

Modes of Application of GenAI in Science lessons

Modes of Application of GenAI in Science lessons	The description on the interaction between GenAI and students	Examples
① No GenAI	Students complete tasks <u>without using AI</u> , and demonstrating concepts and skills throughout the scientific practices	Students plan and conduct an 'toy car motion investigation' entirely without digital assistance - from selecting materials, adjusting the slope angle, to observing speed changes. They record their findings using hand-drawn graphs and compile a laboratory report.
② GenAI-Assisted Idea Generation	Students <u>may use AI for planning, developing ideas</u> , and searching for information. However, students should show how they selected and refined these ideas .	Students use AI tools to propose different testing plans for investigating 'how slope angle affects toy car motion'. They then select and refined the most feasible experimental method based on their understanding of scientific concepts.
③ GenAI-Assisted Editing	Students <u>may use AI to help refine their work</u> . However, students should show how to evaluate the AI-generated content.	After completing a 'Toy Car Motion Investigation' experiment and drafting a lab report, the student used AI to help organize the data. When finding the AI had misprocessed the timing data from different slope angles, the student corrected it against the original experimental records.
④ GenAI completing task for Student's Evaluation	Students <u>may use AI to complete the entire task</u> , but students should show how to evaluate the results generated by the AI.	Students instructed AI to predict how a 50 g toy car speed changes on different surfaces (carpet, sandpaper, plain paper) on a ramp. The AI generated a result showing plain paper would slow the car most. The students find it not scientific as plain paper would exert less friction on the car; he prompted the AI to correct the prediction.

Reference:

Furze, L., Perkins, M., Roe, J., & MacVaugh, J. (2024). *The AI Assessment Scale (AIAS) in action: A pilot implementation of GenAI supported assessment*. <https://doi.org/10.48550/arXiv.2403.14692>