



Lights! Camera! Principles to Action!

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July 16, 2018



Lights! Camera! Action!

Today's Facilitators



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About the Dana Center

— Equity — Access — Excellence —

Dana Center by the Numbers



Dana Center by the Numbers

By the close of 2017, the Dana Center had contributed to the **implementation of math pathways** in higher education systems, institutions, and campuses in **29 states**.



Dana Center by the Numbers



We engaged with **118 districts in 23 states** to provide middle and high school math courses of the **highest quality**, as recognized by rigorous national and state reviews, including EdReports.org, Louisiana Department of Education, and Texas Education Agency panels.

Agenda



Principles to Actions: What are they?
Why are they important?



Innovation Configuration Maps:
What are they? Examine 2.

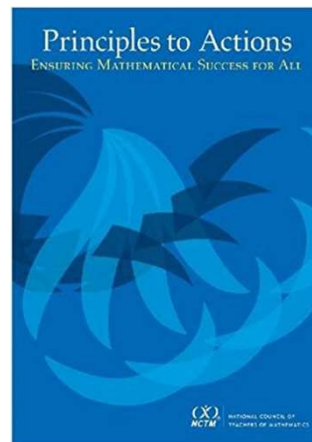


Virtual Walk-Through from
www.insidemathematics.org

Mathematics Teaching Practices

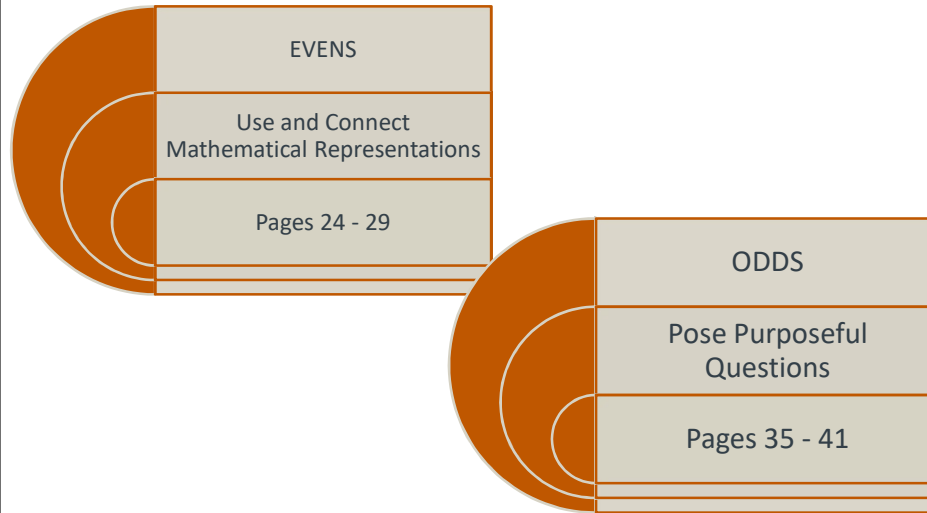
Eight Mathematics Teaching Practices provide a framework for strengthening the teaching and learning of mathematics.

This research-informed framework provides a core set of high-leverage practices and essential teaching skills necessary to promote deep learning of mathematics.



— National Council of Teachers of Mathematics. *Principles to actions: Ensuring Mathematical success for all* (2014). Reston, VA: National Council of Teachers of Mathematics. Available at <http://www.nctm.org/PtA>

Look at Two Practices



Mathematics Teaching Practices - Jigsaw

- Independently read your assigned teaching practice.
- Discuss with your colleagues what seems critical about that practice.
- Be prepared to share your findings with the other group and to learn from the other group.

These teaching practices represent the kind of instruction that supports greater student achievement.

Innovation Configuration (IC) Maps

An IC map presents carefully developed word-pictures of selected components of an innovation, or change, and the different operational forms that may exist.

IC maps are for shared learning.

Hall, G. E., & Hord, S. M. (2015). *Implementing change: Patterns, principles, and potholes*. Boston, MA: Pearson/Allyn & Bacon.

Innovation Configuration Maps



Innovation Configuration Maps

Innovation Configuration Map: Clarifying Learning

3. Use and connect mathematical representations¹ (Select appropriate representations, describe, and justify mathematical reasoning; use multiple representations.)

Level 3	Level 4	Level 5
<p>Students:</p> <ul style="list-style-type: none"> Make purposeful selections of representations. Justify similarities between representations. Engage in dialogue about representations. Use through a logical link in one direction from concrete forms through conceptual forms. 	<p>Students:</p> <ul style="list-style-type: none"> Use representations prescribed by the teacher. Engage in dialogue about representations that were prescribed by the teacher. Use multiple representations. 	<p>Students:</p> <ul style="list-style-type: none"> Use representations prescribed by the teacher.

Innovation Configuration Map: Clarifying Teaching

3. Use and connect mathematical representations¹ (Promote purposeful student selection of appropriate representations; facilitate student dialogue about explicit connections among representations.)

Level 1	Level 2	Level 3	Level 4	Level 5
<p>Teachers:</p> <ul style="list-style-type: none"> Implement rich tasks² to support students' examination of concepts through a variety of lenses. Introduce multiple representations. Promote discussion in which students use representations to justify mathematical understanding and reasoning. Facilitate discourse among students to enable them to make connections among representations and to move flexibly between them. Encourage students to select and use a variety of mathematical representations to solve problem solving. 	<p>Teachers:</p> <ul style="list-style-type: none"> Implement tasks to support student examination of concepts through a variety of lenses. Introduce multiple representations. Encourage discussion to explain problem solving and reasoning. Make connections for students between representations. Encourage students to use more than one mathematical representation to solve problems. 	<p>Teachers:</p> <ul style="list-style-type: none"> Implement tasks to support student examination of concepts. Introduce multiple representations. Encourage students to use more than one mathematical representation to solve problems. 	<p>Teachers:</p> <ul style="list-style-type: none"> Encourage students to use at least one mathematical representation for solving a problem. 	<p>Teachers:</p> <ul style="list-style-type: none"> Direct students to use a particular mathematical representation for solving a problem.

* Students can access mathematical ideas through multiple variations of contextual, visual, physical, and symbolic representations.
¹ National Council of Teachers of Mathematics' *Principles to actions: Ensuring mathematical success for all* (NCTM, 2014) defines a rich task as one that promotes reasoning and problem solving, and offers multiple entry points through the use of varied tools, multiple representations, and solution strategies. Tasks should be at grade level and should align with stated goal(s).
 The Charles A. Dana Center at The University of Texas at Austin

Components of Innovation Configuration Maps

Innovation Configuration Map: Clarifying Teaching

3. Use and connect mathematical representations¹ (Promote purposeful student selection of appropriate representations; facilitate student dialogue about explicit connections among representations.)

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Virtual Walk-Through: Inside Mathematics



Applications of Innovation Configuration Maps

How could you and your staff apply IC Maps as part of your ongoing efforts to improve teaching and learning?

- Build shared learning
- Support peer observations
- Clarify classroom observations for leaders
- Plan implementation supports
- Facilitate coaching conversations
- Support self-reflection

How can IC Maps improve our practices in teaching and learning?

Engage with the Dana Center



facebook.com/utdanacenter



[@UTDanaCenter](https://twitter.com/UTDanaCenter)

Conference Hashtag: #gotmath

Contact Information

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