Curiosity Thread: A Temperature Change Is a Model, Not a Magic Number

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A temperature record can be powerful because it links an observable change to an energy-transfer model. But the number depends on what was included in the system boundary. Did the cup warm? Did heat move into the air? Did the modeled reaction go to completion? Those questions do not make the calculation useless; they make its claim more precise.

1. A small cup warms by 5°C and a large cup warms by 2.5°C. What extra information decides whether they absorbed the same heat?
2. Why can products be lower in an energy diagram while a reaction still has an activation barrier?
3. Rewrite this idea accurately: “Breaking bonds releases energy.”
4. How might a sports drink cooling pack or a hand warmer be described using system, surroundings, and heat transfer—without claiming that every product works by the same chemistry?

Use only the supplied data cards. The source note documents the energy-language references and the limitations of mean bond enthalpies.