The Continuous Teaching Cycle is an effective way to approach teaching and learning in the classroom. Each cycle focuses on assessment and instruction related to the planning, implementation and evaluation of one lesson....several cycles would form a unit. You will need to follow the Continuous Teaching Cycle for your Classroom Assessment Project.

Let’s take a closer look at assessment and instruction within each part of the cycle:
You should begin each unit of instruction with pre-assessment.

Pre-Assessment is diagnostic in nature. It should inform your planning/instruction and allow you to differentiate instruction to meet the needs of the learners in your class. Assessment data you can use for this purpose comes in many forms.

The pre-assessment process should be guided by the following steps:

**Step 1**

Examine general assessment data. Data from the following sources can help you begin to pinpoint learning needs and strengths (this type of data should be included in Part 1 of your Classroom Assessment Project).

- District progress monitoring assessments (FAIR, AIMS etc.),
- Statewide assessments,
- Standardized tests of cognitive processing, reading, math, writing, etc.
- Formal testing used for eligibility decisions (if testing was completed recently),
Step 2

Examine data from the following sources to help you to further pinpoint learning needs/ strengths, needed accommodations, needed instructional supports and will help you make decisions about differentiating instruction (this type of data should also be included in Part 1 of your Classroom Assessment Project).

- Classroom-based progress monitoring assessments (Informal Reading Inventory, Emergent Reader Assessment, math and reading fluency measures, etc.),
- Assessment data related to IEP goals/objectives,
- Curriculum-based assessments
- Student surveys and interest inventories
- Observations

Step 3

Before you finalize your instructional plans for a unit or instructional sequence, you need to assess students’ knowledge/skills/understandings in relation to the intended instructional objectives of the unit. This type of assessment will help you to refine your differentiated instructional plans and will help insure your instruction is efficient and on target (as emphasized in the document above). You don’t want to waste valuable instructional time teaching something the students have already mastered… and you don’t want to skip over content/skills they may still need help with. Pre-assessment will also help you determine what
strengths the students have in relation to the intended instructional objectives so you can build upon that during instruction.

Read the following short document on Pre-Assessment and Differentiated Instruction:

http://www.ascd.org/publications/educational_leadership/dec13/vol71/num04/Differentiation@_It_Starts_with_Pre-Assessment.aspx

The following sites provide examples of pre-assessment strategies….Remember: You will need to implement a pre-assessment related to your instructional goals/objectives as part of your Classroom Assessment Project:

1. https://sites.google.com/site/lrtsas/differentiation/5-preassessment-ideas
2. http://daretodifferentiate.wikispaces.com/Pre-Assessment

The examples found on the sites above are just a few of the options…..As you complete modules on reading, writing and math assessments, you will be introduced to additional examples.

Stop .....and think.

How could you use these pre-assessments with your students?
What other pre-assessments could you use?
As stated earlier.....You can think of each cycle of the Continuous Teaching Cycle as everything you need to do to plan, implement and evaluate a lesson or instructional sequence. Each cycle (lesson) can last one instructional period or can last several days depending on the objectives, the amount of practice the students require and the type of assessment you use.

**Planning Step 1: Developing Objectives**

The first step in instructional planning is selecting/developing the learning objectives. The pre-assessment data (in the steps above) should help you select standards-based learning objectives to meet the learning needs of your students. When selecting/developing learning objectives for a lesson (one cycle of the Continuous Teaching Cycle), plan with the “end” in mind.....what do you want the students to know/be able to do at the end of the lesson (Continuous Teaching Cycle)? Lesson objectives are typically written in the form: Students will be able to ______________.

Using pre-assessment data to guide the selection/development of instructional objectives will help you identify and target the level of learning that is most appropriate for your students at that time.

**Planning Example:**

For example, if you are beginning a unit on ecosystems and through pre-assessment, you find that your students understand what an ecosystem is and know the basic components that make up an ecosystem....you would then know that they are ready to
move to analyzing or applying their knowledge of ecosystems. Bloom’s Taxonomy or Webb’s Depth of Knowledge Levels are a helpful frameworks that can guide your thinking. If you are not familiar with Bloom’s Taxonomy or Webb’s Levels, review the following sites:

Bloom  -  http://ww2.odu.edu/educ/roverbau/Bloom/blooms_taxonomy.htm


The following sites provide additional verbs categorized by Bloom’s Taxonomy and Webb’s Levels you can use when writing your learning objectives:


http://static.pdesas.org/content/documents/M1-Slide_19_DOK_Wheel_Slide.pdf

Taking the example above about ecosystems, the teacher may decide (based on pre-assessment data) that the students are ready for instruction and practice at the application level (of Bloom’s Taxonomy) or level two of Webb. The teacher looks at the possible verbs in Bloom’s “application” category or Webb’s level two (websites above) and selects the verb: “classify”……The teacher wants the students to be able to apply their current knowledge of ecosystems by classifying them. She knows that it is important for them to be able to develop a framework for thinking about ecosystems and be able to see where different ecosystems fall within the framework. Therefore the objective for the first lesson in the unit will be: “Students will be able to classify various ecosystems based on their characteristics.” Subsequent lessons in the unit will focus on developing a framework based on the students’ classifications. The teacher knows the students are ready for instruction related to the selected objective because of their performance on the pre-assessment (they understand what an ecosystem is and know the basic components that make up an ecosystem). In her lesson, she will provide
instruction on classification and will also provide ample guided and independent practice in classifying ecosystems.

Stop .....and think.

How can you use pre-assessment data to develop learning/lesson objectives that meet the learning needs of your students?

Planning Step 2: Differentiating Instruction

You may be asking yourself, “What if the pretest showed that not all the students understood what an ecosystem was? As you look at your pre-assessment data and begin to develop your instructional objectives and instructional plans, you may realize that your students have many different learning needs related to the instructional content.....OR.... you may want to capitalize on the various strengths and interests of the students during your instruction. One effective way to address various learning needs, strengths and interests is through differentiated instruction.

A Few Examples –

- You find through pre-assessment that you have some students who have mastered a concept/skill and are ready to move on or apply it at an advanced level AND you have students who have
not mastered the concept/skill and need more instruction, practice and/or scaffolding. You would differentiate instruction and assessment within the lesson to address the learning needs of each group of students.

- In math, you find that some students are at the concrete level in terms of a concept or skill and others are ready to work at the abstract level. You would differentiate instruction and assessment within the lesson to address the learning needs of each group of students.

- You have students with varied interests and you want to incorporate those interests to motivate them and spark their curiosity. You would differentiate practice activities and assessment tasks to provide choices around student interests.

- You have students who need a lot of kinesthetic options to learn and practice a skill/concept AND you have students who need more visual supports and scaffolding. You would differentiate your instruction, student practice options and assessment tasks to meet the needs of both groups of students.

There are many, many more possibilities but hopefully, you get the idea. Think about your students and their varied needs, strengths and interests. How will you address those so your instruction and assessment is appropriate for each student?

If you are not familiar with differentiated instruction or would like additional information, go to the following site: http://aem.cast.org/about/publications/2003/ncac-differentiated-instruction-udl.html#.VcjzV0bvChM

I would also recommend the following book on differentiated instruction:

Part of differentiating instruction is identifying the different levels of support and scaffolding each of your students will need. If you are not familiar with the instructional strategy of scaffolding, go to the following site for important information and examples:


Self Check

1. A unit of instruction that is implemented through 10 lessons would have how many iterations of the Continuous Teaching Cycle?
   a. 5
   b. 15
   c. 10
   d. 1

2. One cycle of the Continuous Teaching Cycle can be thought of as everything you need to do to plan, implement and evaluate one lesson.
   a. True
   b. False

3. You pre-assess, plan, implement and evaluate a lesson on multi-digit addition for your Classroom Assessment Project. This constitutes the first of two cycles of the Continuous Teaching Cycle you are required to implement. For the second cycle, your lesson should focus on
   a. Reading – specifically an area of reading identified through Part 1 of the project as an area of instructional need.
   b. The next step in the instructional process for teaching multi-digit addition and take into account the results of the first lesson.
   c. Another area of math.
   d. Further evaluating the students’ understanding of the objectives in the first cycle.

Answers: 1c, 2a, 3b
The next phase of the cycle is implementing instruction. Assessment is an important part of this phase. You should be continually monitoring student comprehension and progress toward the learning objectives throughout the lesson/instructional sequence. You don’t want to wait until the end of instruction to find out that a/many student(s) did not understand the content of the instruction. Assessment during instruction is formative assessment and can take many forms. This type of assessment is termed within-lesson formative assessment. Within-lesson formative assessment will provide you with valuable information to make “on the spot” decisions during instruction such as:

- adjusting the pace of the instruction
- re-teaching concepts when needed
- providing additional clarifications and clearing up misconceptions
- changing grouping strategies
- changing instructional strategies
- providing additional scaffolding

Within-Lesson formative assessment strategies can include:

- Careful observation of each student as he/she interacts with/practices the content.
  Examples: [http://fcit.usf.edu/assessment/classroom/interactb.html](http://fcit.usf.edu/assessment/classroom/interactb.html)

- Questioning (if you are going to use this strategy, you must be sure you are checking the comprehension of each student...not just a few). Examples:
- Response cards (ex.: each student is given a set of cards, each with a letter a, b, c, d. The teacher provides a multiple choice question and students hold up the card that corresponds to the answer). Response cards allow you to use questioning to check the comprehension of the entire class at once.

- Individual white boards or wipe-off slates. This strategy allows for free response rather than responding to a multiple choice question. For example, the teacher can ask the students to write the answer to a math problem, answer a question with a vocabulary word, etc.

- A “higher tech” version of the above are clickers or student response systems.  
http://en.wikipedia.org/wiki/Audience_response

- Additional examples can be found in the “To Prepare” section of the module.

These are just a few examples. ……you may have other types of within-lesson formative assessment you use with your students. I encourage you to share those in this week’s discussion on the discussion board!

🌟 It is important to remember that as you use within-lesson formative assessment to make on-the-spot instructional decisions, you also need to give students feedback on their performance. Research shows that continuous monitoring and feedback supports student learning.

Stop …..and think.
How could you use/modify & use these within-lesson formative assessments with your students?

What other within-lesson formative assessments could you use with your students during instruction?

Are you currently providing students with adequate feedback throughout your lessons in a way that supports and promotes their learning?

The next phase of the cycle is the evaluation of learning outcomes. Evaluation should occur in at least two places: 1) At the end of a lesson/instructional sequence; and 2) At the end of an instructional unit. The assessment at the end of a lesson is considered a formative assessment because it will inform further instruction in the unit. The assessment at the end of a unit is a summative assessment. Formative and summative assessments typically differ in their complexity. For example, a performance-based project that requires a student to integrate and apply what he/she learned throughout the entire unit might serve as a summative assessment for the unit. Whereas, the completion of written paragraph using new vocabulary words from the lesson might serve as an end of lesson formative assessment. Both formative and summative assessments provide valuable information about student learning and can help focus/target further instruction. Summative assessments can also provide documentation of mastery.
Let’s look at each one of these types of assessment more closely:

**Formative End of Lesson Assessment:**

One way to assess student learning resulting from a lesson/instructional sequence is to analyze student work during the independent practice portion of the lesson. Lessons typically include some sort of content presentation (through direct teaching or student discovery), guided practice in which the teacher is guiding/facilitating the practice with feedback, and independent practice where students (individually or in groups) practice what they have learned in the lesson. Teachers sometimes think that each lesson should end in a separate evaluation (in addition to the independent practice). This is not necessary…..as long as the independent practice is directly related to the lesson objectives and is an example of what the student knows/is able to do in relation to the objective…a separate evaluation is not needed!

Specific assessments you can use when teaching pre-reading/reading, math readiness/math, and oral language/written language will be covered in modules 7-9. Additionally, there are some general assessments that you can adapt to just about any area you are teaching. Some examples are below:


<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>What to do with the data</th>
<th>Time required</th>
</tr>
</thead>
</table>
| Minute paper    | During the last few minutes of the class period, ask students to answer on a half-sheet of paper: "What is the most important point you learned today?"; and, "What point remains least clear to you?". | Review responses and note any useful comments. During the next class periods emphasize the issues illuminated by your students' comments. | Prep: Low  
In class: Low  
Analysis: Low |
<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Preparatory effort</th>
<th>In-class effort</th>
<th>Analytical effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory matrix</td>
<td>Students fill in cells of a two-dimensional diagram for which instructor has provided labels. For example, in a music course, labels might consist of periods (Baroque, Classical) by countries (Germany, France, Britain); students enter composers in cells to demonstrate their ability to remember and classify key concepts.</td>
<td>Prep: Med</td>
<td>In class: Med</td>
<td>Analysis: Med</td>
</tr>
<tr>
<td>Directed paraphrasing</td>
<td>Ask students to write a layman’s “translation” of something they have just learned -- geared to a specified individual or audience -- to assess their ability to comprehend and transfer concepts.</td>
<td>Prep: Low</td>
<td>In class: Med</td>
<td>Analysis: Med</td>
</tr>
<tr>
<td>Application cards</td>
<td>After teaching about an important theory, principle, or procedure, ask students to explain at least one real-world application for what they have just learned to determine how well they can transfer their learning.</td>
<td>Prep: Low</td>
<td>In class: Low</td>
<td>Analysis: Med</td>
</tr>
<tr>
<td>Student-generated test questions</td>
<td>Allow students to write test questions and model answers for specified topics, in a format consistent with course exams. This will give students the opportunity to evaluate the course topics, reflect on what they understand, and what are good test items.</td>
<td>Prep: Med</td>
<td>In class: High</td>
<td>Analysis: High (may be homework)</td>
</tr>
</tbody>
</table>
Additional examples (with printable templates) can be found in the “To Prepare” section of the module.

Don't forget, you can use the lesson independent practice as the end of lesson formative assessment. For example, if you taught a lesson designed to increase your students’ use of adjectives to make their writing more descriptive, the lesson objective might be:

Students will be able to demonstrate their effective use of adjectives by writing a descriptive paragraph.

After providing instruction on the use of adjectives in descriptive writing and also providing the opportunity for guided practice…….The end of lesson formative assessment (which also serves as the independent practice) would be a paragraph written by the students on a subject of their choice (such as a favorite sport). You could then evaluate each student’s paragraph by counting the number of adjectives they used, or you could use a rubric to evaluate their effective use of adjectives, etc.

Another thing to consider when designing end of lesson or end of unit evaluations is giving students choices. The following is an excerpt from Integrating Differentiated Instruction and Understanding by Design (Tomlinson & McTighe, 2006) and provides guidance on giving students choices in demonstrating what they have learned in a lesson or unit:

Offer Appropriate Choices

Responsiveness in assessment is as important as it is in teaching. Just as students differ in their ways of taking in and processing information, so do they vary in the manner by which they best show what they have learned. Some students need to “do,” whereas others thrive on oral explanations. Some excel at visual representations; other are adept at writing. To make valid inferences about learning, teachers need to allow students to work to their strengths. A totally standardized, one-size-fits-all approach to classroom assessment may be efficient, but is not “fair,” because any chosen format will favor some students and penalize others.
Assessment becomes responsive when students are given appropriate options for demonstrating knowledge, skills, and understanding. In other words, allow some choices – but always with the intent of collecting *needed evidence based on goals*. Without a clear connection between the desired results and the required evidence, teachers will be stuck assessing apples, oranges, and grapes.

An adaptation of tic-tac-toe provides a structure for giving students choices of products and performances while keeping the end in mind. Figure 5.4 (below) illustrates one example in which the teacher structures product and performance options of various genres by which students could display their content understanding.

The tic-tac-toe format enables teachers to structure the options while giving the students choices. The choice options are flexible. For example, if we want students to write, then we would ask all learners to choose one option from the first column and then one other product/performance from the second or third columns. If we seek an accurate and complete explanation, we might give students greater freedom to choose options from the other columns.

**Figure 5.4**
Product and Performance Tic-Tac-Toe (Version 1)

<table>
<thead>
<tr>
<th>Written</th>
<th>Visual</th>
<th>Oral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research report</td>
<td>Poster</td>
<td>Lesson presentation</td>
</tr>
<tr>
<td>News article</td>
<td>Graphic organizer</td>
<td>Oral presentation</td>
</tr>
<tr>
<td>Information brochure</td>
<td>PowerPoint</td>
<td>Radio interview (podcast)</td>
</tr>
</tbody>
</table>

Figure 5.5 (below) shows a tic-tac-toe chart with greater openness. The “FREE” blocks allow students to propose an alternative source of evidence that suits their strength. For a major project we might allow students to produce three products, picking one from each column.
Regardless of how open-ended the task and how many product performance options are provided, it is imperative that we identify a common set of evaluative criteria. This advice might seem counterintuitive; that is, how can we have the same criteria if we give students different product options? The answer goes back to the logic of backwards design (planning with the end in mind). The general assessment evidence we need to collect is determined by the desired results (lesson objectives). However the particulars of an assessment task may be structured so as to allow student choice as discussed earlier. For example, within a unit on nutrition we want students to show their understanding of a balanced diet. This understanding could be assessed by a task that asks students to explain the concept and offer an illustrative example, and the needed evidence could be obtained in writing, orally, or visually. However, regardless of the response mode, all students would be judged by a rubric containing the following key criteria connected to the content: clear, accurate, and complete explanation of “balanced diet,” with an appropriate example that illustrates the concept. In other words the criteria are derived primarily from the content goal, not the response mode.

Now, we may wish to add student-specific criteria for the needs of particular learners. For instance, a teacher may stress the use of primary resources in research work undertaken by a highly able 4th grader, whereas secondary sources are appropriate for other learners in the class (This illustration assumes that use of primary sources is not a content goal for the unit). Likewise, a teacher may add product-specific
criteria for the different product genres. For example, if a student prepares a poster to illustrate a balanced diet, we could look for neatness, composition and effective use of color. Likewise, if a student made an oral presentation, we could judge her pronunciation, delivery rate, and eye contact with the audience. However, in this example we consider these to be secondary criteria linked to specific products/performances, rather than the key criteria determined by the content goal.

Of course, we want students to do quality work, regardless of what options they select. But more important, we need to employ the criteria called for by the content goals. If we vary these key criteria for different students based on the products they select, then we no longer have a valid and reliable assessment measure.


⭐ Most importantly……you need to make sure you have selected/developed a valid assessment for the lesson. The assessment should:

1. Directly evaluate what the students know/are able to do in relation to the lesson objective(s) and

2. Should be appropriate for the students.

What is meant by “appropriate for the students”? For example…..if you had a student who had a lot of difficulty expressing his/her knowledge through writing, it would not be appropriate to assess the student’s understanding of the lesson content using writing (unless the lesson objective was focused on writing skills). If you used writing as the mode to assess this student, you would not be getting an accurate picture of his/her understanding of the lesson content….it would be clouded by his/her lack of writing skill and the assessment would not be a valid measure of his/her understanding.

When developing/selecting a lesson assessment, ask yourself: What is the best way for the students to show all they know and can do related to the lesson objective?
NOTE: You will need to be able to explain how the formative end of lesson assessments you choose to use in your Classroom Assessment Project are valid.

Summative End of Unit Assessment:

Many of the ideas/concepts above could be used in an end of unit assessment. There are also other ways to differentiate and think about end of unit assessments.

Read the document titled: “Differentiating Assessment” (link is in the module). The document provides examples and ideas for differentiating end of unit summative assessments.

Stop…..and think.

How can you improve your end of lesson evaluation and end of unit evaluations (think about expanding the variety of assessment strategies you use)?

How can you give students choices?

Are you using valid end of lesson/end of unit evaluations?

Think of an upcoming lesson or unit….what assessments could you implement?
The next phase in the Continuous Teaching Cycle is analyzing the student work samples/products/performances resulting from the end of lesson or end of unit assessment. One way to do this is to complete an error analysis. An error analysis is an examination of the errors a student makes (identifying types of errors and patterns of errors) and then developing a hypothesis of why the errors are made. For example, you may notice when examining a student’s work on double digit addition that he made a lot of errors in regrouping. This may be due to a lack of understanding of place value. You can check your hypothesis through student interview or further assessment. Pinpointing the source of errors gives you information you need to plan further instruction. Specific types of error analysis in reading, math and oral/written language are addressed in modules 7-9 and an example of student work analysis (as required in the Classroom Assessment Project) can be found in module 6.

Another way to evaluate and analyze the results of an end of lesson or end of unit assessment is through the use of rubrics. Rubrics provide specific criteria by which student work/products/performances will be evaluated. If you are not familiar with developing rubrics, go to the following site for more information:

http://health.usf.edu/publichealth/eta/Rubric_Tutorial/

If you would like rubric resources (rubrics you can use & rubric generators) go to the following sites:

http://www.teach-nology.com/web_tools/rubrics/gen/


http://www.uwstout.edu/soe/profdev/rubrics.shtml

http://www.rubrics4teachers.com/archive.php
Next…..you need to teach your students how to use/understand rubrics.

Read the article titled “Teaching Students How to Use Grading Rubrics (link to the document is in the module)

Moving on……..

Once you have analyzed all of the assessment data gathered through the end of lesson or end of unit assessment, you need to reflect. Questions to ask yourself:

1. What do the assessment results tell me about student learning needs and strengths?
   - What further instruction is needed? How will I provide it?
   - What additional student supports or accommodations are needed?
   - What additional things (such as student strengths or interests) do I need to consider when planning the next round of instruction?

2. What do the assessment results tell me about the effectiveness of my instruction and assessment strategies?

3. What changes do I need to make to my instruction and/or assessment strategies?

Once you have answered these questions, you are ready to begin the next iteration of the Continuous Teaching Cycle by engaging in the planning of your next lesson or unit based on the assessment results, analysis and your reflection.

You will need to follow all of the steps outlined above (in all portions of the CTC) for your Classroom Assessment Project. You will complete two cycles…..
1st cycle (lesson #1) – pre-assess, plan, implement instruction (with formative assessment during instruction), evaluate learning outcomes (formative assessment at the end of the lesson), analyze and reflect.

2nd cycle (lesson #2) - Use end of lesson assessment (from cycle 1) as your pre-assessment, plan, implement instruction (with formative assessment during instruction), evaluate learning outcomes (formative assessment at the end of the lesson), analyze and reflect, make instructional decisions/recommendations for the next cycle.

You would then continue your instructional unit by going through the cycle for each lesson in the unit. At the end of the unit you would use a summative assessment that assesses student knowledge/skills related to all the instructional objectives in the unit. The summative assessment should require the students to apply and tie together everything they learned in the unit.