

Aligning Lessons to College and Career Readiness (CCR) Standards

Module 3: Revising and Improving Math Resources and Lessons



Primary goal




Lessons aligned to the CCR standards

- Strengthen existing lessons
 - Math Tool #5: Lesson Revision Template
- Develop new lessons
 - Math Tool #6: Checklist to Guide Mathematics Lesson Development

What you need



- An Understanding of the Key Shifts
- CCR Content Progressions [Math Tool #2]
- Standards for Mathematical Practice [Math Tool #3]
- Lesson Revision Template [Math Tool #5]
- Checklist to Guide Mathematics Lesson Development [Math Tool #6]
- A Lesson Plan [optional]



Part 1


Using Math Tool #5: Lesson Revision Template

Pennsylvania Professional Development System 4

Questions 1 - 4: Introduction questions

1. Original source (e.g., publisher, lesson, page number) of this lesson:
2. Intended instructional level of the lesson:
3. Brief description of how the lesson should be used (e.g., as a replacement lesson, to fill specific gaps):
4. Suggested time to spend on the lesson (e.g., number of learning sessions):

Pennsylvania Professional Development System 5



Criterion 1: Focus

Focus on the Major Work of the Level
(MWOTL)

Pennsylvania Professional Development System 6

Question 6: Address focus by:



- Identifying the targeted content standards for the lesson.
- Comparing those standards to the Major Works of the Level (MWOTL) identified in CCR Content Progressions [Math Tool #2].
- Recognizing whether the lesson emphasizes minor concepts.
- Determining if major concepts that should be present are missing from the lesson.
- Making sure that the tasks, problems, activities, etc., address the targeted standards of the lesson.

Criterion 1: Focus

Standards for Mathematical Practice



Question 7: Mathematical Practices in action



Use Math Tools #3 & #3A, Standards for Mathematical Practices and Look-Fors.

- How might students employ a specific mathematical practice when solving a problem or completing a task?
- Describe possible instructional strategies to help students learn how to apply the targeted practices.

Address the practices



Identify ways that you can apply any of the Mathematical Practices by:

- Including problems and tasks in the lesson that are designed to support Standard(s) for Mathematical Practice.
 - Don't overdo it! Most lessons shouldn't target more than four (4) Mathematical Practices.
- Adding guidance as to how to observe or assess the students' application of the targeted practices.

Summary: Focus



MWOTL

- Identify target standards.
- Is it focused on major or supporting standards?
- Could other standards be addressed?
- Do student tasks relate to targets?

Math Practices

- Identify opportunities for math practices.
- Provide instructional strategies, if needed.
- Provide ideas for observing and/or assessing student utilization of practices.

Question 8 and 9: Career pathways preparation



Question 8: Identify skills from the Foundation Skills Framework that are targets for the lesson.

Question 9: How will the lesson relate to one or more appropriate career pathways?



Criterion 2: Coherence

How does this lesson relate to other lessons within your curriculum?

Questions 10 and 11: Addressing coherence



Question 10: Identify what the student needs to know or do in order to be successful.

Question 11: How the lesson relates to the level as a whole, including:

- Where the lesson fits best in the learning sequence.
- How the contents of the lesson support the success of future lessons.

Address coherence by:



- Ensuring instruction guides the students to:
 - Make connections between prior learning and the content of the lesson.
 - Make connections to future learning, when appropriate to do so.
- Use **Math Tool #2**, the CCR Progressions, to help address coherence.



Criterion 3: Rigor

Lesson includes a balance of procedural skills, conceptual understanding, and application.



Question 12: Rigor

Here are some things to look for in a lesson that address rigor:

- Tasks or activities to improve students' **conceptual understanding**, if appropriate.
- A practice set to improve students' **procedural skill and fluency**, if appropriate.
- Tasks or problems to improve students' ability to **apply the mathematics concepts** learned in the lesson in new situations.



Address rigor by:

Making sure the lesson reflects the targeted standards. This could include one or more of the following:

- Building strong conceptual foundation for required mathematical procedures and thinking.
- Including enough practice to attain fluency for core calculations and mathematical procedures.
- Including challenging applications of the concepts that students are learning, both mathematical and contextual.

Question 13: Notes to instructors



Add notes for a teacher that is interested in using the lesson. Things you might include:

- Identifying opportunities to observe the relevant Standards for Mathematical Practice.
- Adding instructions to clarify connections to past or future learning.
- Providing scaffolding information for students who may need extra assistance.
- Suggesting rearrangement of lessons to improve their sequence and flow.

Part 2

Using Math Tool #6: Checklist to Guide Mathematics Lesson Development

Questions 1 – 6: Checklist to Guide Mathematics Lesson Development



Answer the first six questions of the Checklist to Guide Mathematics Lesson Development.

- Question 1:** Learning goals
- Question 2:** Major works of the level
- Question 3:** Workplace contexts for the lesson
- Question 4:** Mathematical Practices
- Question 5:** Coherence
- Question 6:** Rigor

Question 7: Math vocabulary



Identify key mathematical terms, including examples that promote understanding.

Can have a tie-in to mathematical practices:

- **MP 1:** Make sense of problems and persevere in solving them.
- **MP 3:** Construct viable arguments and critique the reasoning of others.
- **MP 6:** Attend to precision.

Question 8: Discussion questions



Identify discussion questions:

- When might they occur?
- Sample responses?

Can have a tie-in to math practices:

- **MP 3:** Construct arguments and critique reasoning of others

Can be a good way to gauge conceptual understanding:

- Ask why ...?

Question 9: Checks for understanding



Consider these items when answering question 9:

- Formative and summative assessment
- Formal or informal assessment
- Necessary answer keys and rubrics
- Checks for understanding connect to goals of the lesson

To summarize...



Alignment to CCRS:

- Focus
- Coherence
- Rigor

Math Tools #5 & #6:

- Both are tools to help align instruction
- Both are tied to key shifts

Congratulations!



You have completed Module 3

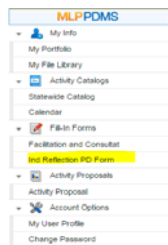
Aligning Lessons to College and Career Readiness (CCR) Standards

Revising and Improving
Math Resources and Lessons

The **Individual Reflection Professional Development Form** is available to Division-funded staff to document completion of this on-demand PD activity. Completion of this form is optional.



1. Log into My Learning Plan (www.mylearningplan.com)
2. Click on **Ind Reflection PD Form**.
3. Click on **Fill-in Form**.
4. Complete all fields and click on **Save Log Entry**.
5. Click on **Submit log entries for approval**.
6. Administrators will be required to approve the form before staff will see the activity listed in their My Learning Plan portfolio.



You have successfully completed this module.
Please download any resources before exiting the lesson.
