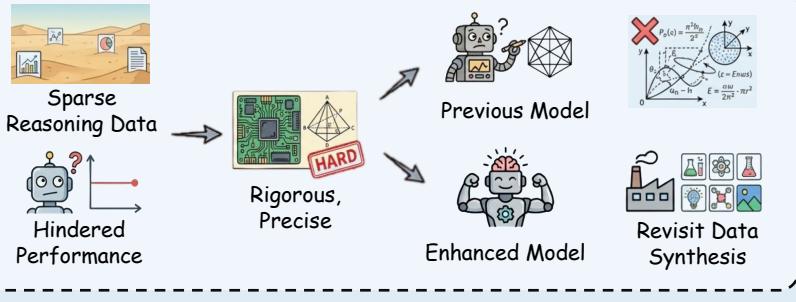
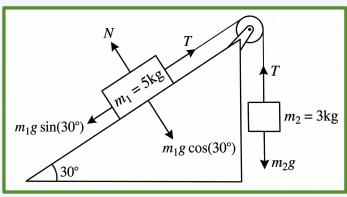


## Scientific Image Generation



### Closed-source Models

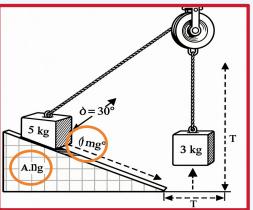
Nano Banana Pro, GPT-Image-1.5



Powerful but **high cost**

### Open-source Models

Qwen-Image, HunyuanImage-3.0



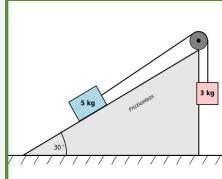
Struggling with **Text Blur & Semantic Misalignment**

### ImgCoder: Logic-Driven Programmatic Framework



**Original Question:** A 5kg block slides down a frictionless inclined plane at  $30^\circ$ . It is connected by a massless string over a pulley to a hanging 3kg mass. Calculate the tension in the string.

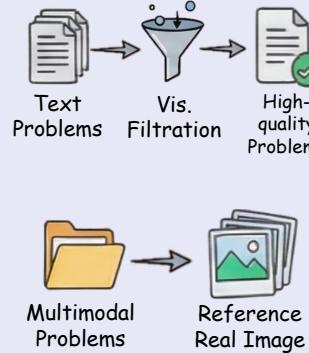
**Content:** [Incline]: Triangle with  $30^\circ$  slope. [Block 1]: Rotated  $30^\circ$  to sit flush on the slope. [Pulley]: Circle at the top vertex...  
**Layout:** [Incline]: Base length approx. 10 units. Height determined by  $5 \tan(30^\circ)$ ...  
**Label:** [Masses](5kg, 3kg), [angle] ( $30^\circ$ )  
**Considerations:** Use `ax.set_aspect('equal')` to ensure the  $30^\circ$  angle is visually accurate. [Block 1] must be rotated by  $30^\circ$  to align flush with the slope...



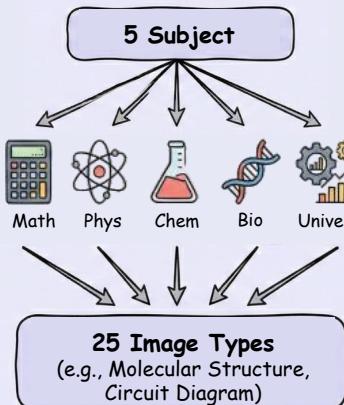
Balanced Cost & High Fidelity

## SciGenBench Construction

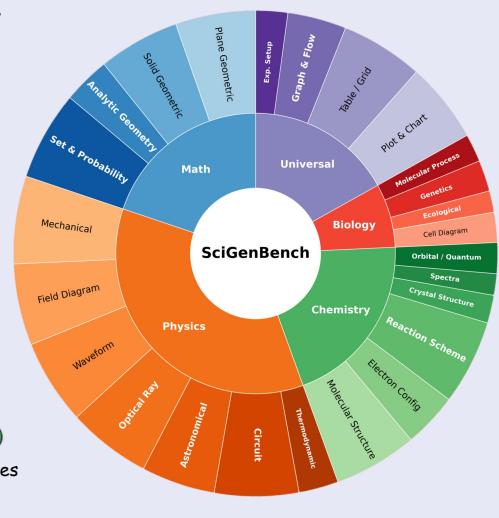
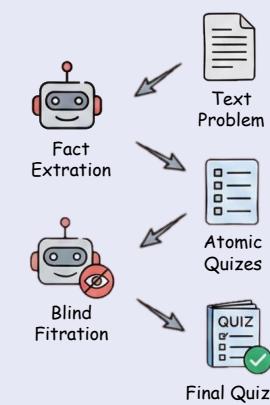
### Data Selection



### Hierarchical Taxonomy

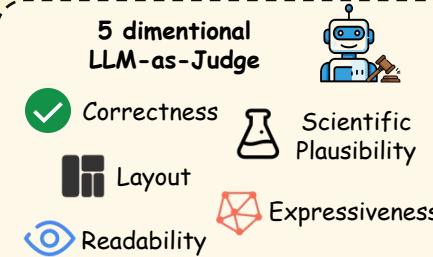


### Visual-Dependent Quiz Generation

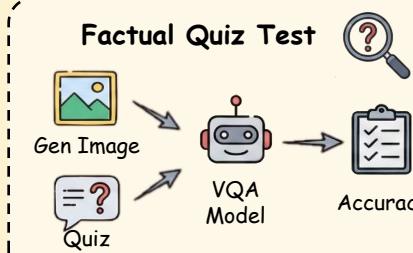


## Evaluation Framework

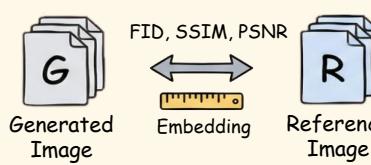
### 5 dimensional LLM-as-Judge



### Factual Quiz Test



### Dist. Consistency



### Downstream Task

