

Roles of the Teacher and Student in Making Connections and Using Representations

The Role of the Teacher

- **Create** a learning environment that encourages and supports the use of multiple representations
- **Model** the use of a variety of representations
- **Orchestrate discussions** where students share their representations and thinking
- **Support** students in making connections among multiple representations, to other math content and to real world contexts

Adapted from: National Council of Teachers of Mathematics. (2000). [*Principles and Standards for School Mathematics*](#). Reston, VA.

Representation should be an important element of lesson planning. Teachers must ask themselves, “**What models or materials (representations) will help convey the mathematical focus of today’s lesson?**”

Fennell, F (Skip). (2006). Representation—Show Me the Math! NCTM News Bulletin. September. Reston, VA: NCTM

The Role of the Student

- **Create and use** representations to organize, record, and communicate mathematical ideas
- **Select, apply, and translate** among mathematical representations to solve problems
- **Use representations to model and interpret** physical, social, and mathematical phenomena

Adapted from: National Council of Teachers of Mathematics. (2000). [*Principles and Standards for School Mathematics*](#). Reston, VA.

“Students must be actively engaged in developing, interpreting, and critiquing a variety of representations. This type of work will lead to better understanding and effective, appropriate use of representation as a mathematical tool.”

National Council of Teachers of Mathematics. (2000)
Principles and Standards for School Mathematics. (p. 206). Reston, VA.