# Louisiana Department of Education
# Mentor Teacher Training

Module 6:
Purposeful Planning and Setting New Goals

Secondary Mathematics Cohort

October 2019

Facilitated by Learning Forward

# The Mentoring Cycle



Content knowledge and pedagogy; classroom management techniques

ANALYZE OBSERVATION DATA

CONDUCT OBSERVATIONS

SET GOALS

DIAGNOSE
What do my mentees need?

REFLECT

MEASURE PROGRESS
How am I going to figure out if they got better?

COACH
How am I going to help my mentees get better?

ONE-ON-ONE DEBRIEFS

DIFFICULT CONVERSATIONS

PLAN FOR INTERVENTIONS

BUILD RELATIONSHIP

SET NEW GOALS

MODEL BEST PRACTICES

Content knowledge and pedagogy; classroom management techniques

Content knowledge and pedagogy; classroom management techniques

CO-TEACHING

## Mentor Training Course Goals

Mentors will:

- Build strong relationships with mentees.
- Diagnose and prioritize mentee's strengths and areas for growth.
- Design and implement a mentoring support plan.
- Assess and deepen mentor content knowledge and content-specific pedagogy.

## Module 6 Outcomes

- Use tools for purposeful planning to develop a common understanding of grade-level/course standards to align teaching and learning using EngageNY and other Tier 1 resources.
- Investigate select standards from the domains of Ratios and Proportional Relationships and Functions to determine how extending proportional reasoning to functions progress across grades 6-9.
- Set new goals and determine future plans for intervention.

## Module 6 Agenda

| **Morning (8:30-11:30 a.m.)** | **Afternoon** |
|---|---|
| Welcome and outcomes | Setting new goals |
| Extending proportional reasoning to functions | Connection to assessments |
| | Wrap-up |
| Exploring vertical alignment in the LSSM | |
| Purposeful Planning | |

## Agreements

**M**ake the learning meaningful

**E**ngage mentally and physically

**N**otice opportunities to support the learning of others

**T**ake responsibility for your own learning

**O**wn the outcomes

**R**espect the learning environment of self and others

**Deepening Mathematical Content Knowledge Exploring Coherence in the LSSM**

**Extending Proportional Reasoning to Functions**

# Buttons Tasks

Engaging in the mathematics

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*6th Grade – 6.EE.C.9*

Gita plays with her grandmother's collection of buttons.
She arranges them in rows.
The first 3 patterns she has created are shown below.

|  | Pattern 1 | Pattern 2 | Pattern 3 | Pattern 4 | Pattern 5 |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| Number of Buttons |  |  |  |  |  |

Draw patterns 4 and 5 and then complete the table.

Create a graph of this problem. Explain your choice of the independent and dependent variables.

Write an equation that represents this situation. Explain how you created your equation. Don't forget to define the variables you use.

Gita's grandmother asked her to create the 7th pattern. If Gita has 30 buttons, will she have enough to create it? Explain how you arrived at your answer.

Engaging in the mathematics

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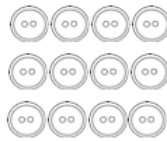**7ᵗʰ Grade – 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2d**
Gita plays with her grandmother's collection of buttons. She arranges them in rows.
The first 3 patterns she created are shown below.

Pattern 1                 Pattern 2                 Pattern 3                 Pattern 4                 Pattern 5

Draw patterns 4 and 5.

Create a table and graph showing the same relationship as developed in the patterns above.

Gita's friends, Harry and Jamie, are arguing whether this is a proportional relationship.

Harry said:
"This is a proportional relationship because the numbers go up the same every time."

Jamie said:
"This is not a proportional relationship because there is not a pattern #0. So the graph will not start at the origin.

Gita noted that even her friend who is correct didn't get it quite right. Which of Gita's friends is right and what can you add to his reasoning?

Write an equation to represent this situation. Don't forget to define your variables.

What is the constant of proportionality and how is it represented in the table, graph, and equation that you created?
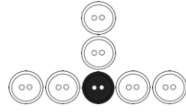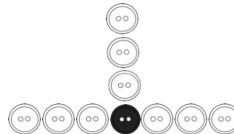
### 8th Grade – 8.F.3, 8.F.4

Gita plays with her grandmother's collection of buttons. She arranges them in patterns. The first 3 patterns she has created are shown below.

Pattern 1              Pattern 2              Pattern 3              Pattern 4

Draw the 4th pattern.

How many white buttons does Gita need for patterns 6 and 8? Explain how you determined this number.

How many buttons will Gita need altogether for pattern 11? Defend your answer by showing this solution in both an *input–output* table and graph.

Construct a function rule for the "nth" pattern.

Is the function rule a linear pattern? Explain your reasoning.

What is the initial value for this rule? What is the rate of change? How are these two values shown in the table, graph, and rule?
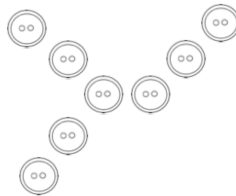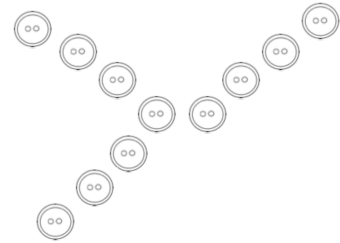
### HS – F-IF.2, F-LE.1b,c, F-LE.2

Gita plays with her grandmother's collection of buttons. She arranges them in patterns. The first three patterns she has created are shown below.
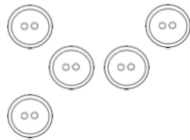


Pattern 1                                    Pattern 2                                    Pattern 3

Represent Gita's data from the buttons as a table of values and graph.

Using function notation, create an explicit rule that could be used to find the number of buttons needed for any pattern, *p*. Using this rule, how many buttons would she need to create pattern 12?

What does $f(10) = 32$ mean in the context of this situation?

What if Gita started with Pattern 1, but doubled the number of buttons she uses in each subsequent pattern. Draw what the next two patterns would look like.

Create a new rule and graph for this situation. How do these compare to Gita's original rule and graph?

# Coherence across the grades

**In mixed-grade-level groups,**

- Share your grade-level task, starting with grade 6 and move in order to Algebra I.

- How does the progression of the math in these tasks exemplify the coherence in the standards related to the idea of extending proportional reasoning to functions from grades 6 to 9?

Mentor Teacher Secondary Math  Module 6

**Notes:**

**Extending Proportional Reasoning to Functions**

**Purposeful Planning of the EngageNY Curriculum**

How can we make instructional decisions that best meet the intent of the standards and the needs of all students?

## Collaborative planning

### What is collaborative planning?

- Working and learning together to plan instruction (including lessons, units, assessments, and activities) focused on building the intended learnings described by the standards.

- Discussing, interpreting, and refining curriculum resource materials together in order to use them to best meet students' needs in their learning.

Mentor Teacher Secondary Math  Module 6

| Why collaborative planning? | What do we want to achieve in collaborative planning sessions? | Pitfalls of unstructured planning sessions |
|---|---|---|
|  |  |  |

# Planning Guide

Collaboration, and the use of cyclical, reflective processes among teams of teachers, generates greater results than does individual effort alone. The planning process, when implemented with fidelity, leads to increased professional expertise, alignment of system competencies, sustainability, and success.

## Establish the focus for collaborative planning

*Purpose*:  Select standards to be discussed. Establish conversation expectations, norms, and desired outcomes. Participants may benefit from having read the standards and gathering curricular resource materials prior to the planning session.

*Time estimate*: 2 to 3 minutes

*Actions:* Use the *Louisiana Guide to Implementing Eureka Math*, the *Eureka Math* introductory material, and/or the relevant rigor document (see *A Guide to Rigor in Mathematics 2.0*[1]) to determine the targeted standards.

## Look-fors

- Did the group…
    - **establish conversation expectations, norms, and desired outcomes?**
    - **select relevant and timely standard(s)?**

*Notes:*

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[1] The *Louisiana Student Standards for Mathematics: A Guide to Rigor in Mathematics 2.0* is available at https://www.louisianabelieves.com/docs/default-source/year-long-planning/k-12-lssm-alignment-to-rigor.pdf. This document (name in link: "K-12 LSSM Alignment to Rigor") as well as the individual rigor documents for each grade level—e.g., "Kindergarten LSSM Alignment to Rigor," "Grade 1 LSSM Alignment to Rigor," and so on) can be downloaded via this web page: https://www.louisianabelieves.com/resources/library/k-12-math-year-long-planning

## Foundational study of the standards

***Purpose*:** Participants will collaboratively deepen their understanding of what students should know and be able to do based on the *Louisiana Student Standards for Mathematics*.

***Time estimate:*** 10 to 15 minutes

**Process**

- Analyze the targeted standard(s)—examine Introduction, Content Standard, Cluster heading, Domain, and Conceptual Category—to ensure a common understanding of the content.

- Identify related standards in the grades/courses before and after the standard(s) being studied. (Tip: use the LSSM Remediation Guides or Coherence Map.) Describe how the focus grade-level or course standards differ from the adjacent standards.

- Describe the components of rigor addressed by the targeted standard(s). Use the rigor document (*A Guide to Rigor in Mathematics 2.0[2]*)) to better understand the standard(s).

- Develop clear, specific, measurable statements that describe what students do to demonstrate their knowledge. (e.g., success criteria, learning targets/objectives, student-friendly "I can…" statements).

## Look-fors

- Did the group…

  - **determine key learning expected from the standard(s)?**
  - **identify specific strategies called for by the standard(s)?**
  - **identify expected prerequisite skills or strategies from the previous grade-level or course standards?**
  - **determine new strategies, skills, or key content being introduced?**
  - **identify strategies or skills being finalized in this grade or course?**
  - **determine what students should know and be able to do to demonstrate (regarding content, practices, and rigor) that they have learned the mathematics?**

*Notes:*

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## Bridge to lesson planning

*Purpose:* Participants will connect their understanding of the standards to *Engage NY* materials so they can make instructional decisions that meet the intent of the standards and the needs of all students.

*Time estimate:* 20 to 30 minutes

**Process**

- Choose appropriate lesson(s).
  - Use the *Louisiana Guide to Implementing Eureka Math* to identify whether other lessons address the same standard(s). Preview these lessons to clarify which aspects of the standard(s) each lesson addresses.
- Study the lesson(s).
  - Review the "Concept Development" or "Classwork" piece and "Student Debrief" or "Closing" piece. Work through every mathematics problem.
- Annotate the lesson(s).
  - Determine what problems or sets of problems, if any, should be omitted, expanded, or adjusted. Determine whether instructions for problem sets require any revisions to better meet the intent of the standards. Think through the correct answers and some of the strategies that students might use to get to these answers.
  - Determine strategies for instruction for each part of the lesson(s): whole-class (WC), group work (GW), individual work (IW).
  - Determine instructional moves needed to ensure student engagement. Include consideration of appropriate tools, manipulatives, and opportunities for student discourse.
  - Think through potential "hot spots," or places where students are likely to get stuck or have misconceptions. Determine a plan to probe student thinking and support student learning without lowering cognitive demand on the students.
  - Determine how the lesson could best be facilitated to bring out the identified Standards for Mathematical Practice (SMPs).
  - Identify desired reflections and possible opportunities for clarification to use during the "Student Debrief" or "Closing."
  - Determine how you will support students who miss the exit-ticket items and how you will extend learning for those who master the content.

## Look-fors

- Did the group…
  - Determine whether the problems in the lesson provide students opportunities to meet the identified skills and strategies necessary to achieve the intent of the standard(s)?
  - Determine instructional strategies and moves needed to make the learning more engaging and meaningful for students?
  - Identify potential student misconceptions?
  - Determine possible strategies that students might use to solve problems?
  - Identify how the Standards for Mathematical Practice will manifest in the lesson?
  - Plan to support students with unfinished learning?
  - Plan to increase the complexity, open-endedness, or level of thinking for students who master the content?

## Collaborative planning conversation

**Observe the group using the Planning Guide tool to:**

- establish the focus for collaborative planning.
- conduct a foundational study of the standards.

**What did the team accomplish in their conversation?**

**LDOE K-12 Planning Resources**



# https://www.louisianabelieves.com/resources/library

- Teacher Companion Document

- Remediation Guide

- Coherence Map - https://achievethecore.org/coherence-map

**Planning Guide Tool Reflection**
- What important ideas surfaced in your grade-level study of the standards?

**Preview the Bridge to Lesson Planning section**
- Where is this conversation headed?
- How well-prepared do you feel to move into planning lessons aligned to the standards?

**How might this be a valuable tool for mentors and mentees?**

# Planning Guide Tool and the Mentor Cycle
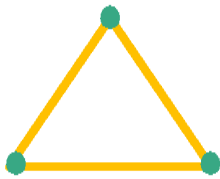
**3** Points of learning you remember about the Planning Guide tool

1.

2.

3.

**2** Ways I can use the Planning Guide tool as part of the mentoring cycle

1.

2.

**1** Idea still circling about the Planning Guide tool and it's use in the mentor cycle.

30

1.

17

# Bridge to lesson planning
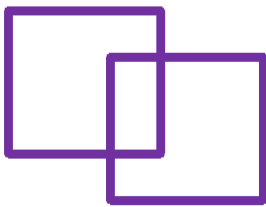
## Foundation Study of the Standards

EngageNY lessons for our practice:

- Grade 6: Module 4, Lesson 32 (6.EE.C.9)
- Grade 7: Module 4, Lesson 7 (7.RP.2c)
- Grade 8: Module 5, Lesson 8 (8.F.A.3)
- Algebra 1: Module 3, Lesson 22 (A1_F-LE.A.2)

## Reflecting on purposeful planning

How does this process create a "bridge" between the standards and the instruction?

In what ways might this process impact teaching and learning in your classroom?

Your work as a mentor?

**Points to Ponder**

What specific instructional strategies did you focus on?

How did your conversation help determine a plan to fill gaps in learning?
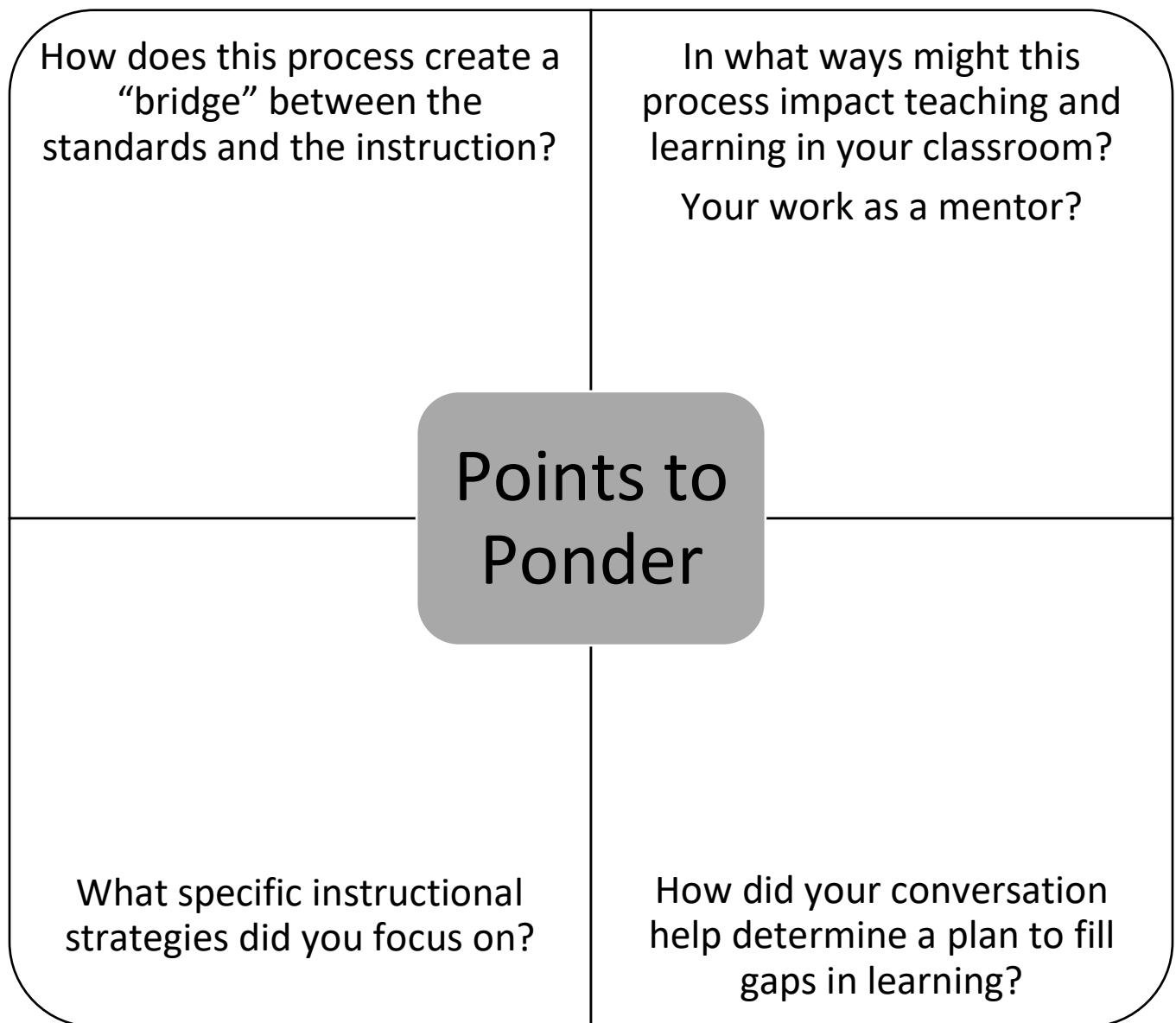
**Module 6 Afternoon Outcomes:**

- Set new goals and determine future plans for intervention

**Set New Goals: 3 Key Components**

- Examine all data

- Identify progress

- Determine next steps

**Examine All Data** (may include any of the following)**:**

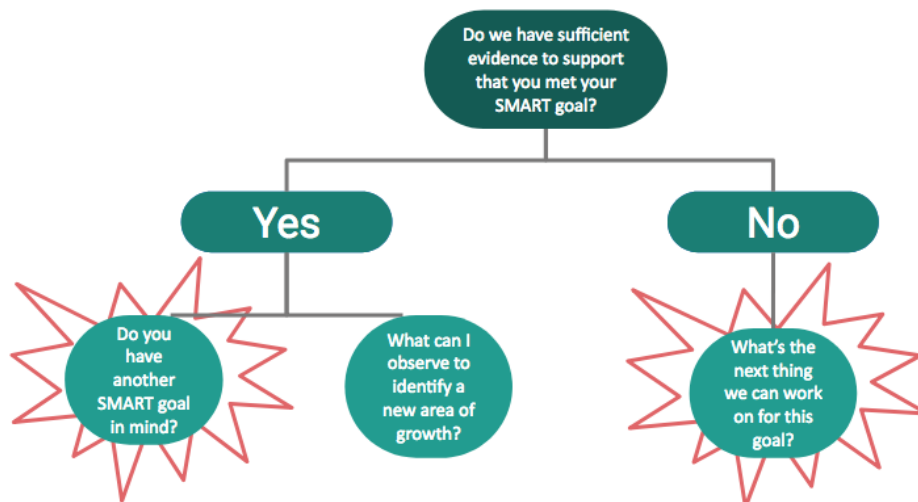- Initial observation and one-on-one debrief notes
- Model teaching look-fors checklist and debrief notes
- Co-teaching debrief notes
- Student work
- Student data
- Additional observations and feedback

**Identify Progress**

- Use professional judgement
- Refer to Tier 1 curriculum guidance
- Possibilities:
    - Student data collected shows obvious progress, ready to try something new
        - 80% achieved is usually sufficient
    - Progress has been slow, may not be the right thing to target, needs a new goal
    - Needs more direction and support on this goal
    - Needs support on something not addressed by current goal

**Determine Next Steps**

- On your own, determine next steps
- Set up "check-in" with your mentee
- During check-in:
    - Review new data
    - Identify progress
    - Determine next steps in your work together

# Set New Goals Guiding Template

## Step One: Examine All Data

| Guiding Questions | Analysis Notes |
|---|---|
| What data are we looking at? | |
| What is being measured in each assessment? | |
| How did various populations of students perform? Are all students being positively impacted? | |
| What areas of student performance are demonstrating the goal is or is not being met? | |
| Do patterns exist in the data? | |
| What confirms what we already know? | |
| What surprises us? | |

**Step Two: Identify Progress**

| Guiding Questions | Analysis Notes |
|---|---|
| Has the teacher made progress toward their goal? What evidence exists to support that? | |
| What additional evidence, if any, is necessary to show adequate progress toward the goal? | |
| Does enough evidence exist to support that the teacher has adequately met their goal? Describe the evidence. | |
| Could the teacher benefit from continued work on this goal? | |

**Step Three: Determine Next Steps**

| Suggested Guiding Questions for Discussion | Planning Notes (mentor completes prior to conversation) | Meeting Notes |
|---|---|---|
| **Step One: Examine All Data** | | |
| Your SMART goal is ___. How do you think it's going in meeting your goal? | | |
| What actions/supports have best supported you in working on this goal? | | |
| I brought some data from our time working together including _____. What evidence here exists to support your work on this goal? | | |
| **Step Two: Identify Progress** | | |
| How do you feel about the progress you've made toward meeting your SMART goal? | | |
| What, if any, additional work could be done in continuing to address this SMART goal? | | |

| Step Three: Determine Next Steps | | |
|---|---|---|
| Do we have a sufficient amount of evidence to support that your SMART goal was met? | | |
| (If the answer to the above question is no) What next steps should we take to continue working on this goal? I.e. another model or co-teach, observation with feedback, etc. | | |
| (If the answer to the above question is yes) Do you have another focus area in mind that we can set a new SMART goal for? | | |
| (If the answer to the above question is yes) Would you like to participate in a new observation and see what new areas to grow in come through as a result? | | |

**Example Scenario SMART Goal**

*The teacher will engage all students in meaningful mathematical discourse evidenced by using correct academic mathematics vocabulary and aided by sentence stems as measured by teacher observations during classroom discussions.*

**Practice Scenario SMART Goal**

*During the next five lessons, the teacher will actively monitor students' participation to ensure students maintain focus and move forward in their understanding of the mathematics involved as measured by teacher observations while students work individually, in pairs, or in small groups.*

# Let's Practice: Set New Goals Guiding Template

## Step One: Examine All Data

| Guiding Questions | Analysis Notes |
|---|---|
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| (If the answer to the above question is yes) Would you like to participate in a new observation and see what new areas to grow in come through as a result? | | |

## Set New Goals: Key Takeaway

The mentor monitors data on mentee progress toward SMART goal to determine when it is appropriate to new goals.

## Module 6: Key Takeaway

Mentors can most effectively support mentees through ongoing, repeated mentoring cycles that base goals and success on observable goals.