

Teacher Prompt for Generating Phenomena + Flawed AI Models

Refine the Model Routine

Use this prompt to generate a classroom-ready phenomenon and a plausible but incomplete AI-generated model that students can critique, revise, and improve.

Prompt for Phenomenon

You are helping me design a NGSS science sensemaking activity to help students dive into deeper understanding of science content.

Create a classroom-ready phenomenon and an AI-generated model for students to critique and revise.

Content area: [insert content area]

Grade band: [insert grade level or grade band]

Topic or standard: [insert topic, DCI, or standard]

Your task:

1. Generate a real-world, observable phenomenon that students could reasonably notice in everyday life, through a simple demonstration, or from a familiar classroom context.
2. The phenomenon should be written in 1-2 sentences.
3. Do not explain the phenomenon.
4. Then generate an AI-style model of the phenomenon that:
 - sounds plausible and confident
 - includes 3-5 parts, steps, or claims
 - is partially correct but incomplete, oversimplified, or missing an important system relationship, mechanism, or variable
5. The model should be appropriate for students to critique and improve.
6. Do not generate a fully correct scientific model.
7. Do not include teacher notes, answer keys, or explanations of what is wrong with the model.

Important constraints:

- The phenomenon must be specific enough to visualize.
- The flawed model must be strong enough that students could keep some parts, revise some parts, and add missing ideas.
- Use clear student-friendly language.
- Do not use overly technical vocabulary unless it is appropriate for the grade band.
- Do not turn this into a full lesson, worksheet, or explanation.

Output format:

Phenomenon

[write the phenomenon]

AI-Generated Model

[write the flawed model as 3-5 bullet points]

Make sure the model is appropriate for a "Refine the Model" activity where students revise the model rather than reject it completely.

Prompt for Model

Create a simple, student-friendly scientific model diagram based on the phenomenon and AI-generated model below.

The image should look like a classroom science model, not a realistic photograph.

Phenomenon: [insert phenomenon]

AI-generated model to represent:
[insert the flawed AI model]

Requirements:

- * Show the key parts of the system visually.
- * Include arrows, labels, and simple cause-and-effect relationships.
- * Make the diagram clear and easy for students to read.
- * Keep the style clean, simple, and appropriate for a classroom handout or slide.
- * Use a white or very light background.
- * Use minimal text in the image.
- * The model should reflect the flawed AI explanation as written, even if the science is incomplete or oversimplified.
- * Do not silently correct the science.
- * Do not add extra mechanisms, labels, or relationships that are not in the AI model.
- * Do not make it look too polished or textbook-perfect.
- * Make it plausible enough that students can critique and revise it.

Style guidance:

- * flat educational illustration
- * simple shapes
- * labeled parts
- * arrows showing relationships
- * no decorative background
- * no cartoon faces
- * no extra icons unless they help explain the model
- * easy for middle or high school students to annotate

Output:

Create only the diagram image.

What to include	What to avoid
<ul style="list-style-type: none">• An observable phenomenon students can picture• A model with some useful parts and some gaps• One or more missing mechanisms, relationships, or variables• Language students can reasonably critique	<ul style="list-style-type: none">• A fully correct expert explanation• Obvious nonsense students would dismiss immediately• Teacher notes explaining the flaws• Vocabulary so technical that it shuts down discussion

Teacher note: After generating the phenomenon and model, review the output before giving it to students. The strongest examples are plausible enough to invite revision, not immediate rejection.