose students' thinking, (e.g., probing, redirecting, gathering, synthesizing, summarizing).			
I distribute my questions among all students, both those who volunteer and those who don't.			
I foster an emotionally safe learning environment where students feel able to take risks.			

Appendix B **Questioning Quotes**

More effort has to be spent in framing questions that are worth asking; that is, questions which explore issues that are critical to the development of students' understanding.
Black, Lee, Marshall, Wiliam (2003)

It appears that teachers emphasize fact questions, whereas research indicates that an emphasis on higher cognitive questions would be more effective.
Gall (1984)

Successful responding to lower level questions is a prerequisite for high level learning… it is impossible to summarize or evaluate information that a person does not know or understand.
Bellon, Bellon, Blank (1992)

Effective questioning should take the form of an "assessment conversation," where the teacher "elicits a question, the student responds, the teacher recognizes the student's response, and then uses the information collected to support student learning."
Ruiz-Primo & Furtak (2006)

In each and every case, we must be sure that we are asking the right questions and that we are making full use of the student responses that our questions elicit.
Afflerbach (2007)

Checking for understanding through questioning should not be thought of as a simple two-step process (question and answer) but rather as a complex progression as the teacher formulates and then listens to the response of the learner.
Fisher & Frey (2007)

Put simply, the only point of asking questions is to raise issues about which a teacher needs information or about which the students need to think.
Black & Wiliam (2003)

If you can both listen to children and accept their answers not as things to be judged right or wrong but as pieces of information to reveal what the child is thinking, you will have taken a giant step to becoming a master teacher.
Easley & Zwoyer (1975)

Questioning generates the kind of talk and communication which can lead to learning.
Morgan & Saxton (1994)

Appendix C **Developing "Assessment Conversations"- Strategies**

Below are some common strategies for extending questioning interactions to elicit what students are thinking. Use this template to record additional examples of questions you can use for each strategy. Keep this in a visible place for easy reference during planning and teaching.

Strategies to probe more deeply into students' thinking (2:08 – 3:24)
a. Asking for clarification *Can you explain further how …?*
b. Encouraging students to expand an answer *Can you expand on …?*
c. Asking for a rationale *Why do you think that …?*
Strategies that encourage students to take risks (2:25 – 4:43)
a. Affirming effort *I like the way you thought about your answer.*
b. Postponing to allow extra think time. *We'll give you a moment to think, and come back to you.*
Strategies to build on students' responses (4:44 – 5:56)
a. Gathering *What else might go with that idea?*
b. Asking for analysis *How are _____ and _____ connected?*
c. Redirecting *How can we build on what _____ said?*
d. Synthesizing *How can we combine these two ideas?*
e. Summarizing *What is the common theme?*

Appendix D **Developing "Assessment Conversations" - Observation Template**

Use this template to record your observations/reflections about your use of the strategies listed below. Explain this different approach to questioning to students and record their feedback. You might also ask a colleague to observe your lesson and provide feedback on your use of these practices, using this template.

Practice	Observations/Reflections	Student Feedback
Probing students' thinking a. Asking for clarification • Explain further how…? b. Encouraging students to expand an answer • How can you expand on your answer? c. Asking for a rationale • Why do you think that?		
Encouraging students to take risks a. Affirming effort • I like the way you thought about your answer. b. Postponing to allow extra think time • We'll give you a moment to think, and come back to you.		
Building on students' responses a. Gathering • What else might go with that idea? b. Asking for analysis • How are _____ and _____ connected? c. Redirecting • How can we build on what _____ said? d. Synthesizing • How can we combine these two ideas? e. Summarizing • What is the common theme?		

Appendix E **Engaging Students in the Conversation** (Segment 5)

Use this template to record your observations/reflections about your use of the strategies listed below. Include some of your own questions. Explain this different approach to questioning to students, and record their feedback. You might also ask a colleague to observe your lesson and provide feedback on your use of these practices.

Practice	Observations/Reflections	Student Feedback
Posing the key question in advance (Segment 2) • Does the question encompass the "big idea"? • Is the question referenced during instruction? •		
Building in "think time" (Segment 5) • Did you wait 3 seconds - before eliciting a response? - before responding to the student's answer? •		
Using a Think-Pair-Share strategy (Segment 5) • Did you - pose an open-ended question? - provide students time for reflection and sharing? - vary how students are paired? •		
Using a "No Hands" strategy (Segment 5) • Did you - explain the purpose of the strategy to students? - provide sufficient think time? - give students the option to "pass for now"? •		
Encouraging students to pose their own questions, (e.g., KWL) (Segment 5) • Did you - model the use of the KWL organizer? - display sample question stems for student use? - talk with students about types of questions? •		
Impact on student learning • What observations did you make about student learning? - Was there an increase in the number, length, or quality of student responses? - Was there a change in students' willingness to respond? •		

Appendix F **Reading List**

Afflerbach, P. (2007). Understanding and Using Reading Assessment K-12. Newark, DE: International Reading Association, Inc. 51 – 70.
Examines reading assessment. Chapter 3 focuses on questioning as an assessment tool; describes the characteristics of effective questions; and provides examples of planning a progression of questions using a taxonomy as a framework.

Black, P., Harrison, C., Lee, C., Wiliam, D. (2003). Assessment for Learning: Putting It Into Practice. New York, NY: Open University Press. 32 – 42.
Reports on a study of teachers implementing assessment for learning practices. Chapter 4 focuses on questioning, and describes a variety of questioning approaches, including "no hands", "wait time" and the successes and challenges encountered by the teachers.

Blosser, P. (1991). How to Ask the Right Questions. Arlington, VA: National Science Teachers Association.
Discusses types of questions (e.g. closed vs. open, divergent vs. convergent) and the value of wait time. Concepts are illustrated through a transcript of a lesson.

Clarke, S. (2005). Formative Assessment in the Secondary Classroom. London: Hodder & Stoughton. 49 – 65.
Focuses on implementing assessment for learning practices in the secondary classroom.

Cotton, K. (1988). Classroom Questioning. Portland, Ore: NW Regional Education Laboratory.
http://www.nwrel.org/scpd/sirs/3/cu5.html
Summarizes the research on questioning, particularly relating to the benefits of wait time and the uses of lower and higher cognitive questions.

Denton, P. (2008). The Power of Our Words. *Educational Leadership*. 66(1). 28 – 31.
Discusses how the language teachers use creates a classroom environment where students feel safe to take risks in responding to questions and engaging in learning.

Fisher, D., Frey, N. (2007). Checking for Understanding: Formative Assessment Techniques for Your Classroom. Alexandria, VA: ASCD. 36 – 56.
Chapter 3 provides extensive information about using questions to check for understanding.

Gall, M. (1984). Synthesis of Research on Teachers' Questioning. *Educational Leadership*. 63(3). 40 – 47.
Provides a perspective on past research conducted on questioning, particularly with respect to the effects of lower and higher cognitive questions.

Leahy, S., Lyon, C., Thompson, M. Wiliam, D. (2005). Classroom Assessment: Minute by Minute, Day by Day. *Educational Leadership*. 63(3). 19 – 24.
Article discusses assessment for learning practices. Section entitled "Engineer Effective Classroom Discussion" emphasizes the use of questions to "learn about students' thinking". Suggests strategies for engaging all students in classroom discussion.

Marzano, R. Pickering, D., Pollock, J. (2001). Classroom Instruction that Works: Research-Based Strategies for Increasing Student Achievement. Alexandria, VA: ASCD. 112 – 117.
'Cues, questions and advance organizers' is one of the nine research-based strategies addressed in this book. Discusses using questions before a student learning experience to establish a "mental set."

Ministry of Education. Professional Learning Guide: Questioning. Connecting Practice and Research in Mathematical Education. Available:
http://www.edu.gov.on.ca/eng/studentsuccess/lms/questioning.pdf
This professional learning guide provides information about questioning in a mathematics context, together with a variety of professional learning activities for teachers to implement improved questioning in mathematics teaching.

McComas, W. & Abraham, L. Asking More Effective Questions. Retrieved October 2010.
http://cet.usc.edu/resources/teaching_learning/docs/Asking_Better_Questions.pdf
Provides a variety of ways to categorize questions to help teachers "more effectively use questioning as a pedagogical strategy". Outlines 8 techniques for successful questioning. Provides a series of questions to reflect on questioning practices.

Morgan, N. & Saxton, J. (1994). Asking Better Questions: Models, techniques and classroom activities for engaging students in learning. Markham, ON: Pembroke Publishers.
A comprehensive treatment of classroom questioning. Provides a variety of ways to categorize questions, ways to deal with students' responses; an example lesson; strategies for promoting student questioning.

Rowe, M. (1986). Wait Time: Slowing Down May Be a Way of Speeding Up! Journal of Teacher Education. 37(1). 43-50.
Emphasizes the value of providing students time to process their thinking; outlines the benefits; Rowe's research on wait time provides strong evidence that students benefit substantially from a three-second pause to process thinking.

Saphier, J., Haley-Speca, M. Gower, R. (2008). The Skillful Teacher: Building Your Teaching Skills. Acton, MA: Research For Better Teaching, Inc. 204 – 215
Provides a thorough treatment of questioning as both an instructional and an assessment strategy. Models planning a progression of questions using a variety of organizers.

Appendix G **References**

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Ogle, D. (2009). Creating Contexts for Inquiry: From KWL to PRC2. *Knowledge Quest.* 38(1). 56 – 61.

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Tomlinson, C. & Strickland, C. (2005). *Differentiation in Practice: A Resource Guide for Differentiating Curriculum, Grades 9 – 12.* Alexandria, VA: ASCD.

Wiggins, G. & McTighe, J. (2005) *Understanding by Design.* Alexandria, VA: ASCD.