

Mathematically Productive Instructional Routines (MPIR)

Created by *Barbara Soots* **Dec. 2, 2021**

<https://www.oercommons.org/courseware/lesson/78969>

Author: [Barbara Soots](#), [Washington OSPI OER Project](#), [Washington OSPI Mathematics Department](#)

Subject: Mathematics

Level: Preschool, Lower Primary, Upper Primary, Middle School, High School

License: [Creative Commons Attribution](#)

Language: English



Overview

Mathematically Productive Instructional Routines (MPIR) are short (10ish minutes), daily exercises aimed at building number sense. These six different MPIR are part of the [Mathematically Productive Instructional Routines](#) collection from the Washington Office of Public Instruction and the Washington Association of Educational Service Districts.

Mathematically Productive Instructional Routines (MPIR)

What are they?

Mathematically productive instructional routines are short (5–15 minutes) learning activities that teachers and students engage in together on a consistent basis so that the activity becomes routine. They have a regular structure for interaction among teachers and students, and can be used across content and grade levels for a variety of instructional objectives (Lampert, 2010).

Why are they important?

A number of researchers have recently begun to identify certain instructional routines, aligned with the rigor of the State Standards and the NCTM Mathematics Teaching Practices, that “can significantly affect the quality of teaching and subsequent learning of students” (Heibert & Morris, 2012). *Mathematically productive* instructional routines make students’ mathematical thinking visible and require teachers to pay attention to, build on, and respond to student thinking. Using such routines frequently can support the development of a classroom culture in which sense-making is at the heart of all activity, and mistakes are “expected, respected, and inspected.”

Click on the image or title below to learn more about the routines:



[Clothesline](#)



[My Favorite kNow](#)



[Notice and Wonder](#)



[Number Talks](#)



[Ten Minute Talk](#)



[Which One Doesn't Belong](#)

Attribution and License

Attribution

- Clothesline photo by [Erik-Jan Leusink](#) on [Unsplash](#)
- Shape image by OSPI.
- Children and teacher photos by Allison Shelley for American Education: [Images of Teachers and Students in Action](#) | [CC BY NC](#)

License



Except where otherwise noted, this work by the [Washington Office of Superintendent of Public Instruction](#) is available under a [Creative Commons Attribution license](#). All logos and trademarks are property of their respective owners.

This resource may contain links to websites operated by third parties. These links are provided for your convenience only and do not constitute or imply any endorsement or monitoring by OSPI.