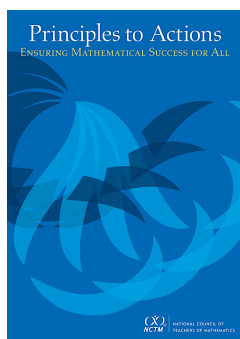


Use and Connect Mathematical Representations

Teacher and Student Actions

What are teachers doing?	What are students doing?
<ul style="list-style-type: none">• Selecting tasks that allow students to decide which representations to use in making sense of the problems.• Allocating substantial instructional time for students to use, discuss, and make connections among representations.• Introducing forms of representations that can be useful to students.• Asking students to make math drawings or use other visual supports to explain and justify their reasoning.• Focusing students' attention on the structure or essential features of mathematical ideas that appear, regardless of the representation.• Designing ways to elicit and assess students' abilities to use representations meaningfully to solve problems.	<ul style="list-style-type: none">• Using multiple forms of representations to make sense of and understand mathematics.• Describing and justifying their mathematical understanding and reasoning with drawings, diagrams, and other representations.• Making choices about which forms of representations to use as tools for solving problems.• Sketching diagrams to make sense of problem situations.• Contextualizing mathematical ideas by connecting them to real-world situations.• Considering the advantages or suitability of using various representations



National Council of Teachers of Mathematics. (2014). *Principles to actions: Ensuring mathematical success for all*. Reston, VA: Author.

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