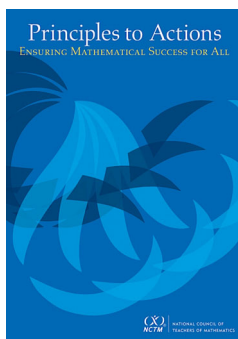


## Use and Connect Mathematical Representations: Teacher and Student Actions

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



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

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