Three Reads

(Math Language Routine 6 – MLR 6)

Background

The eight Math Language Routines, or MLRs, are part of the Illustrative Math® (IM®) K-12 Math curriculum. This curriculum has been adapted for adult learners and can be accessed on the PA Adult Education Resources website. The MLRs provide the chance for students to reason, communicate, and strengthen their understanding in a collaborative and supportive environment.

Zwiers et al. (2017) identify four design principles that guide mathematical language routines:

- Supporting sense-making
- Optimizing output
- Cultivating conversation
- Maximizing linguistic and cognitive meta-awareness

For more information, visit Math Language Routines: Discourse with a Purpose.

Purpose

This MLR supports the development of mathematical thinking, ensuring that students know what a problem is asking them to do.

Goal

- Students use mathematical language, reading comprehension, and conversation to unpack a mathematical problem and find a solution.

Audience

- Intermediate to advanced English learners
- English learners transitioning to adult basic education classes
- Adult basic education learners

Supported Standards for Mathematical Practice

- **Standards for Mathematical Practice 1**: Make sense of problems and persevere in solving them.

Materials

- A mathematical problem focused on a current topic or skill
- Student template

Procedure

1. Provide a mathematical problem.
2. First read (individual) – Understand the context.
    a. Describe the problem in your own words.
    b. What is happening in the problem?
3. Second read (individual, pairs, small/large group) – Interpret the question.
    a. What are we trying to find out about this problem? What is the question?
4. Third read (pairs, small/large group) – Identify the important information.
    a. What numbers or quantities are used in this problem?
    b. Which numbers or quantities help us to answer the question?
    c. What other information is important? Is there information we don't need?

Tips for Using this Routine

- Model the routine by demonstrating the process.
- Model how to ask for and share information, clarify questions and information, and collaborate to find a solution.
- Display the problem visually.
    - Hide the numbers during the first read.
    - Hide the question until the final read.
- Emphasize during reads one and two that students should *not* solve the problem.
- Prepare by "doing the math." This will help you consider the different ways students may see the problem.
- Use sentence starters to support each reading.
- If you would like support with implementing this routine from an instructional coach, email dschauer@tiu11.org.

Reference

Zwiers, J., Dieckmann, J., Rutherford-Quach, S., Daro, V., Skarin, R., Weiss, S., & Malamut, J. (2017). *Principles for the design of mathematics curricula: Promoting language and content development*. Understanding Language/Stanford Center for Assessment, Learning, and Equity. https://ul.stanford.edu/sites/default/files/u6232/ULSCALE_ToA_Principles_MLRs__Final_v2.0_030217.pdf ul.stanford.edu