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**BACKGROUND**
- The model evidence link (MEL) project is exploring the effectiveness of scaffolds to promote students’ scientific thinking when confronted with controversial and/or complex Earth and space science topics through the pre-constructed MEL (pcMEL) and the Build-a-MEL (BaMEL).
- The pcMEL presents four lines of scientific evidence with two models (scientific and non-scientific alternative).
- The BaMEL presents eight lines of scientific evidence with three models (scientific, scientific alternative and non-scientific alternative). Students will construct their own diagram selecting four evidence lines and two models.

**QUESTIONS**
- Would the BaMEL increase conceptual agency and reveal deeper evaluations than the pcMEL?
- Would students shift their plausibility judgements towards the scientific and increase their knowledge pre- to post-instruction?
- Would outcomes differ with different classrooms/topics?

**METHODS**
- N = 86, Participants were enrolled in science classes in 4 schools: 2 middle schools, 1 high school and 1 university
- Tested pcMEL and BaMEL for three different phenomena: climate change, water resource availability, and astronomical origins.
- All students completed 1 pcMEL topic.

**RESULTS**
- BaMEL did not result in greater evaluation scores compared to pcMEL.
- BaMEL resulted in increased knowledge scores with both scaffolds shifting students plausibility toward the scientific.
- We found differences between the different classrooms/topics
  - Origins resulted in greatest plausibility shifts
  - Climate change resulted in largest knowledge changes.

**CONCLUSIONS**

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