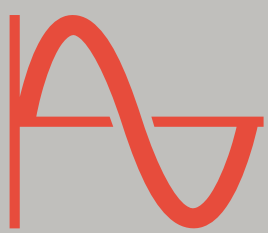


National Council of Teachers of Mathematics

Presents:

EFFECTIVE MATHEMATICS TEACHING PRINCIPLES

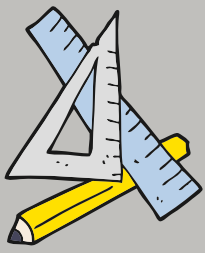


ESTABLISH MATHEMATICS GOALS TO FOCUS LEARNING

Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.

IMPLEMENT TASKS THAT PROMOTE REASONING AND PROBLEM SOLVING

Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies.

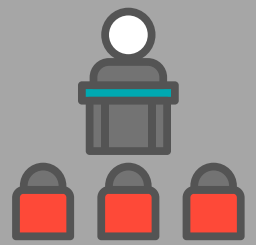


USE AND CONNECT MATHEMATICAL REPRESENTATIONS

Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving.

FACILITATE MEANINGFUL MATHEMATICAL DISCOURSE

Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.

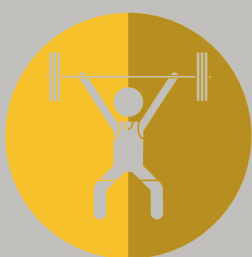
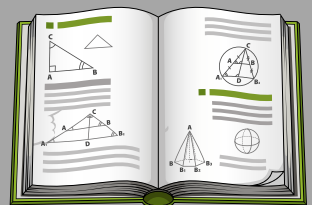


POSE PURPOSEFUL QUESTIONS

Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships.

BUILD PROCEDURAL FLUENCY FROM CONCEPTUAL UNDERSTANDING

Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.



SUPPORT PRODUCTIVE STRUGGLE IN LEARNING MATHEMATICS

Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships.

ELICIT AND USE EVIDENCE OF STUDENT THINKING

Effective teaching of mathematics uses evidence of student thinking to assess progress toward mathematical understanding and to adjust instruction continually in ways that support and extend learning.

