Professional Development to Improve the Spatial Thinking of Earth Science Teachers and Students


1. How did you use spatial thinking in your class this month?
   * Teachers’ reflections

2. Building on last month’s discussion about Perspective Taking (envisioning what an object or system would look like if viewed from different perspectives)

   Physical models are powerful for topics that involve perspective taking because they are genuinely 3-D and students can view them from different perspectives.

3. Using 3-D Physical Models to:
   A) minimize the need for perspective taking, and
   B) strengthen students’ perspective taking abilities

   * Strategy #1: Set up lessons so as to reduce the need for perspective taking, while still achieving essential understandings of Earth processes.

   * Strategy #2: Set up activities to practice and strengthen perspective taking, and develop language to discuss perspective taking

   We recommend a combination of #1 and #2.

4. Establishing physical models as a tool for more than just demonstration:
   > physical models to interpret data
   > physical models to create and answer questions

5. Examples from RES Exams
   Moon phases and seasonal patterns

6. Planning for the next session:
   Learning goals for teaching about topographic maps

7. Reflections and evaluations