

The “Mini Squeeze” Model for Ground Movement Patterns from Compressive Forces

The springy cat toys (small plastic coil springs) are a tabletop version of the same concept as the “Big Squeeze” model. Compressive forces of the North America Plate being pushed and squeezed by the Pacific Plate cause strain to accumulate. Deformation is greatest near the source of the compressive forces.

Learning Objective:

- Students will explain, either orally or in writing, how plate motion at a convergent boundary causes crustal deformation.

Steps

Step 1: **Setup:** Give student pairs a spring with 1 cm marks

Step 2: **Investigation:** Compress to different amounts (A,B,C)

Step 3: **Measurement & Analysis:** Compare by measuring the distance between start and finish. Ask: “What happens when you compress more v less? (more stored energy creates a bigger rebound.)”

Step 4: **Real-World Connection:** “If the coast is compressed more, what does that suggest about potential shaking hazard compared to far-inland regions?”

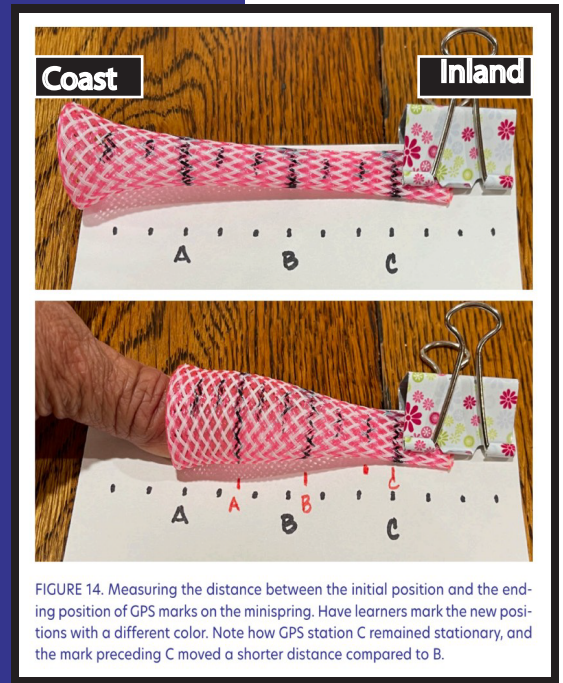


FIGURE 14. Measuring the distance between the initial position and the ending position of GPS marks on the minispring. Have learners mark the new positions with a different color. Note how GPS station C remained stationary, and the mark preceding C moved a shorter distance compared to B.

Also featured in an activity



- Use 2 different colors to mark the beginning and end locations on the ruler/index card; lessens confusion when measuring.
- Notice the clip is holding both the card and the cat toy/spring.
- Use small-group exploration and quick formative checks to make sure they're understanding the model.
- This is easy to scale, and less bulky than the tunnel.
- Ask students to describe motion with speed and direction to start thinking in terms of vectors.
- NGSS: MS-ESS2-2, HS-ESS1-5, Developing and Using Models, Stability and Change.



Find more at earthscope.org!

