Resnick: Making Intelligent Math Novices

- How to de-bug procedures while linking symbolic knowledge to everyday understanding of number?
- Role of motivation:
  - Encouraging practical math: finding relevant problems and mapping onto “math math”
  - Teaching math math:
    - Mapping formal notation onto practical procedures...
- What are the critical features of the curriculum?
Build on intrinsically motivating activity
  - Let students invent problems

Consolidate conceptual knowledge:
  - Explain reasoning (make thinking explicit)*
  - Use peers for “expert” explanations*
  - Use non-verbal materials for “critical cases”

After conceptual understanding, start mapping onto formal notation
  - Teacher as translator, re-framer
Brown & Campione

- What is a “community of learners?”
- What distinguishes this from a “normal” classroom?
- Does it work?
- What are the challenges?
Education & cognitive development: summing up

- What educational practices and experiences are best suited to children’s cognitive skills and knowledge?
  - Reading/writing/literacy
  - Math and logic
  - Science and critical thinking