Responding with Effective Instructional Approaches

The Institute for Educational Sciences in their document *Assisting Students Struggling with Mathematics: Response to Intervention (RTI) for Elementary and Middle Schools*[1] identify the following eight research-based recommendations for math interventions:

- **Recommendation 1**
  - Screen all students to identify those at risk for potential mathematics difficulties and provide interventions to students identified as at risk.
- **Recommendation 2**
  - Instructional materials for students receiving interventions should focus intensely on in-depth treatment of whole numbers in kindergarten through grade 5 and on rational numbers in grades 4 through 8. These materials should be selected by committee.
- **Recommendation 3**
  - Instruction during the intervention should be explicit and systematic. This includes providing models of proficient problem solving, verbalization of thought processes, guided practice, corrective feedback, and frequent cumulative review.
- **Recommendation 4.**
  - Interventions should include instruction on solving word problems that is based on common underlying structures.
- **Recommendation 5.**
  - Intervention materials should include opportunities for students to work with visual representations of mathematical ideas and interventionists should be proficient in the use of visual representations of mathematical ideas.
- **Recommendation 6.**
  - Interventions at all grade levels should devote about 10 minutes in each session to building fluent retrieval of basic arithmetic facts
- **Recommendation 7**
  - Monitor the progress of students receiving supplemental instruction and other students who are at risk.
- **Recommendation 8**
  - Include motivational strategies in tier 2 and tier 3 interventions.

[1] Gersten, R., Beckmann, S., Clarke, B., Foegen, A., Marsh, L., Star, J., & Witzel, B. (2009). Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools. Retrieved 3 December 2020, from https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/rti_math_pg_042109.pdf