Ohio | Department of Education

Mathematical Practice Virtual Professional Development Series
Math Practice 5: Use Appropriate Tools Strategically
Facilitation Guide

Presenter: Annika Moore

Intended Use

The facilitation guide is intended to be used by educators when viewing the voice over recording of Math Practice 5: Use Appropriate Tools Strategically. Districts and schools are encouraged to use this resource as part of a professional development series that spans all 8 Standards for Mathematical Practice.

Viewing the recordings of the Math Practice sessions can be done in any order. Viewing the recording is encouraged to be done in groups, but it can be done individually. To get the full benefit of the professional development series, educators should engage in the tasks and participate in local discussions on the Mathematical Practice.

Reproducing the Facilitation Guide

If you would like to make copies of any portion of this facilitation guide or accompanying PowerPoint presentation, please credit the Ohio Department of Education.

During Facilitation: Discussion Questions

Pause the recording at the times indicated in the recording and have discussions in smaller groups and then in the larger group.

Discussion Question:

Slide 9

- What experiences **could** make a student successful?

Slide 16

- Discuss “struggle” – what does it mean when talking about “problem solving”?
  If it is something you can solve right away – it is not a problem!!!
  Problem solving is messy and you need to try, try again. . .

Slide 18-19

- Where are the manipulatives?
- Who chooses what manipulative to use?

Slides 20 - 24

- Which manipulatives are used in middle and high school?
- Do we use manipulatives in middle and high school?
- Which tools could be used to make a student successful?

Slide 26

- Which tools could be used to help students **understand**?

Slide 32

- What does Math Practice 5 look like at your grade/course and those before and after?

Slides 36 -37

- Can they make sound decisions about when each of the tools might be helpful?
- What Strategies Do Students Use When They Find Themselves in a Cul-de-Sac?

Slide 38

- What is the difference between “scaffold” and “support”?
- Which do we use in the math classroom? Why?

Slides 39-41

- How do you estimate these?

Links to Documents Referred to in the Session

Slide 10: Standards for Mathematical Practice page

Slide 18: 3rd Grade video – choosing tools

Slide 27: VNPS webpage

Slides 28-32

Peruse progressions on SMP 5 around the courses/grades you teach (SMP 5 starts on page 14)

Link to progressions

Slide 42: Esti-Mystery

Slides 47-52: Link to folder with Resources

Resource Links

Ohio Department of Education Documents

- Standards for Mathematical Practice
- Kindergarten - Grade 5
- Grades 6-8
- High School

University of Arizona Progressions

- Standards for Mathematical Practice: Commentary and Elaborations for K-5
- Standards for Mathematical Practice: Commentary and Elaborations for 6-8

Other National Resources

- Inside Mathematics
- Illustrative Mathematics
- Robert Kaplinsky: Math CCSS Math Practices Readable

Conversation Notes: