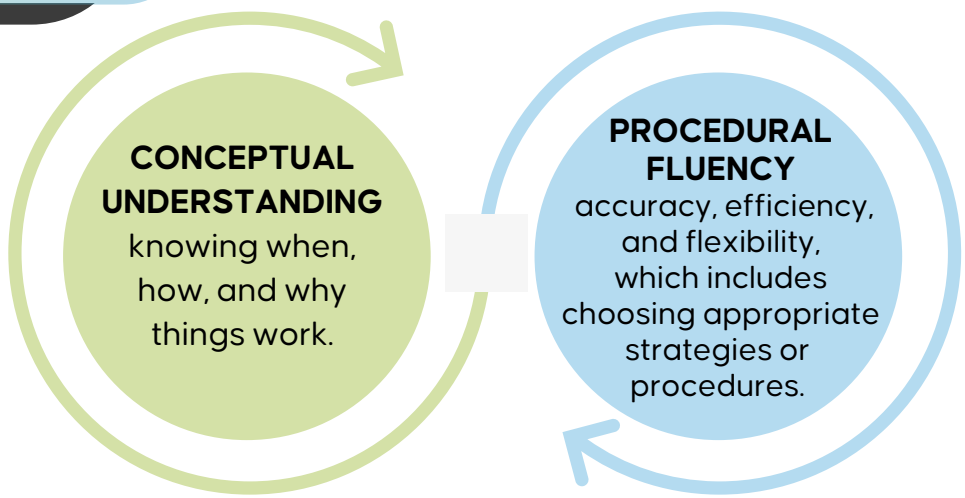
EMTP 6 Build Procedural Fluency from Conceptual Understanding

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.

NCTM (2014, p. 42)



Adapted from Huinker & Bill (2017, p. 68)

As a teacher I...

- create a culture in which students are learning and using a variety of strategies and evaluating efficiency of strategies for specific problems.
- use concrete and semi-concrete representations to help students understand strategies and algorithms.
- encourage students to consider various strategies and decide which ones are a good fit for that problem (strategy selection).
- provide ongoing practice in which students choose, use, and compare strategies.
- do not rush introducing algorithms and provide opportunities to develop conceptual basis to make sense of algorithms.

so that my students...

- recognize that computational and procedural problems can be solved in more than one way.
- can use a range of strategies and algorithms and explain why each works and when to use it.
- look at the numbers in a problem to determine how to solve it.
- know algorithms, but recognize that sometimes other strategies are more efficient.
- become flexible, adeptly choosing among strategies.

Adapted from NCTM (2014, p. 47)