



PD · ON · DEMAND

MATHEMATICS



THE STRUGGLE IS REAL

The 5 Types of Mathematical Representations



[Note Page for Direct Instruction Video](#)



[Direct Instruction Video](#)



Additional Resources:

- [MS CCRS for Mathematics](#)
- [Use and Connect Mathematical Representation](#)

Physical, Visual, and Symbolic Representations



[Note Page for Direct Instruction Video](#)



[Direct Instruction Video](#)



[Example and Activity](#)



Additional Resources:

- [Concrete-Representational-Abstract Instructional Approach](#)
- [Glossary of Manipulatives](#)
- [Glencoe Virtual Manipulatives](#)

Verbal Representations



[Note Page for Direct Instruction Video](#)



[Direct Instruction Video](#)



[Example and Activity](#)



Additional Resources:

- [Never Say Anything a Kid Can Say!](#)
- [Understanding Mathematics Through Grappling and Discourse](#)
- [Middle School: Engaging in Mathematical Discourse](#)

Contextual Representations



[Note Page for Direct Instruction Video](#)



[Direct Instruction Video](#)



[Example and Activity](#)



Additional Resources:

- [Problem-Centered Mathematics Teaching](#)
- [Illustrative Mathematics Tasks](#)
- [Inside Mathematics Tasks](#)

For additional questions regarding the content of this PD on Demand, please contact:

- Kimberly Price (K-5 Math PDC) at kiprice@mdek12.org
- Kandra Wilkins (6-12 Math PDC) at kwilkins@mdek12.org
- Tommisha Johnson (K-12 State Math Director) at tjohnson@mdek12.org

To request professional development for your school or district, please contact Amy Pinkerton at apinkerton@mdek12.org.