Segment 1: Planning Instruction, Planning Assessment (7:37)

Narrator:
Effective assessment and instruction are inseparably linked. They must be concurrently planned and clearly rooted in specific learning goals and success criteria. Planning assessment that is seamlessly integrated with instruction produces a continuous flow of assessment information that teachers and students use to improve learning. In short, assessment becomes instruction and instruction becomes assessment.

Quote on screen: Learning is not a linear process. Assessment doesn’t come at the end...Learning intentions and assessment are connected so closely to curriculum that it is impossible to plan them in isolation from one another. Earl (2003)

This video shows teachers strategically planning using a backward design proposed by Wiggins and McTighe and purposefully integrating assessment with instruction to improve student learning and inform teacher instruction.

You will also see how teachers integrate the Assessment for Learning process in their planning to engage students, guide next steps, and help teachers and students monitor learning.

Three key questions guide these teachers as they plan the assessment concurrently with instruction.

What are students expected to learn?
• Identifies the desired knowledge and skills that students must learn

T: Our learning goal is to identify substances using physical and chemical properties and also to plan and conduct a scientific inquiry.

How will students know they have learned?
• Identifies appropriate evidence and criteria to be used to demonstrate their learning

T: What are one of the success criteria that we need to accomplish here? Janet.

S1: Uh, well you have to know the properties of the five unknowns – both the physical and the chemical properties.

T: Darina, what’s another success criteria?

S2: You have to understand and apply lab safety.

How will we design the instruction?
• Creates the learning experiences that embody the learning and illicit the evidence.

T: Today we’re going to be doing a lab. We need to know physical and chemical properties of the five unknowns to do this lab. The second thing is the safety issue. What’s our purpose in this lab? Alex.

S1: Well, the purpose is to identify the five different powders which is pretty much just our learning goal.
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T: So that’s one of our learning goals. What’s the other learning goal?

S2: To plan and conduct a scientific inquiry.

When teachers plan assessment to improve learning, they use the guiding questions to integrate assessment practices into the instruction.

Identifying, sharing and clarifying learning goals answers the question: What are they expected to learn?

Defining and co-developing success criteria with students clarifies: How will they know they have learned?

Engaging students in ongoing assessment, descriptive feedback, peer and self assessment, individual goal setting and learning conversations describe: How will we design the instruction?

T: I’m just wondering which big idea we’re going to focus on and hope that they get next and design the lesson around that.

Identifying what is to be learned starts with the big ideas – understandings that students need to know, appreciate and retain long after they have forgotten the facts and details related to content.

Big ideas “go beyond discrete facts or skills to focus on larger concepts, principles or processes”. Wiggins and McTighe (1998)

T1: As far as these measurable attributes are concerned and our overall big idea here of these relationships, what relationships are you looking to explore?

T2: I think we’re hoping that they’re going to use those measurable attributes of the circle to come up with the specific expectations of volume.

T1: So then a relationship between height, volume, area of the base or radius and volume – these are the relationships you’re looking for.

T3: There’s three learning goals that we’re going to continue to cover and these will be the theme for the next week or so as we look at the optimization unit. So we learn what is meant by optimization, and that’s a big theme of our calculus course where we want to make the best of a situation with constraints.

Big Ideas help teachers cluster curriculum expectations and design learning experiences to achieve the desired outcomes.

T1: So let’s begin this planning for this measurement unit here. Where do you want to start?

T2: Um, I think I’d like to start looking at this overall expectation: “Determine the relationships among units and measurable attributes including the area of a circle and the volume of a cylinder”.

T1: I’m just wondering which big idea we’re going to focus on and hope that they get next and design the lesson around that.
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T1: So then what’s the real big idea we’re going to be looking at throughout this unit?

T2: Um, that relationships exist among the measurable units in a cylinder.

*Here is an example of a Big Idea: There are relationships between and among the linear, area, and volume measures of 3D figures.*

**Overall Expectation:** Determine the relationship among the units and measurable attributes including the area of a circle, and the volume of a cylinder.

**Specific Expectation:** Determine through investigation, using a variety of tools and strategies, the relationship between the area of the base and the height and the volume of a cylinder.

Curriculum Expectations are written for teachers and may not necessarily be in language students can readily understand. If our goal is to help students be able to monitor their own progress they need to know and understand what they are expected to learn.

Hattie and Timperley frame the first planning question, “What are students expected to learn?”, from a student’s perspective: “Where am I going?”

**Learning Goals:**

- We are learning to:
  - conduct an investigation.
  - explore the relationships between the volume of a cylinder and the area of its circular base.
  - generalize a formula for the volume of a cylinder from these relationships.
  - optimize one measure of a cylinder given a constraint on another measure of that cylinder
  - solve real life problems involving the surface area and the volume of cylinders

*In other words, these learning goals come from this specific expectation.*

Carefully crafted learning goals, rooted in curriculum expectations, help teachers and students come to a common understanding of where they are going and what they are expected to learn.

Quote on screen: Planning your approach to assessment and evaluation is just as important as planning what you are going to teach. Cooper (2006)

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Segment 2: Making the Learning Transparent to Students (14:16)

Narrator:
Effective assessment and instruction are inseparably linked. They must be concurrently planned and clearly rooted in specific learning goals and success criteria. Planning assessment that is seamlessly integrated with instruction produces a continuous flow of assessment information that teachers and students use to improve learning. In short, assessment becomes instruction and instruction becomes assessment.

Quote on screen: Once assessment is designed to be educative, it is no longer separate from instruction: it is a major, essential, and integrated part of teaching and learning. Wiggins (1998)

In this segment, teachers use the question ‘What are students expected to learn?’ to guide their planning; and the question: ‘Where are we going?’ to make the learning transparent to students.


One cause of student underachievement results from the difference between what teachers think they are teaching and students think they are learning.

S: We developed also the success criteria for this assignment in particular (the allegory). We created the success criteria with Mr. Pomakov.

Teachers engage students as partners in the learning by collaboratively building a common understanding of what they are to know and to be able to do.

S: So it gave us a chance to kind of internalize the meaning and it really helped us understand what would define a good allegory or what we’re trying to accomplish in the assignment.

Lesson planning must ensure curriculum expectations are expressed as student-friendly, grade-appropriate learning goals.

Text on screen: LEARNING GOAL: To plan and conduct an inquiry into the properties of common substances and distinguish the substances by their physical and chemical properties.

T1: Now, how friendly do you think that is for the students?

T2: ‘Plan and conduct an inquiry’ ‘cause we’ve done it already several times and they’re used to that language already, so that’s fine. With respect to physical and chemical properties, we’ve also discussed that so I think it’s fair enough that they could understand that information.

Sometimes expectations can translate into user friendly learning goals.

T1: So I suppose you need to identify these four specific expectations and maybe devise some learning goals based on them?

T2: And we want to make sure that the learning goals are worded in student-friendly language.

T1: ‘Determine through investigation, using a variety of tools and strategies, the relationship between the area of the base and the height and the volume of a cylinder.’
T2: So this expectation can translate directly into our student-friendly learning goal.

T1: Something like “determine through investigation the relationship between the area of the base, the height and volume of a cylinder”.

Sometimes teachers deconstruct and reconstruct expectations with students to clarify the learning by using clear, concise language that makes the goal and the look-fors transparent.

Text on screen: BIG IDEA □OVERALL EXPECTATIONS □SPECIFIC EXPECTATIONS □ LEARNING GOALS

This expectation becomes these learning goals.

Text on screen:

Specific Expectations
• Determine through investigation, using a variety of tools and strategies, the relationship between the area of the base and the height and the volume of a cylinder

We are learning to:
• To explore the relationship between the volume of a cylinder and the area of the circular base
• To generalize a formula for the volume of a cylinder from these relationships
• To solve real life problems involving the surface area and the volume of cylinders

Text on screen: LEARNING GOAL: To learn the meaning of optimization and to apply it in real life situations.

T1: What I want to do now is, let’s continue on our journey of solving optimization problems. We’re going to look at an open, an open box problem and after we’re done it, we’re going to talk informally about the success criteria, and then I’m going to get you to work in groups of four and solve an optimization problem. What I want you to do now is read the question to yourself, make sure you understand the problem. I want you to be thinking about the success criteria as we work through it and I’m going to be also talking about the success criteria as well for this particular problem.

T2: This morning as you’re working in your centres, you are going to be discovering the learning goal.

When engaged in inquiry, teachers must decide when and how best to share the learning goals. Assessment and instructional planning must include explicit strategies for sharing and clarifying the learning during the instruction.

T: OK Grade 8s, let’s talk a little bit now as a large group. What were some of your thoughts on this today? You’ve shared them with your table group, and let’s share them as a large group now. Mitchell?
S1: We learned the difference between in the pre-experiment, which was our theoretical probability, and our actual experiment, which was experimental probability. We found that the results can vary a lot because it’s all up to chance.

T: OK, thank you. Kelly?

S2: Today we thought we learned how to calculate the probability in a real-life situation and actually using a spinner, or a dice.

T: I’m going to jot down some of the things that you were saying and we want to develop it into a learning goal for today. “Today in math we were learning…” – what?

S3: How to apply probability to a real-life situation.

T: How to apply real-life – or how to apply probability to real-life situations. Would anyone else like to give me another one please? Nicole?

S4: The difference between theoretical probability and experimental probability…and how their results vary.

Student achievement is enhanced when teachers take the time and effort in their planning to build a ‘common understanding’ of goals and look-fors.

Text on screen: LEARNING GOAL: To plan and conduct an inquiry into the properties of common substances and distinguish the substances by their physical and chemical properties.

T: And what’s important about observations as far as how we communicate it? Janet?

S: You should always use a chart to organize your ideas because it’s the easiest way to just see and know what you’re doing.

T: And that’s all part of planning and conducting that experiment. Once you’re done the lab and you’ve made your conclusions we’re going to pair up into groups of four. At that point you will be sharing your observations and your conclusions with your group members, and the group members will give descriptive feedback based on the success criteria so that you can make any adjustments to the lab that you need to. Does everyone understand that? Is that clear?

Effective planning includes designing appropriate assessment tools to assist students in monitoring their progress on a cluster of learning goals while they are learning.

T1: This is what I’ve been using in my classroom for the previous math units. I’ve taken the specific expectations and written them all down in student-friendly language so the students have them at the beginning of the unit, and then once they have learned the learning goal or they have achieved the learning goal, then they’re able to write down their understanding of the learning goal in their own words and pictures and with numbers so that they can refer back to it and have an understanding of that learning goal.

T2: They record in here just whatever they need to do in order to demonstrate their learning.

T1: And that way they can self-assess their own learning and achievement of the learning goals.
T2: So while the students are writing their learning down, what is it that you’re doing?

T1: I’m circulating around the room and, um, having conversations with the students to have them explain to me what they’re writing so that I can check for understanding.

T2: So you’re not only getting something written but you’re actually having a conversation too.

T1: Right, and then I’m able to assess their learning and see if they have met their learning goal and to give them feedback and ways to improve.

T2: So I suppose that while you’re circulating around you’re seeing, obviously, people grasping with the concept quite simply and people struggling. What do you do in those circumstances?

T1: Then I’m able to reteach or to help clarify and, um, maybe say it in a different way so that they can understand it.

*There are two pitfalls to be avoided when writing learning goals from curriculum expectations. One is that the knowledge and skills identified in the expectations are not being changed but shared in language that students understand.*

S1: Usually at the beginning of the class we get together in a group and then we have to flesh that goal out.

S2: So I think when we do things this way it encourages us to think more and in the end that will help us to have a more conceptual understanding and to apply our knowledge.

*Another is that learning goals are not simply about what students are doing but rather what they are learning.*

S: At the beginning of class, Mr. DelBianco always gives us a learning goal so by the end of class we know what we need to know in order to succeed and unlike other classes – the teachers just give us what we have to do. They don’t tell us what we need to know by the end of the lesson.

*Teachers need to deliberately plan and explicitly connect learning activities to the learning goals and criteria.*

T1: When we talk about tables, what does a good table look like, and so there are some superficial criteria there, like lines, and things like that. Headings are important, but what else should it have?

T2: I think the overall ability of what to organize, what goes into it. What you’re talking about is a communication piece.

T1: Accuracy is very important here, is it not?

T2: Yeah.

*Instructional strategies and learning conversations must align with ‘what is being learned’ – the learning goals, and a common understanding of ‘what the learning looks like’ – success criteria.*
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T: How important is it that our observations are accurate?

S1: We have to use the same terms.

S2: The results on the table match up exactly to the results on the observation table you gave us before.

T: If your observations that you’re making aren’t accurate, what happens?

S3: Then we get the wrong results. Even if you have all the other stuff, if it’s not accurate you’re still going to get the wrong answers and then all your observations get messed up.

T: So even within our category of success criteria for our observation tables, there are some more important than others is what you’re saying.

S3: Yeah, basically.

*Teachers need to intentionally plan when and how to share and clarify learning goals during the learning. Strategies might include:*

**Text on screen: SHARING LEARNING GOALS**
- Tell students orally
- Post it
- Write the goal in a notebook
- Connect to the goal during the lesson
- Link the goal to the criteria
- *Post it*
- *Link the goal to the criteria*

S: He gives us the experiment, and then we’re supposed to look for the success criteria in that experiment. We can look at the success criteria and see, like, this is what we should be learning.

**Text on screen: CLARIFYING LEARNING GOALS**
- Ask, ‘What are you learning?”
- Discuss the meaning with an elbow partner
- Define key words for meaning
- Re-write the goal in their own words
- Deconstruct and reconstruct expectations into a learning goal
- Have students link the goal to the activity
- List one or two ‘look fors’ that show learning

*For clarifying learning goals,*
- Discuss the meaning with an elbow partner

T: With your seat partner, I’d like you to talk about some of the words in that learning goal that might not make crystal clear sense to you because what we’re trying to get at is that you and I both understand exactly what we’re trying to do today. We want to create a common understanding for each and every one of us and with me.
• **Re-write the goal in their own words**

T: Yesterday when we looked at our learning goal you weren’t comfortable with a particular word. Which word were we not particularly comfortable with?

S1: Strategies.

T: And we brainstormed a new word. What was the new word?

S2: Methods.

• **Have students link the goal to the activity**

T: Write down one nice sentence that will sum up, in a nice learning target for today, what we have been learning through this experiment.

*Developing guiding questions integrates assessment with instruction by:*

• **generating learning conversations**
• **encouraging critical thinking,**
• **internalizing success criteria**
• **and promoting self assessment**

Text on screen: generating learning conversations

T: Can you show me what your thoughts are here on this paper?

S1: Um, we’re just dividing now the sub by the people. So we got 0.77 which would equal 77% of our sub.

T: Where do you think you want to go from here? You’re not sure.

S: No, not yet.

Text on screen: encouraging critical thinking

T: If you were delivering subs to a field trip, to a class, how would you show 77% of a sub?

S: We’re going to have to divide the sub into pieces, so like, what – 22 pieces?

Text on screen: internalizing success criteria

Promoting self assessment

T: Do you think that that is a realistic solution to this problem?

S: Now that I think about it, I don’t think that it’s reasonable because you can’t really cut a sub into 22 pieces. We have to find some type of fraction of the sub to give to someone, so like one-fourth of it maybe for three subs?

Text on screen: promoting critical thinking
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T: So would you like to play around with this idea on the paper and I’ll come back and take a look?

Quote on screen: Teaching is a means to an end. Having a clear goal helps focus our planning and guide purposeful action toward the intended result. Wiggins and McTighe (2009)

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Segment 3: How Will We Know They Have Learned? (9:30)

Narrator:
*Effective assessment and instruction are inseparably linked. They must be concurrently planned and clearly rooted in specific learning goals and success criteria. Planning assessment that is seamlessly integrated with instruction produces a continuous flow of assessment information that teachers and students use to improve learning. In short, assessment becomes instruction and instruction becomes assessment.*

Quote on screen: How do we make it more likely – by our (lesson) design – that more students really understand what they are asked to learn? Wiggins and McTighe (2005)

*Students need to know early in the learning, what they are expected to learn – learning goals – and what it looks like when they learn – success criteria.*

Text on screen: TEACHERS ARE GUIDED BY THE QUESTIONS:
- What are students expected to learn?
- How will we know the students have learned?
- How will we design the instruction?

In this segment, teachers specifically plan their assessment and instruction, guided by the question: ‘How will we know the students have learned?’ They identify the criteria that defines success and the evidence to be used as proof of learning.

*Defining quality success criteria is essential for teachers and students alike. Quality evidence of learning depends on and aligns with criteria that is clearly identified.*

T1: Do you think it might be helpful if we gave them some time to sit and think about how they could apply today’s question using the success criteria as they go?

T2: Sort of like a think-pair-share?

T1: Yeah, and just think for themselves, and then have even their success criteria right there and think “OK, we could tackle this problem by using these strategies here and these ideas that we’ve generated to make sure we’re a little more successful. And we’re (of course) hoping they’re going to get to the big idea.

Co-developing success criteria with students produces a common understanding of success.

T: OK, so we’ve written out the solution. Hopefully you’ve put a concluding statement, and I want you to start brainstorming, in pairs, what the success criteria would look like, and then as a class we’ll just jot down some of the preliminary points that you’ve come up with.

T: Now let’s just make a really quick preliminary list of some of the success criteria of what any optimization problem would look like. You know, just shout out the answers and I’ll write them down.

S1: Draw a diagram.

T: Draw a diagram.
S2: Identify the value to be maximized or minimized.

T: Good. What else?

S3: Find the equation of what you’re trying to maximize.

T: Anything else?

S4: State the constraints. Substitute it into the equation.

T: OK, and we combine it in here. So I want to see it successfully done.

S5: I think you want to differentiate correctly.

T: OK, and then after you differentiated, what do we do?

S5: We differentiate the first time to obtain the critical numbers. We differentiate the second time to test for whether we have a max or a min.

Text on screen: SUCCESS CRITERIA

- Draw a diagram
- Identify max/min values
- Write an equation
- State the constraints
- Differentiate correctly
- Critical numbers/points

T: Anything else anybody wants to add? Would we want any other criteria to be placed in? You know, for the reader, whoever reads it. Let’s not answer that now. I want you to think about it.

Co-developing success criteria with students:

- Produces a common understanding of success
- Teaches the language of assessment
- Provides ongoing assessment information
- Helps internalize what success looks like, and
- Leads to quality evidence of learning.

To effectively co-create criteria with students, teachers need to identify the criteria in advance while they are planning.

T: And we’re just going to review the success criteria for working in groups. So you are going to make sure that you’re working cooperatively in your group, and specifically with regards to the math, you need to make sure that you show all your calculations, that you use mathematical terminology, and that any fractions that you are using are going to be in simplified terms.

Teachers should always develop quality criteria for important instructional tasks that are linked to essential learning.

T1: The end task, uh, we’re going to need to come up with some criteria. What’s going to make the student successful? What are we looking for? They’re going to need to organize their data in the form of a table.
T2: Right. Calculations should be accurate.

T1: Formulas are correct but they’re also using them properly, right? So, accurate answers. Proper units.

T2: Yep.

T1: For communication purposes, are we actually going to have them build the can, or do we want to have them draw it?

T2: We could have them represent it in both a model and in words, and explain their reasoning.

T1: OK, so we have visual representation, and we’ll have maybe a verbal or written explanation. For the written explanation, I suppose having it is one thing, but what is it we’re looking for in that explanation that’s going to demonstrate their thinking?

T2: Well, we want them to clearly explain their reasoning – maybe using appropriate mathematical vocabulary.

T1: They need to discuss the connection between surface area and volume.

Text on screen: SUCCESS CRITERIA
- Organize data in a table
- Accurate calculations
- Use appropriate formula correctly
- Proper units
- Explain reasoning
- Visual representation
- Verbally/in writing
- Use appropriate mathematical vocabulary
- Connection between surface area and volume

And plan rich assessment tasks that allow students to demonstrate the full range of their learning.

T2: I always do this to think about what I think the end task should include and what the students are going to need to include in order to be successful.

When planning, teachers should ensure that evidence of learning is gathered in an ongoing way and accurately reflects the knowledge and skills embodied in the expectations and learning goals.

T: How many of the 25 rolls would you think should have been an odd number?

S: Half.

T: Half.

S: Well, or around half. Something like that.
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T: So OK, now what do you think might have happened if you did that experiment 50 times?

S: Then you should get about 25 or half.

T: OK, so you’re saying that what should have happened and what actually happened might get closer together.

S: Yeah. If you do it so many times.

T: OK. Thank you very much.

To assess students’ achievement of the learning goals, teachers need to:

- Ensure the evidence aligns with the goals and expectations

T: The exit card will go last. After the rotations are finished we will bring them back as a whole class, give them some time to think-pair-share, maybe share with other groups, and then as a class we will establish that learning goal about comparing theoretical and experimental probability.

- Select strategies and experiences that produce the evidence

T: …and then the exit card will be – it will serve two purposes – it will be an opportunity for them to consolidate and reinforce in writing, individually, what the difference is between experimental and theoretical probability, and it will also give us an opportunity to see who has it down and who still needs some work on it.

- Use appropriate tools that support data collection and self assessment

T: I would like one person from each of the table groups to come up and get the booklets for their group.

Text on screen: GATHERING RELIABLE EVIDENCE

*The litmus test for quality planning lies in the correlation among:*

- learning goal and success criteria,
- assessment tasks and learning experiences
- evidence that is reliable and valid.

*Each one must embody and inform the other two. Their alignment must be transparent, explicit and self evident.*

T: I want you to take 60 seconds at your table to come up with one criteria for your observation table. Go ahead.

T: How about you guys? What did you come up with?

S1: Um, well, you need to label the chemical properties.

T: What do you mean by ‘label chemical properties’?

S1: Since we’re identifying our unknowns based on chemical properties, like, for example, like…
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S2: …conductivity in water.

S1: Yeah, so, we have to make it really evident that we’re looking at how conductive it is in the water.

Engaging students in defining success helps students to know what success looks like and helps teachers gather accurate information about learning.

Quote on screen: The formative assessment process is a fundamental reframing of the work teachers and students do day to day and minute to minute in the classroom. Moss and Brookhart (2009)

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Segment 4: Gathering Evidence that Demonstrates Learning (12:43)

Narrator:
Effective assessment and instruction are inseparably linked. They must be concurrently planned and clearly rooted in specific learning goals and success criteria. Planning assessment that is seamlessly integrated with instruction produces a continuous flow of assessment information that teachers and students use to improve learning. In short, assessment becomes instruction and instruction becomes assessment.

Quote on screen: Does the proposed evidence enable us [teachers] to infer a student’s knowledge, skill, or understanding? Wiggins and McTighe (2005)

Gathering valid and reliable evidence requires teachers to plan assessment tasks, practices, and procedures that are:
- “ongoing,
- varied in nature,
- administered over a period of time, and that
- provide multiple opportunities to demonstrate a full range of learning”.

Text on screen: BACKWARD PLANNING REQUIRES:

Backward planning makes use of specific learning strategies and activities that yield precise evidence by:
- Designing rich performance tasks that embody the learning and are explicitly linked to expectations and criteria

T1: If our big idea has been relationships among units I think we need an assignment that talks about that. This expectation is “solve problems using surface area and volume of cylinders”. I suppose radiuses, heights, surface areas, volumes…in this task it would be really nice if they could be doing it on their own.

T2: Like an investigation.

T1: How’s about they work for a soup company and, ah, the cost of aluminium is going up. Let’s imagine we need to minimize our surface area – so minimize the aluminium – but still maximize the volume and the amount of soup you can fit in each can and, you know, see if they can come up with a specific can that does those things.

T2: Maybe we should think of some questions that are going to help focus their thinking.

T1: Maybe a question about what is the maximum volume and the minimum surface area?

T2: Are we expecting that they all have the same product?

T1: What if we were to hold the height of the can constant, so we’ve eliminated one the variables and they’re able to play around with the radius, and therefore the area, of the circle? And there will be a maximized volume for that, for a given surface area.
T2: Do you think that we’re linking back to what we said was our overall expectation and our big idea?

T1: Yeah, I think so. I think that our lessons are going to be looking at relationships and they’ll be using the learning that we’ve done in the past, the learning goals, obviously, the relationships between radius, height and volume; radius, height and surface area. I think they’re going to need to use those skills in order to answer the questions and produce this soup can.

Text on screen: OVERALL EXPECTATION
Determine the relationship among the units and measurable attributes, including the radius of a circle and the volume of the cylinder.

T2: So we definitely need to make sure that we’re constantly linking back to the overall expectation and that big idea throughout each lesson leading up to the end task.

T1: The final task for this series of lessons is going to give you a chance to demonstrate to me what you’ve learned and do you understand the learning goals. The end task is set up like this. The situation is this: You work for a soup manufacturer. The company packages its soups in aluminium cans, and, well, aluminium is expensive. You’re going to have to design a can with a height of 15 centimetres. You’re going to need to maximize the volume and minimize the surface area. In order to accomplish this task, what measurable attributes are we going to need to know?

- Defining and applying success criteria to offer descriptive feedback on what is being learned

T1: OK, for this end task we’re going to need to come up with some criteria. What’s going to make the students successful? What are we looking for? Uh, do you want to just throw a few ideas down?

T1: For our end task, you’re going to have to look for relationships that exist between these measurable attributes. With a partner, I’m going to ask each group to come up with one success criteria that’s going to help you succeed on this end task. Go ahead.

T1: What did we do during our lesson that discovered the relationships between, ah, well, radius and volume?

S1: If you increase radius or height the volume will increase too. We found out the formulas.

S2: And, like brainstorming your thoughts as opposed to just thinking by yourself.

T1: How did we organize our information?

S1: With a chart.

T1: Ah, excellent, a chart.

T1: We need to brainstorm a list of success criteria now on how to be able to maximize our volume and minimize our surface area.

S3: You might need to know the formulas.
T1: Know the formulas.

S3: And kind of know how to use them.

S4: You need to make sure that the height is 15 centimetres.

S5: The relationships between the volume of the cylinder and the surface area of the cylinder.

S6: To understand the question properly.

S7: Make it organized.

S8: Does more volume necessarily mean more surface area?

S9: Reflecting on your answer.

Text on screen: SUCCESS CRITERIA
- Know the formulas
- Use them properly
- Height = 15 cm
- Relationships between volume and surface area of cylinders
- Understand the question properly
- Be organized
- Does more volume necessarily mean more surface area
- Reflect on your answer

T1: Now this is a great beginning to our list of success criteria. I will be giving you plenty of opportunity in the next couple days to be discussing these to ensure we all have the same common understanding of what they all mean.

- Using appropriate assessment tools to assess, monitor, and record student progress.
- Gathering enough evidence to yield balance within the categories of the achievement chart.

Teachers need to triangulate their evidence to include products, observations and learning conversations.

Text on screen: TRIANGULATION Lincoln & Guba (1984)
- products
- observations
- learning conversations
Davies (2008)

Text on screen: Learning conversations

T: Have you come up with a method for determining the surface area of the rectangle?

S: You have to multiply the length and the width of the rectangle.

T: So what have you noticed about the surface area of that rectangle and the cylinder you’ve now made?
S: Because they’re the same piece of paper they have the same surface area.

T: Would you be able to figure out what the surface area is of this curved rectangle now?

S: We could multiply the height and the circumference of the circle.

T: Which circle?

S: Uh, the circle at the top.

T: Why would you do that?

S: Because the circle at the top has the same length as the rectangle would.

*Teachers must decide how much evidence is enough to demonstrate mastery of learning. And secondly, determine the most appropriate balance when triangulating the three sources of evidence.*

*Teachers then look for patterns of achievement from the three sources to identify the most consistent level of performance to inform and enhance their professional judgement.*

*Planning should include samples, exemplars and anchors to help students visualize quality work.*

Text on screen: SAMPLES, EXEMPLARS AND ANCHORS
- visualize quality work

S1: How do we distribute the subs to make it as fair as possible? Total number of subs is equal to 17 and total number of students is equal to 22, so we estimated three fourths.

S2: We knew that when you cut a sub you’re not going to cut it into a number like 40 pieces or something, so we wrote them down – one half, one third, two thirds, one fourth, or three fourths – and, so, we just tried them all out and we saw which one was the most reasonable, and lastly we did three quarters. And, so, if every student got three quarters of a sub you would need 16 and a half subs.

S2: So, in conclusion we think that 16 and a half, that means trial five, is the most closest to the number 17.

*Samples, exemplars, and anchors help students develop assessment language, clarify criteria, define quality and achieve mastery.*

Text on screen: SAMPLES, EXEMPLARS AND ANCHORS
- visualize quality work
- develop assessment language
- clarify criteria
- define quality
- achieve mastery
T: Can you just clarify for us what most reasonable seemed to be? This one seems the most reasonable but what does that term mean to you?

S1: We just looked at all the numbers we got. We saw that there was a huge amount of difference in between each answer, so even if you go to trial five and you do some other number, it would obviously be above 17 or under 17.

T: Can anyone expand on that?

S2: I think what they're saying is that some of them – the sum that they got – wouldn't make sense in the context. It would look right and make more sense to go into quarters.  

When teachers complete assessment tasks before assigning them to students, the quality of the criteria and the evidence is significantly enhanced.  

T: One of the strategies that I use is to actually go through the task and create it so that I can, um, think about...

T2: Anticipate.

T1…anticipate and predict what the success criteria will be.

T2: That’s a great idea. Um, so we’ll be able to have a pretty thorough list of success criteria. Alright, how are we going to co construct the success criteria with the students? I mean we can start with just a quick brainstorm?

T1: Right, and it’ll be ongoing so that we can refine the list, and add to the list, and clarify each of these criteria as we go along.

T2: So we’ll pull from the students, and as we go along we’ll just keep going back to it.  

Teachers also plan learning conversations and engineer classroom discussions to promote deeper understanding and critical thinking.

T: OK, when you say ‘show all steps’, it’d be interesting to know what the rest of the class thinks of that.

S1: To me it means that I’m communicating that I understand the question and I show you how I get to the answer using proper math form.

T: So that’s what ‘show all steps’ means to you. What about someone else?

S2: It also helps to organize your thought process.

T: OK.

S3: Well, it means that if I show my solution to somebody else, then that person can also understand what I’m, what’s going on.

T: ‘Cause I’m looking at the way we would develop the success criteria. You guys first of all started off with the mathematics. What would this be part of?
S1: I think that’s communication.

T: So under communication solution to yourself, right, to show that, and also to me when I read it.

*Dedicating time to planning effective questions challenges students to think and helps them come to a common understanding of success and how to improve.*

T1: I find one of the really interesting aspects of learning about this with the kids is coming up with great questions to ask them that never give away the answer.

T2: And you have to control yourself not to give the answer and you have to listen, have good wait time, and, you know what? Truly, it’s surprising what great answers and strategies the students come up with.

T1: I also do the activity myself beforehand so I can anticipate some of the struggles that they might have and so I can start to pose some questions as they go through. I’ve started to write some of those questions on their posters so when they pick up their posters to work on them the next day they’ve got some descriptive feedback and it gives them a sense of where to go next without telling them the answer. I’m actually finding too the kids are asking the questions of each other in their partnerships more so I’m getting to walk around and listen and be a fly on the wall more. They’re beginning to drive themselves in the direction we’re hoping to go.

Quote on screen: Effective assessment is more like a scrapbook of mementos and pictures than a single snapshot. Rather than using a single test, of one type, at the end of teaching, effective teacher-assessors gather lots of evidence along the way using a variety of methods and formats. Grant Wiggins and Jay McTighe (2005)

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Segment 5: How Do We Design Assessment With Instruction? (12:25)

Effective assessment and instruction are inseparably linked. They must be concurrently planned and clearly rooted in specific learning goals and success criteria. Planning assessment that is seamlessly integrated with instruction produces a continuous flow of assessment information that teachers and students use to improve learning. In short, assessment becomes instruction and instruction becomes assessment.

Quote on screen: If assessment is also a learning event, then it does not take unnecessary time away from instruction...Linn, R. & Baker, E. (1996)

In this segment, teachers focus on designing the learning experiences. The question, “How will we design the assessment and instruction?”, guides their planning at this stage.

When planning assessment with instruction, consider how the activities:
- Connect to the learning goals and the evidence
- Integrate continuous assessment seamlessly with the instruction

T1: Let’s start planning our unit for probability and we need to think about the overall expectations, and looking at the big ideas and what we want our students to understand.

T2: So, looking at the curriculum outline for probability: “use probability models to make predictions about real life events”.

Learning experiences must be precisely linked to curriculum expectations and learning goals, so students can make explicit connections between what they are learning and what they are doing.

Text on screen: LEARNING GOAL: We are learning the difference between experimental and theoretical probability.

S1: We are learning that the theoretical and experimental outcomes can be close in percentage the more times you conduct the experiment.

S2: And the more you perform that specific event, the more similar they will become

Effective lesson design integrates the practises of assessment for learning, and assessment as learning, with instruction, helping students to become increasingly independent learners.

Text on screen: Questioning

T1: If we take the questions that we’ve developed, the leading questions, we could actually go around and ask the group to think about that, and give them some think time and tell them that we’re going to come back and to talk to them about it in a couple of minutes.

Text on screen: Self assessment

T2: We’re always looking to try to build the students’ independence and their ability to self assess. So what sorts of things do you think that we can do to help them along the way to self assessment?
T1: I think it would be a really good idea if on our booklet we had some of the success criteria that we developed in the past for working in groups, and then maybe if we add in a couple about our overall math success criteria using mathematical language, we have them take a moment to self assess themselves based on the success criteria...

T2: Great.

T1: ...and then that will allow us an opportunity to go and speak to the students and do some assessment on their self assessment to give them some feedback.

T2: I think that’s great.

T2: All right, so what do you have?

S1: OK, the outcome of an event occurring in theory does not necessarily dictate the outcome of the event occurring in an experiment.

*Effective planning must ensure that learning goals, success criteria, and learning experiences coincide to make the learning transparent and to facilitate peer and self-assessment. Student/Teacher interactions are purposely planned to lead students from guided instruction to independent practice...*

T: What I want you to do now is to pair up with the person beside you and you are going to exchange papers, and then you’re going to write down what the student has done well based on the success criteria. So, think of the math knowledge, think of the communication aspects and the thinking aspects. Give two points on what is being done well, OK. Is there anything that needs to be worked on? Then tell your peer how to go about it.

...and to promote collaborative learning through peer and self assessment.

T: Base your peer assessment on the success criteria. So one of the things when it asks for needs improvement, they have to write a concluding statement.

*Integrating assessment with instruction demands teachers intentionally plan when and how to clarify learning goals and when to co-develop criteria for giving and receiving descriptive feedback.*

S1: Two things that I think you did well were that the diagram was drawn and was labelled with the dimensions and the unknowns, and your therefore statement, you stated what the question asked for so you have your dimensions. And you also stated Y, so that A Prime equals zero.

S2: For yours, I thought that your steps of the mathematical solution were clearly outlined and you followed all the success criteria.
S3: At the end of your solution you didn’t write the concluding statement with proper units. You didn’t really answer the question “What dimensions of the box required the minimum amount of materials?”. 

S4: You answered the question step-by-step but you forgot to write the units for your conclusions, so I think that’s the things that you need to improve.

*Integrating assessment with instruction demands teachers purposely plan when and how to involve students in self-assessment and individual goal setting. When teachers plan in advance to gather accurate information about where their students are they can make informed decisions and plan how to move forward next.*

T1: What do they need to remember, or what do we need to review with them?

T2: If we’re going to talk about odds and we’re going to talk about chance, then we need to make sure they have a really good understanding of fractions and percentages. So let’s review our learning goals from our previous three lessons that we had: I will be able to identify probability as a range from 0 to 1.

T1: Yes.

T2: And in our second lesson we said that our learning goal was to be able to list all the possible outcomes of the experiments, and then that led into our third lesson which was to be able to calculate probability from the tree diagrams and the list.

T1: Right.

Text on screen: **LEARNING GOAL:** We are learning the difference between experimental and theoretical probability.

T2: When they are working in their groups that we were talking about doing, they will be able to do simulations and discuss the probability – the difference between the theoretical and experimental probability.

T1: And that also ties into another specific expectation, which is to compare through investigation the theoretical probability of an event with the experimental probability.

*Activating students’ prior knowledge can lead to differentiated instruction.*

T1: So, I guess we can start with us asking them even to repeat what are the big ideas that we know from the previous activities and see if they can articulate them again. Where do you think we should go after that?

T2: Um, once we have reviewed those concepts I think we should then give out the question and set the scenario and have them move into their pairs and start problem solving

*Involving students deliberately in classroom assessment challenges teachers to:*  
• *Make explicit connections between the learning and the instruction.*

T1: So now that we have our learning goal, I think that we should think about how the whole lesson is going to work. We want to do rotations and we know that we want to have some kind
of simulation at each of these stations because that’s what the expectation asks for. We have some kind of booklet where the students can keep track of their results, making a pre experiment or prediction of what’s going to happen, and then after they’re done the experiment they can actually fill in what happened.

T2: Right. And we should have a set number of trials that we want them to go through so they’re not just flipping coins randomly, so we should maybe say 25 or 50 trials and they’ll have to specifically record down the results for each one.

- Utilize strategies and tools that actively engage students in gathering information in assessing their progress.

T1: And we can do that in a booklet form, and have it labelled – maybe have 6 stations – and given the number of students that we have we’ll have 4 or 5 students in each station. That should work.

T2: Wonderful.

- Employ alternative groupings to engage students and differentiate instruction.

T1: So I’m just wondering, Amanda, what kind of groupings do we want to have the students in?

T2: I think that mixed ability groupings will be the way to go. I think that students who will struggle to grasp the concepts initially will be guided towards that by the students who are a little bit further along.

- Design specific learning activities that embody the desired knowledge and skills.

T1: So I’ve got six different activities here: a coloured spinner with four quadrants there, an 8-numbered spinner, a number cube, a flipper that they can use. I took a full deck of cards (no jokers) that they can use and then just some letters that spell out the word “California” that’s going to go into a bag and they’ll draw it randomly. So all of those activities will tie really nicely into theoretical versus experimental probability.

T2: And all of those activities that the kids will be involved in will relate directly back to the learning goal for the day.

- Engage students as learning resources for one another.

T: Work together. Remember to keep the success criteria in mind as you’re working through the problem, OK, so the math knowledge, the communication, and the thinking process.

S1: OK, what we should do is, we should take the process from the last question and try to work backwards. So what we did is we differentiated the first time to find the critical numbers, so if we were to differentiate what we have which is 10 times the length times the height, is there any way that we could work backwards to find what the length and the height might be?

S2: All you did here was divide this by 10, ‘cause that’s 10.
Incorporate multiple opportunities for continuous student/teacher and student/student feedback.

T: Once they get through the success criteria, we have a sense through our feedback and their feedback that we’re ready to move on to congress. So I’ve actually brought some posters previously that I’d looked at and when I looked at them I noticed that they’ve already got some of the big ideas, and the kids will ask questions that will help drive your thinking and allow the kids to share comments and thoughts that they had to see where that went.

Plan and teach peer and self assessment knowledge and skills.

T1: How are we going to use the success criteria for peer and self assessment?

T2: The math problem is key but the success criteria will help guide them and give them a sense of what direction to go next in solving the problem, to strategize it. Maybe once they’ve done the self check that will be an idea for us that they’ve all got that done – we’re ready for congress.

T1: I really like that idea because we can walk around and take a look at how they are assessing themselves.

T2: When we start congress we can have them articulate some of the success criteria for the actual solving of the problem and we can refer to both and that can help them give feedback to each other at the same time.

T1: Maybe we will present the idea that we’re going to give them an exit card and on this exit card perhaps we can have a problem that’s directly related to the key concepts in the lesson. And it would be good if we had sort of a traffic light on this exit card for us to check for understanding, so that would be very good assessment data to see if they’ve understood the concept.

Quote on screen: Assessment that is consistent with principles of learning and understanding should:

- Mirror good instruction
- Happen continuously, but not intrusively, as a part of the instruction
- Provide information about the level of understanding that students are reaching

Bransford, Brown, and Cocking (2000)

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Segment 6: Designing Instruction to Empower Students (11:45)

Narrator:
Effective assessment and instruction are inseparably linked. They must be concurrently planned and clearly rooted in specific learning goals and success criteria. Planning assessment that is seamlessly integrated with instruction produces a continuous flow of assessment information that teachers and students use to improve learning. In short, assessment becomes instruction and instruction becomes assessment.

Quote on screen: …there must be a match between what is taught and what is assessed. Wilson and Sloan (2000)

When planning, teachers consider the nature of instruction and the integration of assessment. The design of the instruction is always driven by the learning, particularly when students are engaged in collaborative inquiry. Investigation and inquiry usually involves process and knowledge.

Text on screen: DESIGN OF ASSESSMENT AND INSTRUCTION
LEARNING GOALS
• To conduct an inquiry
• To know the difference between theoretical and experimental probability

T1: I’m wondering if we want to do some kind of discovery lesson and have the students actually develop the learning goal on their own.

T2: Because we’re doing an investigation and they’re going to be rotating through different stations and experimenting with probability we want them to be thinking through, we want them to be reflecting on their own thinking and on what they’re learning, so that they are coming to that understanding and we’re guiding them to that place.

T1: And then have them articulate that back to us at the end of the class.

T2: I think that’s fabulous.

T1: Well, if this is our learning goal, “to be able to compare theoretical and experimental probability”, I’m wondering if that’s really the words that our students are going to come up with?

T2: I think that they will be able to sort of move towards the vocabulary we need them to use, like ‘theoretical’ and ‘experimental’ and they’re not words that they haven’t heard before.

T1: Right, and that’s good though, that’s part of, that’ll go right into their success criteria, that they’re using appropriate mathematical vocabulary.

T2: Definitely.

Identifying learning goals and criteria may come at any time during the inquiry process.

T: What I’d like you to do now is take a few minutes and you can discuss this with your table group. And I’d like you to think about, come back to the question that I asked you at the very
beginning, “What are we learning?”. What were you doing today? What was the expectation? What was the reason why we were doing these table group simulations?

*Inquiry-based learning requires flexibility and creativity around when and how learning goals and success criteria are developed and shared with students.*

T1: Maybe the one way wasn’t the only way that that learning goal can be taught, so I’m able to reteach it in a different way.

T2: You’re using this sheet and you’ve got all your goals laid out in advance. I think probably in my circumstance I might just have it blank and have the students write them in as we go. It might just add to some of that flexibility.

T1: I think that this isn’t the only way to do it and as long as the learning goal is shared with the students and they’re given the opportunity to show their understanding…

T2: That’s all that matters.

T1: …that’s all that matters.

*Challenges with planning collaborative inquiry include:*

- Writing and sharing learning goals that do not compromise the inquiry.
- Promoting critical thinking through quality questioning.
- Defining and applying criteria during the inquiry process.
- Using criteria to self-assess while they learn.

Text on screen: CHALLENGES WITH PLANNING COLLABORATIVE INQUIRY

Writing learning goals that suggest inquiry

T1: Today we’re going to be doing a lab. Our learning goal is to identify substances using physical and chemical properties and also to plan and conduct a scientific inquiry.

Text on screen: Promoting critical thinking through questioning

T2: I think once they’ve started working in their groups, I would, of course, be walking around and listening and asking open ended questions and trying not to give the answer – trying to draw it out of them. What I’ve been doing in the unit is asking an open ended question and then letting them work on that concept and then maybe coming back around to revisit.

T3: So maybe we should anticipate some questions that they might have and plan some questions that we could ask.

T2: I love it.

Text on screen: Defining and applying criteria en route

T1: One thing I want to focus on is observations. Explain to me how you would organize the data at this point.
S1: Well, I’d put like, “Substance 1, Substance 2” on the top and on the side I would put the methods by which we would determine the substances.

T1: So what are some of the success criteria that you came up with?

S2: Use proper terminology when you’re defining what chemical properties and physical properties you’re going to be looking at.

T1: Give me an example.

S2: Um, conductivity in water, so that’s really specific to what you’re looking at.

T1: Anything else?

S3: To be concise.

Text on screen: Using criteria to peer and self-assess

T1: You are now going to come together in groups of four at your table. You guys are going to trade observation tables and I want you to use the success criteria that we just developed to give some descriptive feedback to the group members.

Backward planning targets essential outcomes during the learning.

T1: Now that we have the activity designed, I think that we need to come up with some ways that we can be monitoring the learning as it’s going on to make sure that we know the students are working towards what we want them to get at.

T2: So we want to pre plan some questions, then, that we have for the students as we’re going around and doing some observations of their groupings.

T1: Wonderful. And we can make some anecdotal notes about those, the answers that they give and how articulate they are.

Planning questions and conversations is an essential part of backward design. It helps:

- Focus the planning
- Guide the learning
- Promote critical thinking
- Elicit assessment information
- Engineer learning conversations
- Anticipate and/or address misunderstandings.

Text on screen: Focus the planning

T1: So what would be some questions that we could ask that not only let us know that they’re learning what they need to learn but help guide them towards that critical thinking?

T2: I’m wondering if we could ask them, “What they notice about the difference between their predicted outcome compared to their actual outcome?”
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Text on screen: Guide the learning

T1: That’s perfect. For a second one, how the experimental and theoretical probability should move closer together…could we make a question that goes along those lines?

T2: Sure. So I’m thinking that maybe we could phrase this question: “What do you think might happen to the difference between your predicted outcome and your actual outcome if we increased the number of trials?”

Text on screen: Promote critical thinking

T1: Again, getting them thinking about the differences and the randomness of these outcomes: “What do you think you would notice if you compared your results from this station to the outcomes of another group?”

Text on screen: Elicit assessment information

T3: So I found through listening to my kids and making notes as they were progressing through that inquiry process that a lot of my students have some of the big ideas we really wanted them to get but there were some they’re not getting to yet.

T4: So how did you gather the information?

Text on screen: Engineer learning conversations

T3: Well, when we previously met and we anticipated the strategies they would use, and we wrote them down on the seating plan and some of the responses. I used the codes that we discussed and as I circulated I looked at their work, I asked them specific questions and I asked them to tell me about the strategies they were using. I also gave some prompt questions to see what they were thinking and if they were thinking like mathematicians at that point. And what did you do?

Text on screen: Anticipate and/or address misunderstandings

T4: I walked around and took notes. I asked oral questions and after they were working in their groups I took a look and saw if they were getting the big ideas. I found that they tended to solve the problem all the same way, very numerically, getting fraction/decimal/percentage equivalents, but I saw very little evidence of pictures and using various strategies. So I hope that in the next lesson we’ll see more of that.

The design of the instruction must incorporate ‘critical checkpoints’ to determine if all students are meeting essential learning goals.

T: So do we want to just work out that exit card then? And it could be just a quick snapshot and we’ll look at it and we can know by the end of the day, or do we want to need to come back and do some reteaching and more congress work?

Critical checkpoints are ‘know before you go’ moments, which are strategically planned and timed to ensure that all students are moving forward in their learning.
T: Now my next question is have we reached our learning goal for the day? “I will discover a method for calculating the surface area of the cylinder.”

S: I believe that we have reached the learning goal for today.

T: What I’d like you to do now is I’d like you to take out your learning goals sheet, and I’d like you to write in your own words maybe the equation, a sentence, or an image that is going to help you remember our learning goal for today.

Gathering assessment information at these critical checkpoints identifies:

- Who is learning
- Who needs support
- When to differentiate
- Where to go next in the learning

Feedback loops, peer and self assessment and self reflection are routinely used at strategic times to make sure students ‘know before they go’ forward.

S: I think that the fact that we know what Mr. DelBianco expects and what he looks for in our work makes us more confident. Then if we review based on the success criteria which makes us more prepared and confident I guess.

The spirit and intent of assessment for learning demands that teachers plan regular opportunities for students to:

- Learn and practice assessment knowledge and skills.
- Co-develop goals, criteria, rubrics and checklists
- Engage in peer and self-assessing their work.
- Give and receive feedback on the quality of their self assessments
- Set individual learning goals and monitor their progress.
- Act as learning resources for one another
- Become increasingly more responsible for their learning.

S1: I guess once we get more used to giving everybody feedback we know what to look for and we start relating more to the success criteria and the learning goal. Well, by telling others about what they did well and what they should improve definitely helps them for the next time.

S2: It not only helps other people improve with the feedback that you give them, but, based on what you tell other people, it should also help yourself because you can see what they’ve done right and use it to improve what you’re doing.

Quote on screen: To begin with the end in mind means to start with a clear understanding of your destination. It means to know where you’re going so that you better understand where you came from so that the steps you take are always in the right direction. Stephen Covey (1989)

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Segment 7: Aligning Assessment with Instruction (13:43)

Narrator: Effective assessment and instruction are inseparably linked. They must be concurrently planned and clearly rooted in specific learning goals and success criteria. Planning assessment that is seamlessly integrated with instruction produces a continuous flow of assessment information that teachers and students use to improve learning. In short, assessment becomes instruction and instruction becomes assessment.


In this segment you will see teachers using the three guiding questions to integrate the assessment for learning process into their lesson design. When teachers plan with the end in mind, assessment and instruction come together as one.

T1: I was wondering if we could do something with allegory based on graphic texts.

T2: I think that’s a great idea.

T1: So how do you think we should approach that? How are we going to break it down so that students can understand it in simple learning goals?

Teachers and students take a collaborative approach to their learning.

T: The thing that's really helped myself and my students is just how well everything has been articulated. So by teaching students how to develop learning goals, success criteria, and descriptive feedback, in a sense they’re co-constructing the class.

Together, they are defining what is being learned, what the learning will look like, and how they work as co-learners through ongoing assessment.

T1: We can use that success criteria as descriptive feedback and then we can even have them co-construct rubrics using the success criteria.

Text on screen: What students are expected to learn

T1: So let's take a look at the curriculum. We want to hit as many expectations as possible.

T2: I think we should focus on the expectation of using knowledge of form and style so that they can draft and revise their writing as they go. Well, what about the media strand? I think they need to understand media forms and conventions and techniques.

T1: Like graphic texts would also be a part of – would be – a media text, right?

T2: Absolutely.

T1: So why don’t we come up with one statement, a big overarching idea, that could be our focus for the whole unit?

T2: Well, we’re trying to have students recognize that rich texts have multiple meanings.
T1: What about something with the graphic texts? What if we change it and we say ‘all great literature or all rich texts are open to multiple interpretations and can take on many different forms’?

T2: I think that’s great.

T1: So, one thing I want to do is put the expectations in student-friendly language so they understand it.

*Rich performance tasks that result in meaningful learning often require scaffolding – incremental steps that lead to mastery.*

Text on screen: **BIG IDEA**
Rich texts appear in many different forms and can support multiple interpretations.

T1: We’re going to break this into six lessons, so the first one being inference, and the difference between implicit and explicit message. Next would be defining allegory and the third lesson would be defining graphic text.

Text on screen: **BIG IDEA**
- Inferential thinking
- Defining allegory
- Defining graphic text

T2: What if with the success criteria – after they develop that we have them actually writing the rubric for the assignment?

T1: I think that’s a great idea.

T2: That way they’ll have a deeper knowledge of what we’re actually evaluating in the final product. I think the way that you’ve chunked the unit – we’ve broken it up into the smallest incremental components that they can easily understand and once they’ve mastered those they can move on to the final culminating activity. One thing we’re still missing is a student-friendly learning goal for each lesson.

Text on screen:  
Creating an allegorical graphic text

T2: So, the first lesson is on inferencing, reading between the lines, and we want to relate that to allegory. They understand the importance of inferencing in differentiating between an explicit and implicit message. How can we come up with a simple statement that students could really understand?

T1: Students will be able to, um, delineate the characteristics of an allegory.

*Aligning curriculum expectations, success criteria, and assessment tasks to the big ideas makes the learning explicit and transparent to all.*
T1: If you take a look at the big idea over here: “Rich texts appear in many different forms and can support multiple interpretations”, so what is an allegory?

S1: An allegory is a story that has a deeper meaning than what would appear on the surface.

T1: So how would the idea of a graphic text fit into our big idea?

S2: Well it appears in different forms, and, like, this is a visual representation of the same literature.

T1: So what we are actually going to ask you to do in this unit is to develop your own graphic text that is an allegory. The way we do that is by scaffolding our learning goals in increments – defining what an allegory is, defining what a graphic text is – and ultimately that will lead to the culminating activity which will be your graphic text.

Text on screen: What are students expected to learn?
We are learning to explain the differences between explicit and implicit meaning.

T1: The first lesson today will be on inferential thinking and looking at the differences between explicit and implicit meaning in text.

Text on screen: How will both students and teacher know students are learning?
Developing success criteria

T1: The fourth lesson will be on developing success criteria, so what are the essential elements that we need to create a successful allegory and a successful graphic text? Then you will have a chance in groups to develop your outline or draft for your graphic text, and then you will debrief the descriptive feedback you've received from your peers and develop that into a final product.

Text on screen: What are students expected to learn?

T1: Take note of the learning goals: “We are going to demonstrate insight into our strengths and weaknesses as writers” and also “practice strategies to improve our writing skills on developing complex texts”.

Text on screen: How will we know they are learning?

T1: I think you’re right. We need to let them look at other types of allegory. After they’ve done that we get them to brainstorm the essential elements that make up an allegory, and that could lead into success criteria as well. We have some graphic novels as well. We could pass those around the classroom, right, and they could do exactly the same thing – delineate the essential elements of a graphic text…

T2: What makes them successful, what makes them interesting to read.

T1…and then we could make that into a list of success criteria, right?

T2: Yes.
T1: So we could say graphic text, and then the four people in each group could just right down the essential elements and then we could collate that into basically a group list of the success criteria and we could do the same thing with allegory.

Defining, sharing, and building a common understanding of the learning goals helps students see, recognize and frame the outcomes from their point of view.

T1: I think they need to understand media forms and conventions and techniques, so looking at other graphic novels and looking at the exemplars that the class before has come up with.

Samples and exemplars help students to:
- Represent and define the learning
- Develop and apply the criteria
- Assess and monitor progress
- Conceptualize and analyze assessment tasks

T1: So you've been divided up into groups of three students and each group has an exemplary graphic text. So what I would like you to do today is browse through the graphic texts and identify the essential elements of a graphic text and the essential elements of an allegory. Then we're going to brainstorm those, put them up on the board, and develop a list of success criteria that we can use when we're writing our own graphic texts and allegories. Take several minutes to look through the graphic texts in your groups. You have your brainstorming sheet. Fill out the brainstorming sheet on success criteria, and then we need at least one point from every student in the classroom or from every group up on the board.

S1: In the text it would be an underlying meaning.

S2: Yeah. It's also relatable to other stuff.

S1: So implicit meaning, and it also has to have an explicit storyline, so...

S2: In terms of the graphic text itself, I think, like, the actual - how they do the panels - it's pretty important like in this example.

S1: So, basically, how the graphics are organized?

S2: There should be a relationship between the pictures and the text. I think there should be symbolism in the text.

S1: I guess they should also make use of things like metaphors and other such literary devices.

S3: And also the meaning should allow some multiple interpretations. I guess that would be in both the text and the allegory.

S4: The words are supported by the pictures and vice versa.

S5: Especially in terms of the characterization. So once we are drawing it, it's going to be really important to portray the character through the visual.

S4: You don't need to describe as much as you would if it were a normal text, so instead, it's very sparse in terms of words but the pictures take care of the rest of the explanation.
Engineering effective learning conversations encourages students and teachers to:
  - Interact with and internalize the goals and criteria.

T: So have you guys come up with any essential elements for allegories or graphic texts from looking at this exemplar?

S1: Sort of like just using the deeper meaning to get the implicit out of...

T: What do you mean by explicit?

S2: In this graphic text we really noticed that the use of mice as characters really furthered the message.

  - Reach the goal through critical thinking and self-reflection

T: What are some of the deeper levels of meaning that you've gleaned from the text?

S1: Well, it's talking about the philosophy that you live your life with and that's the implicit meaning in that text.

T: OK, so that's something that you guys need to focus on when you're writing your allegory – a superficial, surface-level meaning that everyone can understand and then deeper levels of implicit meaning within the allegory.

  - Cultivate common understandings of goals and outcomes

T: I just want to make sure that you guys are clear about the difference between explicit and an implicit meaning.

S: Explicit is the surface level of the story; for instance, the tortoise and the hare. If one was to look at it with the explicit meaning in mind, it would simply be about a tortoise and a hare who had a race, but the implicit meaning is, um, always keeping, um, putting effort in or else someone who's more hungry than you in terms of ambition will overtake you.

  - Become learning resources for one another

T: Do you think that imagery and symbolism are essential in an allegory?

S1: I think so.

T: Why?

S2: They need symbolism if they're going to have any implicit meaning or sort of like a subtext.

S3: Whenever these characters find themselves at the mountain for example, that, I think there's an implicit message there – that the mountain, for example, provides knowledge – I think that's what there trying to imply here.

T: OK, so do you think that would be one of the elements of success criteria that we would be looking for?
S3: Well, I noticed that most of the story is split between shots of, for example, the narrative. For example here where there’s simply dialogue, but they also have certain shots involving the mountain, which to me it seems to suggest that there’s something more to those elements than simply their literal meanings as a mountain.

T: One person from each group, could you please come up? The chalk is up there. Just put one point that we could use to construct our list of success criteria. Please record these on your success criteria chart. So what we’re going to do is de-brief these points and then after we discuss them I’m going to develop a list of success criteria and we can use that to peer assess our graphic texts. So, symbolism?

S1: Using symbols within the story to try and convey the implicit and explicit meaning.

T: Characterization.

S2: The characters in the allegory should be, um, I guess, conducive to the meaning. So you should use the characters to convey the particular meaning of the allegory both implicit and explicit.

S3: In making the allegory applicable to making it timeless, making it universal, the character itself should be impersonable in the same way. It can represent many things.

T: A balance of images and text.

S4: There should be a balance because if you have too much text or too much imagery it takes away from the other aspect.

S5: The graphics should be eye-catching so that it draws the reader in.

Quote on screen: When assessment is integrated with instruction, it informs teachers about what activities and assignments will be most useful, what level of teaching is most appropriate, and how summative assessments provide diagnostic information. McMillan (2000)

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Segment 8: Students as Partners in the Learning (10:45)

Narrator: Effective assessment and instruction are inseparably linked. They must be concurrently planned and clearly rooted in specific learning goals and success criteria. Planning assessment that is seamlessly integrated with instruction produces a continuous flow of assessment information that teachers and students use to improve learning. In short, assessment becomes instruction and instruction becomes assessment.

Quote on screen: …effectively designed learning environments must also be assessment centred. Bransford et al (2000)

Text on screen: How to plan assessment with instruction

When designing assessment with instruction, teachers incorporate specific learning experiences intentionally to help students develop their assessment language and skills to monitor their learning. As teachers and students work together as co-learners, students are routinely engaged in feedback, self assessment, and goal setting.

T1: The final element in the descriptive feedback is that one person from each group will go around and they will get feedback.

T2: And what if we have one student from each group go to another group and gives them information on one thing done well, one thing that needs improvement, and then one next step? Then they come back to their group and develop an action plan with future goals to basically finish off the final assignment, the culminating activity.

T1: OK, so then while each student is leaving their home group and going around and getting feedback and providing feedback, we can go around and see how well they’re meeting the success criteria.

T2: And observe what they’re doing and have conversations about the learning that’s going on, right? We can triangulate the data look at observations, conversations, and the work the students have done.

T1: OK.

T2: And how well they understand it.

T1: Absolutely.

Text on screen: PEER ASSESSMENT
T: Today, we will be doing peer assessment of your drafts, and you will be providing descriptive feedback to fellow classmates so that we can go back and revise our drafts and come up with our final product. What I would like you to do now is pick one member from each group and rotate in a clockwise fashion around the room, and you will explain your rough draft to the group. They will tell you at least one thing that you have done well in your graphic text, one thing that needs improvement, and some next steps to improve the overall graphic text. After we’ve finished a full rotation of all the groups, I want you to get back into your groups and we will provide you with time to debrief all of the critical information you have on this peer assessment sheet, to work together in groups...

S1: I was just talking to Ashti about the plot. It starts out really well, and it’s building, and then all of a sudden, like, this frame happens and it just doesn’t make sense, so...

T: So there’s a problem with transitions.

S1: So I’m going to put that under needs improvement.

T: Needs improvement.

S2: We want to have a logical sequence of ideas so that to get to the implicit ultimately you have to have the reasoning that builds it.

T: So you’re saying that there basically always needs to be a logical connection between the explicit meaning and the implicit meaning to the reader.

S2: We couldn’t really make the connection, so after adding maybe a few more pictures to build that transition you could have someone else read it.

T: What exactly do you think you’re missing in the transition?

S1: I think it’s definitely the motivation. It just doesn’t, like, make sense. Why would he do that? And the message, because of that, the reasoning isn’t clear.

S3: OK, yeah, I get that.

S1: You could do some foreshadowing, so maybe he lost, like, I don’t know, like knives by his bed or in his pocket, or he has blood stains somewhere, and you think that it’s because he’s a doctor and it, like, drops hints.

S2: Like with each one you could add something else that foreshadows one murder ‘cause that’s your message.

S3: Yeah, exactly.

T: OK, so what I’d like to see you improve on is your next steps, in terms of how we’re going to improve the overall flow of the story from this scene to this scene.

When teachers explicitly share the learning, demonstrate how the task embodies the learning, and provide opportunities for feedback and revision, students know where they are and where to go next.
Text on screen: PLANNING OPPORTUNITIES TO ACT ON FEEDBACK

T1: After the students do their peer assessments in groups, when they come back to their home group, how are they going to implement this plan?

T2: Well, I think they’re going to need to have one person talking about the feedback that the other students have provided and I think that they should probably focus on what needs improvement, and then develop an action plan for the next steps.

Text on screen: DEVELOPING INDIVIDUAL LEARNING GOALS

T1: And now the students are developing their own learning goals. It gives them a greater understanding of what they’re doing and what they’re learning.

T2: OK, so now we’ve provided opportunities for descriptive feedback, for peer and self assessment, and we’ve also provided time to follow up on the feedback that they’ve been given. They’ve identified next steps and defining new learning goals.

T1: OK, that’s good.

Text on screen: PLANNING NEXT STEPS

T1: Now we’re going to look at different strategies to improve our writing. Debrief these sheets. How are you going to implement the descriptive feedback to move to the next stage which is going to be your final product?

Text on screen: ACTING ON PEER ASSESSMENTS

S1: What they thought we needed more of was that we need more plot transitions, so in order to make the story more fluid…

S2: I don’t think we should, like, take away too much from the mystery of the character, so then I think we should just add, like, some subtle details.

S1: So I guess that would be adding more frames into the story.

T: So how’s it going so far?

S3: So we needed more transitions to improve the clarity of our meaning.

T: OK.

S3: So we were going to add in little details in between our scenes.

S2: Another thing we want to do is, um, maybe at the end add a quote.

T: Yeah.

S1: So just to tie in the entire message really well, just add an ending quote.

T: Make sure that you’re linking your goals to the success criteria
T: What I want you to do right now is set an individual learning goal, OK. So what do you guys have to do to take the story to the next level?

S4: And for next steps we need to add more characterization and more detail to the plot. What do you guys think?

S5: That’s good.

S6: Yeah, but I think we should focus on spacing out the action.

S4: Yeah, it’s going to be one panel per page, so the panels will be bigger and the story will be much easier to follow.

T: So, has the descriptive feedback been helpful?

S5: Since we wrote the story, when we illustrated it, it made sense to us, but people were telling us that some of them were kind of dense.

T: OK.

S5: So if we spread out some of the panels and added more detail it would be helpful for the reader.

Text on screen: SETTING INDIVIDUAL LEARNING GOALS

T: What I’d like you to do right now is to jot down one overall goal for improvement that you need to focus on and then I’ll be back to check up.

S5: I think that the biggest point is still just to break it up into smaller frames so that…

S4: Well, we have to convert this disorganized two pages of rough work into a coherent and good looking final product.

T: Ah, any other points?

S1: Our second goal was to add frames to show the doctor’s – our main character’s – normality. So basically it ties into the success criteria of, um, panels directing readers across the story so that it’s more fluid and the story makes more sense graphically and visually.

T: OK.

S2: And then, um, the last thing we wanted to do was add a quote at the end, because that basically ties into the very first success criteria for the allegory which is “we (the author) we intend to communicate a meaningful message” and so by adding a quote basically we’re nudging the reader forward towards the meaning that we’re trying to convey.

T: Now what I really like about this is you’ve tied in the suggestions for improvement to the success criteria.
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S3: Well, we thought that all our goals are based on the feedback that we got from our peers. What Ashti shared with us after she rotated around the class – that’s exactly what we tied into our goal and related to the…yeah.

Text on screen: Assessment as learning

Assessment as learning empowers students to be full partners who can assess, monitor and regulate their learning. They know where they are going and how to get there; they begin to take ownership for their progress and their learning.

S1: When you get assessed by peers, not only does it give you a broad opinion that you can get useful information out of, but you can choose what advice you want to follow. It allows you to also make judgements yourself.

S2: And all of these steps that we’re going through develop focus. So the success criteria that we looked at and tried to develop, when you have to think about it yourself you have to internalize it, and so I really found the descriptive feedback useful because then you’re not just stuck in your own perspective, but you have other people’s perspectives. But when somebody else looks at your work, they see it, and it’s clear to them.

Text on screen: Assessment For Learning

T: AfL has had a big influence on my classroom in terms of student engagement, because students really feel empowered by developing success criteria and co-constructing things with the teacher.

*When teachers commit to planning assessment with instruction with knowledge and intent, students:*
  - Know what they are learning.
  - Know what it looks like to learn.
  - Know how to assess their learning.
  - Know how to set individual goals.
  - Know how to monitor their progress.
  - Learn to take ownership for their learning
  - Learn to become independent learners

Resulting in increased student motivation and achievement.

Quote on screen: As this learning partnership grows stronger…Teachers and students work together to gather information about the strengths and weaknesses of their performances in ways that inform all learners and all learning in the classroom. Moss and Brookhart (2009)

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