TECHIMAGE-BENCH: RUBRIC-BASED EVALUATION FOR TECHNICAL IMAGE GENERATION

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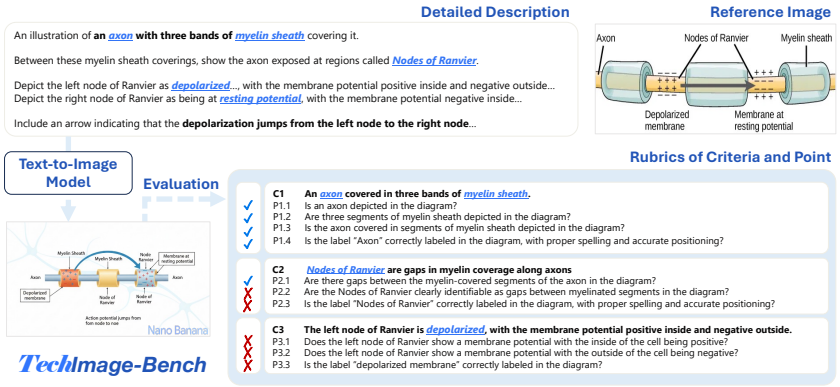

Figure 1: **We propose TechImage-Bench, a rubric-based evaluation benchmark for technical image generation.** The benchmark will be publicly available.

ABSTRACT

We study technical image generation, where a model must synthesize information-dense, scientifically precise illustrations from detailed descriptions rather than merely produce visually plausible pictures. To quantify the progress, we introduce TechImage-Bench, a rubric-based benchmark that targets biology schematics, engineering/patent drawings, and general technical illustrations. For 654 figures collected from real textbooks and technical reports, we construct detailed image instructions and a hierarchy of rubrics that decompose correctness into 6,076 criteria and 44,131 binary checks. Rubrics are derived from surrounding text and reference figures using large multimodal models, and are evaluated by an automated LMM-based judge with a principled penalty scheme that aggregates sub-question outcomes into interpretable criterion scores. We benchmark several representative text-to-image models on TechImage-Bench and find that, despite strong open-domain performance, the best base model reaches only 0.813 rubric accuracy and 0.596 criterion score overall, revealing substantial gaps in fine-grained scientific fidelity. Finally, we show that the same rubrics provide actionable supervision: feeding failed checks back into an editing model for iterative refinement boosts a strong generator from 0.660 to 0.865 in rubric accuracy and from 0.382 to 0.697 in criterion score. TechImage-Bench thus offers both a rigorous diagnostic for technical image generation and a scalable signal for improving specification-faithful scientific illustrations.

1 INTRODUCTION

Recent text-to-image (T2I) models produce photo-realistic and semantically aligned images for open-domain prompts (Wan et al., 2025; Zheng et al., 2024; Seedream et al., 2025). The strong performance motivates real utility for technical image generation, *e.g.*, scientific illustrations, engineering drawings, and patent-style diagrams (Gowaikar et al., 2024; Tang et al., 2024; Fang & Zhang, 2017; Elasri et al., 2022). In this study, we aim to define and benchmark the technical image generation problem, where the model takes technical documentation, and produces an image that is not only visually plausible but also information-dense and factually precise. Representative

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scenarios include biology schematics, engineering or patent embodiments, and scientific diagrams. However, this task requires evaluation that goes beyond aesthetics to verifiable correctness.

Different from daily images, fine-grained mistakes common in technical figures, such as misplaced organelles, omitted mechanical components, or incorrect data relations, can invalidate the entire illustration while remaining subtle to non-experts and invisible to generic image metrics (Li et al., 2024; Min et al., 2025; Agnolucci et al., 2024) or "few-second glance" human judgments. As shown in Figure 1, the state-of-the-art proprietary models generate seemingly correct but far from usable technical images. We argue that the existing holistic scoring is too coarse to capture these failure modes reliably. The key to making consistent improvement for the technical image generation task is by creating a consistent and comprehensive grading signal across domains, tasks, and samples.

Following insights from rubric-driven large language model (LLM) evaluations, *e.g.*, PaperBench (Starace et al., 2025), HealthBench (Arora et al., 2025), we argue that assessment should be decomposed into explicit rubrics instead of single holistic scores such as CLIP score (Hessel et al., 2021), aesthetic (Murray et al., 2012), human preference score (Wu et al., 2023), or large multimodal model (LMM) grading in this special problem. Therefore, we propose to separate task checks from domain ones. Specifically, this corresponds to task-specific rubrics grounded in each sample's given input documentation, and domain-specific rubrics shared among samples within each task, capturing each domain and task's unique requirements. Converting each abstract criterion into binary, unit-test-like questions yields scores that are more reliable, interpretable, and actionable than holistic ratings, while remaining scalable with LMM-based judging. Our analyses also validate that specifying the aspect to judge based on the rubrics significantly simplifies the task for the LMM grader and yields better alignment with human experts, even with weaker LMMs.

Building on this view, we introduce TechImage-Bench, a breakdown benchmark for technical image generation. The core task of this benchmark is to generate precise technical illustrations based on detailed textual descriptions, *e.g.*, captions, figure titles, or research report excerpts. We extract text–image pairs from authentic professional textbooks and reports, including captions, titles, and in-text figure references, and use an LMM to extract implicit constraints from these sources. These constraints are then transformed into a series of objective, binary (yes/no) conditions, forming our dataset's detailed rubrics, which decompose the evaluation into independent sub-criteria across two dimensions: task and domain. An automated LMM Evaluator answers each prompt independently and aggregates at the criterion level using a principled penalty scheme. The current benchmark covers Biology, Engineering, and General illustrations, totaling 654 tasks, 6,076 criteria, and 44,131 binary checks, and shows the stability of the evaluation.

We evaluate several state-of-the-art T2I models on TechImage-Bench, including GPT-Image (OpenAI, 2025a) and Nano Banana 2 (Google, 2026). Experimental results clearly show that although these models excel in general tasks, their average reproduction accuracy on our benchmark remains lower than 80%, with only Nano Banana 2 and GPT-Image-2 exceeding this threshold. This finding quantitatively reveals severe deficiencies in current SOTA models' fine-grained accuracy. Importantly, rankings do not perfectly align with perceived general-domain quality, underscoring that progress on professional and high-value images requires methods that explicitly reason about and satisfy specifications. Furthermore, to validate the effectiveness of our rubric-based evaluation, we conduct a rule-based editing experiment: low-scoring rubrics are fed back into an editing model, which iteratively refines the generated image. The revised images achieve significantly higher scores on TechImage-Bench, confirming the practical value of our rubric decomposition in guiding the improvement in technical image generation, either as offline grading scores or online reward values.

Our contributions are threefold:

- We formalize the technical image generation problem and propose a rubric-based evaluation that decomposes verification into task-specific and domain-specific checks.
- We collect and release TechImage-Bench, spanning 654 tasks / 6,076 criteria / 44,131 binary checks across biology, engineering, and general domains, with an automated LMM Evaluator and principled scoring.
- We provide comprehensive analyses showing (i) misalignment between open-domain prowess and professional accuracy, and (ii) significant gains from rubric-guided refinement, charting a path that produces specification-faithful and professional-grade images.

We released the TechImage-Bench code and dataset to encourage future research on improving the model's capability for technical image generation.

2 Related Work

Text-to-image Generation Recent advances in diffusion and transformer-based models have greatly improved open-domain text-to-image synthesis (Ruiz et al., 2023; Saharia et al., 2022; Google, 2025a). Systems like DALL-E (Ramesh et al., 2021) and Stable Diffusion (Rombach et al., 2022) can produce high-quality images from natural language prompts, demonstrating unprecedented diversity and fidelity. Google's Imagen model (Saharia et al., 2022) further showed photorealistic generation capabilities, underscoring the rapid progress in this field. These powerful generative models have, in turn, motivated attempts to apply them in high-value specialized domains such as scientific and technical illustration (Gillani et al., 2025; Mondal et al., 2024; Wang et al., 2025). Their strong general capabilities suggest potential for automating tasks like diagram creation or academic figure drawing, which are traditionally labor-intensive (Wei et al., 2025; Bamouh et al., 2025; Malik et al., 2025). However, most such uses to date have been ad hoc explorations by individual users. The community has lacked rigorous benchmarks to track progress on these applications, given the challenges of the required detailed perception and domain knowledge.

Technical Image Generation A growing line of work targets the generation of domain-specific diagrams and scientific images from text descriptions (Lee et al., 2025; Xing et al., 2025; Belouadi et al., 2023; Xiao et al., 2025). Early efforts include code-based approaches (Carlier et al., 2020; Xing et al., 2024; Jain et al., 2023), where LLMs can be prompted to emit diagram specification code, *e.g.*, TikZ or SVG scripts, that a renderer converts into an image. For example, AutomaTikZ (Belouadi et al., 2023) and DeTikZify (Belouadi et al., 2024) demonstrated text-guided generation of scientific graphics by producing TikZ code. These methods achieve element-level precision but involve a cumbersome write–compile–review loop, limiting their practicality for complex figures. Others have explored direct image-based generation. FigGen (Rodriguez et al., 2023) introduced the text-to-scientific figure task using diffusion models, highlighting challenges in going beyond natural images. More recently, dedicated benchmarks and datasets have begun to emerge. SridBench (Chang et al., 2025) is the first benchmark focused on scientific research figure synthesis, compiling 1,120 illustrations from papers across 13 disciplines. Two very recent efforts further advance this area. VisBench (Sun et al., 2025) presents a seven-criterion evaluation suite assessing content, layout, visual clarity, and user interactivity of generated figures. The InteractScience benchmark (Chen et al., 2025) focuses on interactive scientific content generation, which evaluates LLMs that produce interactive scientific demonstrations by combining rigorous functional tests with visually-grounded checks against reference outputs. Compared to these works, TechImage-Bench goes further in both scope and rigor: it spans multiple technical domains and employs a rubric-based, hierarchical evaluation that decomposes each figure's requirements into fine-grained criteria and binary verification checks.

Text-to-Image Evaluation Text-to-Image (T2I) generation is typically evaluated with holistic metrics, such as Fréchet Inception Distance (FID) (Heusel et al., 2017), Inception Score (IS) (Salimans et al., 2016), or CLIP Score (Hessel et al., 2021). Recently, evaluation paradigms have gradually shifted toward prompt-guided visual question answering methods, such as VQA Score (Hu et al., 2023). However, scientific and technical illustrations require strict structural correctness, domain-specific visual logic, and precise data representation, which general-purpose methods struggle to reliably assess. To address this gap, our work shifts T2I evaluation toward expert-reviewed, sample-specific verification, ensuring generated content meets the stringent professional requirements.

Evaluation of Hard-to-Verify Tasks The NLP community has developed methods to evaluate complex, open-ended outputs where simple ground-truth matching is inadequate. A prominent example is PaperBench (Starace et al., 2025), which assesses an AI agent's ability to replicate research papers. PaperBench uses a manually crafted hierarchical rubric to break down each replication into sub-tasks with clear grading criteria, yielding over 8,000 individually gradable items. Crucially, it employs an automated judge, *i.e.*, an LLM, to grade each sub-task against the rubric, achieving scalable evaluation aligned with expert judgment. In the medical domain, HealthBench (Arora et al., 2025) introduced a rubric-driven evaluation of LLM responses to clinical scenarios. These

benchmarks underscore the importance of multi-dimensional, rubric-based evaluation for tasks where quality is complex and a single ground-truth answer is absent. Inspired by these approaches, TechImage-Bench adapts the rubric-driven methodology to visual content generation. We systematically design hierarchical rubrics that capture the essential qualities of technical images, *e.g.*, content accuracy, visual clarity, adherence to style conventions, and employ automated scoring procedures based on OpenAI o4-mini, to ensure scalable yet principled evaluation.

3 TECHIMAGE-BENCH

Although current generative models are remarkably powerful, they still tend to produce fine-grained errors when they are applied in professional scientific scenarios. These fine-grained errors are often difficult for non-experts to discern, and existing evaluation methods struggle to capture the subtle details that are critical to scientific rigor. Just as we require unit tests to validate code, there is an urgent need for a reliable method to assess such hard-to-verify visual generation content. This task demands that models not only ensure semantic and visual alignment with the input description, but more crucially, guarantee fine-grained scientific accuracy.

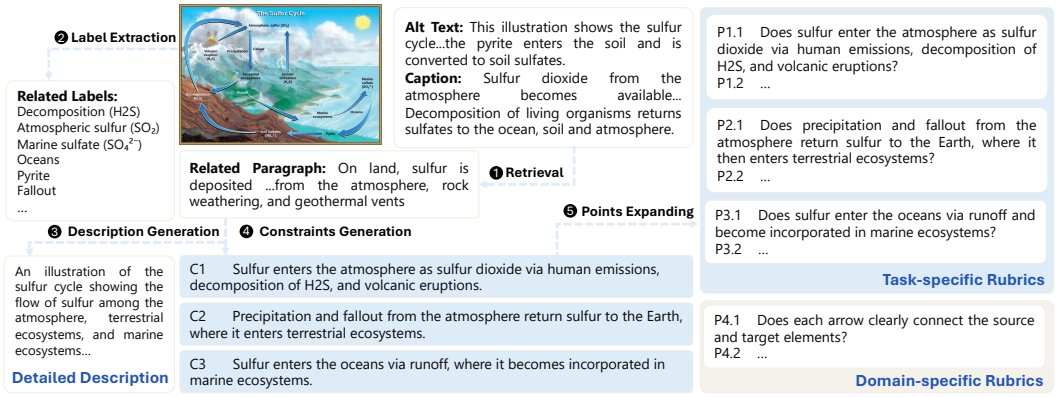

Figure 2: **The process of constructing detailed descriptions and rubrics.** (1) Retrieval: The alt text, caption, the related paragraph associated with the image are retrieved from the textbook. (2) Label Extraction: Related labels are extracted from the image, *e.g.*, decomposition, atmospheric sulfur, and marine sulfate. (3) Description Generation: A coherent and detailed image description is generated based on the retrieved text and related labels. (4) Constraint Generation: LMM identifies and extracts the implicit constraints in the textual description. (5) Points Expanding: Each constraint is expanded into fine-grained binary scoring points, covering inclusion and exclusion criteria.

3.1 PROBLEM DEFINITION

Consider a technical image instruction t and a set of evaluation criteria $\mathcal{C} = \{c_1, c_2, \ldots\}$, where each c_i represents an abstract evaluation item describing an independent and complete evaluation rule, *e.g.*, "the phospholipid bilayer is correctly depicted." We observe that, in many practical cases of technical image generation, any evaluation rule is rarely entirely violated or fully satisfied, as shown in Figure 1. It is difficult to judge each rule using a simple binary decision (yes/no) with sufficient reliability, which brings significant challenges for objective evaluation.

Therefore, each criterion is further decomposed into a series of scoring points, *i.e.*, $c_i = \{p_{i,1}, p_{i,2}, \ldots\}$, where each scoring point corresponds to an objective binary question, such as "Does the cell membrane exhibit a bilayer structure?", "Is the bilayer composed of hydrophobic and hydrophilic ends?", "Does the overall bilayer structure exhibit symmetry?" and so on. In this way, we are able to perform a fine-grained evaluation of the generated image.

We define the core problem as generating a technical image x from a detailed textual instruction t, and evaluating the image through this set of scoring criteria $\mathcal{C}$ to accurately capture the subtle differences that are essential for the rigor of technical images.

Table 1: **Statistics of tasks, criteria, and points in TechImage-Bench.** The dataset is divided into three domains, *i.e.*, biology, engineering, and general.

Domain	Task	Criteria	Point
Biology	318	2772	20512
Engineering	232	2427	17695
General	104	877	5924
All	654	6076	44131

3.2 Dataset Construction

As shown in Figure 2, we constructed our dataset through a series of automated steps combined with meticulous manual filtering and refinement. As listed in Table 1, the dataset is divided into three domains, biology, engineering, and general, based on the scenario. In total, our dataset contains 654 unique generation tasks, along with 6,076 finely annotated criteria and 44,131 scoring points.

Raw Image-text Corpus Collection We collected more than 10,000 examples of paragraphs containing images and detailed descriptions from publicly available websites, including textbooks, professional books, web pages, and patent documents. We extracted the corresponding captions, alt text, and contextual references from the paragraphs surrounding each image. After manual screening and filtering, we selected the images that met our criteria to serve as the reference images in the dataset, together with their associated contextual information from the original sources.

Detailed Description Generation The caption and alt text provide only limited information, whereas many specific constraints are encoded in the surrounding paragraphs associated with the image. Therefore, we (1) retrieve related paragraphs based on the caption and alt text, and then (2) extract the related labels in the reference image. By integrating this multimodal information, we (3) employ a large multimodal model to generate a coherent and semantically detailed description, which provides a reliable foundation for image generation.

Rubrics Generation Another major challenge is how to construct evaluation rubrics. To address this, we divide the rubrics into two categories: task-specific and domain-specific. Domain-specific rubrics mainly consist of manually designed general scoring prompts that assess the overall quality of images, such as arrows, labels, etc. Task-specific rubrics focus on evaluating the consistency between the image content and the textual context. To achieve this, (4) we utilize the multimodal context collected in the previous stages to generate explicit or implicit constraints, *i.e.*, criteria, on the image, and then (5) refine these extracted constraints into a set of binary scoring questions that can be clearly answered with yes or no. Through this series of steps, we can construct a set of concrete evaluation criteria for each technical image. However, the initially generated criteria may still vary in quality and contain redundant prompts. Therefore, these preliminary criteria are cross-validated with the detailed description to ensure consistency, and then deduplicated, filtered, and text-refined by an LMM and human experts to produce the final dataset.

Human Refinement To ensure the rigor and reliability of the dataset, we recruited domain experts to review and revise the automatically generated detailed descriptions and rubrics. This process guaranteed the validity of all generated content, allowing for cross-validation by independent experts. For additional details of implementation, refer to **Supplementary Materials**.

3.3 LMM Evaluator

To enable large-scale automated evaluation, we develop an automatic evaluator using OpenAI o4-mini, whose performance is reported by OpenAI to be competitive with that of GPT-o3. For each image, the evaluator sequentially responds to every scoring prompt. Each scoring prompt is submitted to the model individually to ensure that every question is answered accurately. The alt text and title of the image are also provided during evaluation to help the model better understand the intended meaning of the image and make precise judgments. For image evaluation, we design two

Table 2: **Overall results on TechImage-Bench.** All results are evaluated using OpenAI o4-mini as the automatic evaluator. All models obtain an overall score below 0.6, indicating that these models still have room for improvement in technical image generation.

Model	Biology		Engineering		General		Overall	
	Acc	Score	Acc	Score	Acc	Score	Acc	Score
FLUX (Labs et al., 2025)	0.592	0.286	0.444	0.167	0.616	0.359	0.551	0.270
Imagen-3 (Baldridge et al., 2024)	0.600	0.288	0.492	0.195	0.638	0.377	0.577	0.287
Seedream (Seedream et al., 2025)	0.680	0.393	0.560	0.260	0.688	0.442	0.642	0.365
Nano Banana (Google, 2025a)	0.697	0.400	0.579	0.276	0.716	0.468	0.664	0.381
GPT-Image (OpenAI, 2025a)	0.704	0.425	0.556	0.258	0.718	0.463	0.660	0.382
Wan2.5 (WAN, 2025)	0.714	0.433	0.606	0.309	0.755	0.519	0.692	0.420
GPT-Image-1.5 (OpenAI, 2025b)	0.832	0.606	0.693	0.409	0.769	0.550	0.765	0.522
Nano Banana Pro (Google, 2025b)	0.849	0.625	0.708	0.434	0.816	0.601	0.791	0.553
Nano Banana 2 (Google, 2026)	0.865	0.657	0.709	0.432	0.828	0.640	0.801	0.576
GPT-Image-2 (OpenAI, 2026)	0.874	0.678	0.721	0.457	0.845	0.653	0.813	0.596

metrics. Rubric accuracy measures the success rate of scoring points, and is defined as:

$$\text{Accuracy} = 1 - \frac{\sum e_i}{\sum |c_i|}, \tag{1}$$

and criterion score measures the degree of overall compliance with the constraints:

$$\text{Score} = \frac{1}{|\mathcal{C}|} \sum 0.5^{e_i}, \tag{2}$$

where e_i denotes the number of failed points under the i-th criterion. If two errors fall in the same criterion versus different criteria, the rubric accuracy, which focuses on low-level scoring points, is the same in both cases, but the former will have a higher criterion score, which focuses on high-level criteria. For additional details, please refer to **Supplementary Materials**.

4 Experiments

4.1 Experimental Setup

We evaluated a series of state-of-the-art models, GPT-Image (OpenAI, 2025a), GPT-Image-1.5 (OpenAI, 2025b), GPT-Image-2 (OpenAI, 2026), Nano Banana (Google, 2025a), Nano Banana Pro (Google, 2025b), Nano Banana 2 (Google, 2026), Flux (Labs et al., 2025), Imagen-3 (Baldridge et al., 2024), Seedream (Seedream et al., 2025), and Wan2.5 (WAN, 2025), on our TechImage-Bench. Specifically, following our detailed descriptions, we asked each model to generate images in professional styles, and then used OpenAI o4-mini as the LMM evaluator to assess the results. All models were given the same prompts and followed the same settings. For additional details of experimental setup, please refer to **Supplementary Materials**.

4.2 Quantitative Results

As shown in Table 2, although current models demonstrate strong generative capabilities on open-domain image tasks, there remains a significant gap in fine-grained scientific consistency. The best-performing model is GPT-Image-2, while GPT-Image and Nano Banana achieve overall accuracies of less than 70%. This indicates that even state-of-the-art T2I systems still face substantial challenges when generating complex, structurally precise, and highly specialized technical images. More importantly, the overall score, which focuses on overall capability, remains below 0.6. This not only reflects the stringent requirements and fine-grained difficulty of TechImage-Bench in scientific rigor, but also highlights its strong discriminative power in differentiating model capabilities.

In addition, the difficulty levels across the three sub-tasks differ significantly, with engineering being the most challenging for all models. Even the best-performing model shows clearly lower results compared with the other two categories. This finding strongly suggests that current T2I models still face fundamental limitations in generating high-precision engineering drawings, as such drawings typically involve strict dimensional accuracy, structural constraints, functional workflows, and complex logical relationships among components. These limitations form the primary bottlenecks for

future model improvements. This further reinforces our central claim: in technical image generation scenarios, introducing structured, rubric-based fine-grained evaluation signals is crucial for driving continuous advancements in model capabilities.



Figure 3: **Samples of dataset and generated images.** (1) Biology: GPT-Image, Flux, and Imagen3 miss some stages, while Nano Banana, Seedream, and Wan2.5 show unclear stage progression. (2) Engineering: Flux and Imagen3 mismatch the description, while the others miss labels or components. (3) General: Flux mismatches the description, while the others show spatial inaccuracies.

4.3 Qualitative Results

To more intuitively demonstrate the fine-grained diagnostic capability of TechImage-Bench, Figures 3 and 4 present a complete example derived from the dataset and evaluation. This example includes a detailed task description and eight contextual scoring criteria. We can observe that the matrix of satisfied and unsatisfied judgments clearly reveals the fine-grained decision-making process of the LMM evaluator. Instead of providing a single holistic conclusion, the evaluator assesses a series of more granular sub-criteria, enabling a meticulous analysis of generation quality. Compared with approaches that provide only an overall score, TechImage-Bench's multi-level and interpretable scoring scheme delivers richer and more diagnostic feedback, allowing for a more precise characterization of the limitations of current models in technical image generation. For cases of benchmark and evaluation, refer to **Supplementary Materials**.

Table 3: **Refinement results with rubrics.** As editing iterations increase, the scores across all three domains gradually improve, showing that rubrics can be used as explicit and executable guidance.

Number	Biology		Engineering		General		Overall	
	Acc	Score	Acc	Score	Acc	Score	Acc	Score
Original	0.704	0.425	0.556	0.258	0.718	0.463	0.660	0.382
N=1	0.783	0.518	0.639	0.340	0.765	0.585	0.729	0.481
N=2	0.820	0.579	0.687	0.397	0.801	0.629	0.769	0.535
N=3	0.847	0.629	0.723	0.442	0.831	0.673	0.800	0.581
N=4	0.863	0.658	0.750	0.480	0.845	0.696	0.820	0.611
N=5	0.874	0.675	0.763	0.504	0.857	0.717	0.831	0.632
N=10	0.903	0.735	0.812	0.597	0.879	0.759	0.865	0.697

4.4 Dataset Quality and Consistency of LMM Evaluator

To further validate the reliability of TechImage-Bench, we conduct additional experiments to assess the quality of the dataset and the consistency between the LMM evaluator and human judgments. For detailed experimental settings and results, refer to **Supplementary Materials**.



Figure 4: **Case of evaluation result.** The biological illustration generated by GPT-Image did not depict the three alveolar ducts as required, and failed to represent the mucous glands as small, flat structures on the outside of the bronchial tubes.

5 DISCUSSION

5.1 REFINEMENT WITH RUBRICS

Rubrics can serve not only as tools for diagnosing fine-grained model errors but also as effective and actionable supervision signals for improving image quality. We conducted an iterative image refinement experiment based on rubrics. In each iteration, we extracted all points with a score of 0 from the rubrics and used these failure cases as explicit editing instructions fed back to the editing model to modify the image generated in the previous round. We then recorded the best results produced during the editing process. Specifically, during each iteration, we provided an LMM with the original image and the failed scoring points under each criterion to generate editing instructions, which were then used to guide Nano Banana in refining the image.

5.2 OVERALL REFINEMENT RESULTS

Using the image generated by GPT-Image as the baseline, we conducted the experiment. As shown in Table 3, after just one iteration, the accuracy and score increased markedly, indicating that accurately identifying key errors can significantly improve image quality. As the editing proceeded, the quality continued to increase substantially. This demonstrates that when rubrics are used as explicit and executable guidance signals, they can continually enhance fine-grained correctness across tasks.

5.3 CASE STUDY OF REFINEMENT

As shown in Figure 5, using our editing process, the model first added an inactivation ball to each ion channel, then introduced an arrow pointing from the extracellular side to the intracellular side, subsequently placed some free sodium ions on the outside of the cell, and finally removed the duplicate labels from the illustration. We observe that (1) as the number of iterations increases, the image progressively addresses more grading prompts, demonstrating that our rubrics effectively improve the quality of the generated illustrations, and (2) during refinement, multiple grading prompts may be simultaneously improved, suggesting the potential of our method.

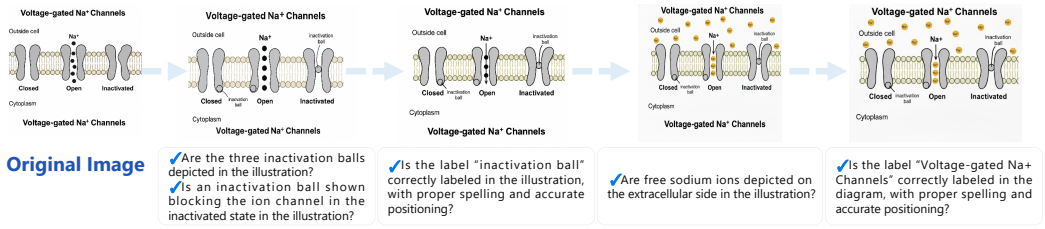

Figure 5: **Case of iterative refinement.** As editing iterations increase, the images gradually meet more grading prompts. Additionally, sometimes a single edit can address multiple grading prompts.

6 CONCLUSION

In this paper, we introduced TechImage-Bench, a new benchmark designed to address a critical gap in evaluating text-to-image models for technical image generation. We observed that while current models produced visually impressive results, they frequently exhibited fine-grained, fact-based errors that made them unsuitable for use in high-stakes domains such as science, engineering, and medicine. Standard evaluation metrics failed to capture these crucial inaccuracies. Our core contribution was a decompositional evaluation methodology, which replaced coarse and subjective judgments with a detailed, objective, binary yes-or-no set of evaluation rubrics using an LMM evaluator. Our experiments yielded two key findings. First, comprehensive testing on TechImage-Bench revealed that even state-of-the-art models performed poorly in accurately reproducing fine-grained scientific details. Second, we validated that the evaluation rubrics could serve as actionable feedback for image optimization, guiding models to revise their outputs and significantly improve their scores, revealing the potential of AI for precise and technical visual generation.

7 AI USE STATEMENT

In this work, we used generative AI tools to generate synthetic datasets, assist with translation, clean and reformat the dataset, and implement methods. Specifically, we used generative AI tools to transform the collected raw corpus into fine-grained evaluation rubrics and to further filter and refine the generated content, resulting in a high-quality dataset. In addition, to enable large-scale automated evaluation, we developed an LMM-based automated evaluator.

To ensure the quality and reliability of the dataset, we conducted rigorous manual inspection and evaluation of the generated data, and further screened and corrected samples containing obvious errors, ambiguities, or low-quality content. Meanwhile, to validate the proposed LMM-based evaluator, we compared its results with human judgments and assessed their agreement through consistency analysis. For further details, please refer to **Supplementary Materials**.

We take responsibility for the final content of this work, including text, claims or artifacts produced with the aid of generative AI.

8 ETHICS STATEMENT

8.1 INAPPROPRIATE CONTENT AND DISCRIMINATION

Given the involvement of LMMs, TechImage-Bench places significant emphasis on the potential risks associated with inappropriate content and discrimination during its construction and takes corresponding measures to minimize their impact on the development and use of the benchmark. To ensure the appropriateness and reliability of the benchmark content, all textual materials are manually reviewed and inspected before being incorporated into the benchmark, thereby minimizing the inclusion of potentially harmful, discriminatory, sensitive, or otherwise inappropriate content and further ensuring the overall integrity and safety of the benchmark.

8.2 ANTI-MISUSE

We recognize that, while technical image generation offers considerable convenience and value, it also carries potential risks of misuse. For example, such technologies may be used to fabricate misleading figures, create deceptive technical illustrations, or generate fake patent sketches, thereby undermining the authenticity and credibility of the resulting content. Therefore, we advocate for transparency in technical image generation, and we hope that TechImage-Bench can promote more rigorous, verifiable, and responsible research in this field.

9 REPRODUCIBILITY STATEMENT

We provide detailed descriptions of the dataset construction pipeline, LMM evaluator, and evaluation metrics in the main paper. For additional details on implementation, experimental settings, and the dataset, please refer to **Supplementary Materials**.

We will release our online evaluation benchmark. The TechImage-Bench dataset will be released under the MIT License.

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TechImage-Bench: Rubric-Based Evaluation for Technical Image Generation

(Supplementary Material)

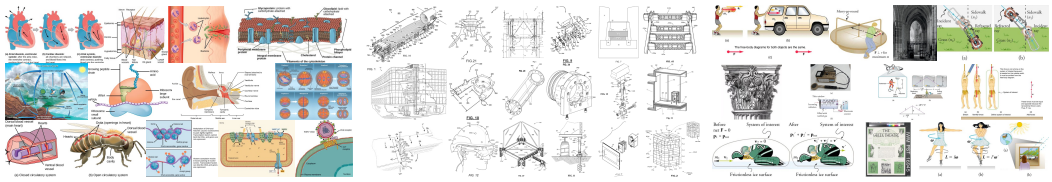


Figure A: Overview of three domains in TechImage-Bench.

This supplemental material mainly contains:

- Additional details of implementation in Section I
- Additional details of experimental setup in Section II
- Additional details of dataset in Section III
- Extra cases of benchmark in Section IV
- Extra cases of evaluation in Section V
- Limitations and broader impact in Section VI
- Online benchmark and code release in Section VII

I Additional Details of Implementation

For points expanding, we decompose constraints, *i.e.*, criteria, into a set of binary scoring questions that can be explicitly answered with *yes* or *no*. The model is asked to generate a set of binary scoring questions that can be explicitly answered with binary answers.

To further generate grading prompts of rubrics that characterize incorrect drawing behaviors which should not appear in the diagram, we formulate this step as an error-focused prompt generation task. For each label extracted during the label extraction process, we prompt the large model to identify the explicit or implicit constraint most relevant to that label.

All prompts can be found in our code.

II Additional Details of Experimental Setup

Image Generation For image generation, we provide the following prompt to the image generation models: `Generate a professional-style image strictly following the provided detailed description, without modifying any of the instructions. Detailed description: {detailed description} Ensure the perspective view allows clear visibility of all labeled components.`

Human Quality Evaluation In the quality evaluation of the dataset, we recruited 20 experts with relevant domain knowledge to review the rubrics. Annotators were asked to rate each rubric on a 1–5 scale. A score of 5 indicates complete consistency with no ambiguity. A score of 4 indicates no apparent errors. A score of 3 reflects minor inconsistencies, though the intended meaning can still be inferred using the full diagram and background knowledge. A score of 2 indicates the presence of errors or contradictions that are difficult to resolve even with background knowledge, but do not involve factual mistakes or direct conflicts with the original text. A score of 1 denotes clear factual

errors or direct contradictions with the original text. The results in Table 4 demonstrate the high quality and professionalism of our TechImage-Bench.

Table 4: **Human rating results and satisfactory ratio.** This proves the quality of our benchmark.

Domain	Rating	Satisfactory Ratio
Biology	4.0986	82.00%
Engineering	4.0964	84.21%
General	4.1045	84.85%

Consistency of LMM Evaluator Verifying the consistency between LMM evaluation results and human judgments is crucial. To this end, we conducted an additional human annotation study on the experimental results and compared the resulting scores with the evaluations produced by the LMM. We then calculated the score differences across multiple percentiles. Table 5 presents the range of discrepancies between human and LMM-based evaluations. The results show a high level of agreement between the LMM evaluator and human judgments. This indicates that even for the most ambiguous or complex samples, the LMM's evaluation results remain stable and highly consistent with human reviewers, without noticeable bias, thereby providing strong support for the objectivity and reliability of this benchmark evaluation.

Table 5: **Consistency of LMM evaluator.** The model's scores are very close to human evaluation results, suggesting that our evaluation results align closely with human judgment.

Percentile	Acc Difference	Score Difference
50%	0.0096	0.0046
80%	0.0400	0.0312
90%	0.0528	0.0422
100%	0.1000	0.0625

III Additional Details of Dataset

Our dataset is divided into three domains, as shown in Figure A. The biology domain contains illustrations sourced from biology textbooks, covering a wide range of scientific content, including cellular and organelle structures, physiological and metabolic processes, and ecological or evolutionary diagrams. The engineering domain consists of illustrations derived from patent drawings, depicting various architectural and mechanical structures. The general domain primarily includes schematic diagrams, as well as poster and architectural images.

IV Extra Cases of Benchmark

We provide extensive examples of model outputs on the benchmark. Please refer to Figures B-K.

V Extra Cases of Evaluation

To better illustrate the evaluation of our benchmark, we sample two different tasks. The first task aims to generate the process of synaptic transmission between two neurons, as shown in Figures L-Q. The second task aims to generate the gill structure of a fish, highlighting the gill arches, gill filaments, and the interactions between blood flow and water flow, as shown in Figures R-W. Although six baseline models demonstrate strong generative capabilities in open-domain image tasks, they still face substantial challenges when producing professional scientific diagrams that are structurally complex, process-rich, and demand a high level of precision. They commonly exhibit issues such as missing processes, misaligned structures, and incorrect labeling, making it difficult for them to meet the rigorous requirements of high-quality technical image generation.

VI LIMITATIONS AND BROADER IMPACT

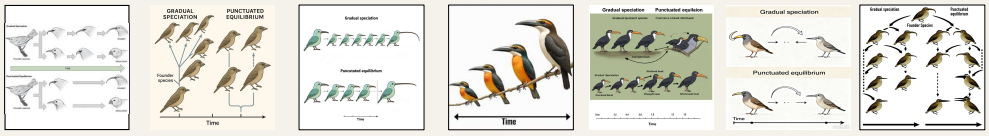
Limitations Although TechImage-Bench provides a scalable, fine-grained, and highly interpretable evaluation framework for technical image generation, its current domain coverage mainly focuses on biology, engineering, and general scenarios. Expanding the benchmark to additional professional domains in future work will further enhance its breadth and diversity. In addition, while most steps of the rubric construction process are automated, a certain degree of manual filtering and text refinement is still required. Although our experiments show high alignment between rubric quality and human experts, we plan to incorporate external knowledge sources and more advanced reasoning methods to achieve a fully automated benchmark construction pipeline.

Broader Impact TechImage-Bench aims to advance technical image generation toward models with high accuracy and structured understanding. This direction has potential positive impact across education, publishing, industrial documentation, and patent drafting in reducing repetitive diagram creation, improving productivity, and lowering the barriers to professional visual communication.

VII ONLINE BENCHMARK AND CODE RELEASE

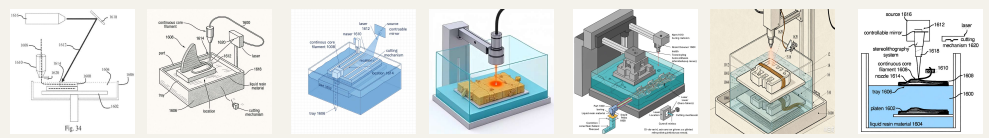
We will release our online evaluation benchmark. Our TechImage-Bench dataset will be released under the MIT license.

Detailed Description:
A detailed biological diagram illustrating two types of speciation: gradual speciation and punctuated equilibrium.
At the top of the gradual speciation section is the label "Gradual speciation." This section shows a founder bird species as the starting point of a branching sequence. Along one branch, a series of intermediate bird forms is depicted, each with a hooked beak that becomes progressively longer and thinner. Along the other branch, another series of intermediate forms is shown, each with a straight beak that gradually becomes shorter and thicker. Arrows along both branches indicate the direction of morphological change over time.
At the top of the punctuated equilibrium section is the label "Punctuated equilibrium." This section also begins with the same founder bird species. From this point, two branches emerge: one leading to birds with hooked beaks, and the other to birds with straight beaks. The diagram shows that both types remain unchanged for a long period, represented by long horizontal segments with no morphological changes. After this period of stability, new forms suddenly appear along each branch: the hooked-beak lineage develops longer, thinner hooked beaks, while the straight-beak lineage develops shorter, thicker straight beaks. Arrows indicate the direction of these later morphological changes.
A horizontal timeline labeled "Time" runs across the entire diagram, representing the progression of evolutionary change over time.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
A technical schematic illustration depicting a stereolithography three-dimensional printing process with deposited reinforcing fibers. The diagram shows the following components accurately arranged according to the description:
1. Part 1600: A three-dimensional object in the process of being constructed, shown partially formed within the printing system.
2. Liquid resin material 1604: A photopolymer resin in which the part 1600 is submerged, filling the interior of a tray 1606 that holds the resin.
3. Platen 1602: A support platform connected above the part 1600, illustrated in a position that indicates sequential downward movement as each new layer of the part is formed.
4. Continuous core filament 1608: A reinforcing filament shown fed through a nozzle 1610 and deposited onto the surface of the newest layer of part 1600. The filament appears laid directly onto the freshly formed layer.
5. Laser 1612: A curing laser depicted curing the resin material around the continuous core filament 1608 at location 1614, which is positioned behind the path traced by nozzle 1610.
6. Laser source 1616 and controllable mirror 1618: The laser 1612 is shown emerging from source 1616 and directed toward the part 1600 by the controllable mirror 1618.
7. Cutting mechanism 1620: A device included within the system, shown as an element capable of cutting or terminating the continuous core filament 1608 when required.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

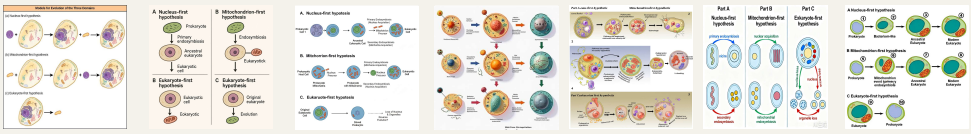
Detailed Description:
A physics illustration showing a swimmer underwater beside a vertical pool wall. The swimmer is facing to the left with her feet planted against the wall as she prepares to push off. A boundary enclosing her body is marked as the "System of interest."
Arrows indicating forces act directly on the swimmer:
- An arrow originating at her feet and pointing toward the right is labeled "F_feet on wall."
- An opposing arrow originating from the wall and pointing toward her feet is labeled "F_wall on feet."
- An upward arrow acting on her body represents buoyancy and is labeled "BF." A downward arrow acting on her body represents her weight and is labeled "w."
- A separate arrow pointing to the left shows the "Direction of acceleration," indicating the motion she will undergo once she pushes off.
An inset free-body diagram is placed to the side. This inset contains only simplified lines and arrows representing the same forces acting on the swimmer:
- A right-pointing arrow labeled "F_feet on wall."
- A left-pointing arrow labeled "F_wall on feet."
- An upward arrow labeled "BF."
- A downward arrow labeled "w."



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

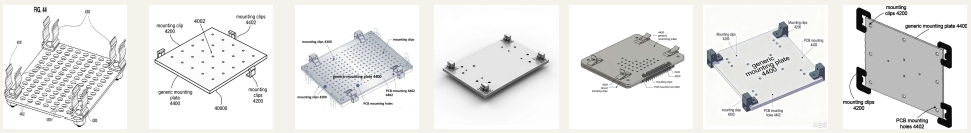
Figure B: Generation cases of benchmark (Group 1).

Detailed Description:
A detailed biology diagram divided into three clearly separated parts, each depicting an alternate hypothesis of eukaryotic and prokaryotic evolution. Part A – "Nucleus-first hypothesis." This section illustrates a primary endosymbiotic event in which a prokaryotic cell acquires a nucleus, forming an ancestral eukaryotic cell. Following this, a secondary endosymbiotic event is shown in which the ancestral eukaryotic cell incorporates mitochondria. Arrows indicate the sequence from the original prokaryotic cell, to the nucleated ancestral eukaryotic cell, and finally to the mitochondria-containing eukaryotic cell. Part B – "Mitochondrion-first hypothesis." This section depicts a prokaryotic host cell first acquiring mitochondria through an endosymbiotic event. After this initial acquisition, the prokaryotic host containing mitochondria is shown developing a nucleus, forming a eukaryotic cell. Arrows indicate the progression from the original prokaryotic host, to the mitochondria-containing host cell, and then to the nucleated eukaryotic cell. Part C – "Eukaryote-first hypothesis." This section shows an original eukaryotic cell containing a nucleus and organelles. The diagram then represents an evolutionary sequence in which these eukaryotic cells lose their nuclei and organelles, giving rise to prokaryotic cells. Arrows display the transition from the original eukaryotic form to simplified cells lacking nuclei and organelles.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
A perspective-view technical illustration depicting a generic mounting structure with the following elements shown and labeled according to the description:
1. Generic mounting plate 4400: A large, flat surface forming the main body of the illustration, shown as a rectangular or square plate viewed in perspective.
2. Mounting clips 4200: Four clips attached along the edges of the generic mounting plate 4400, illustrated as protruding holding features fixed to the perimeter of the plate. Each clip is labeled "mounting clips 4200."
3. PCB mounting holes 4402: Multiple small, evenly spaced holes distributed across the surface of the generic mounting plate 4400. One or more of these holes is labeled "PCB mounting holes 4402."



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
An illustration showing a teacher pushing a cart to the right. The teacher and the cart, which carries books and boxes, are enclosed within a boundary labeled "System." Force vectors acting on the teacher–cart system are shown:
- A right-pointing arrow originating at the teacher's hands and applied to the cart is labeled "F_teacher," representing the teacher's push.
- A left-pointing arrow of equal length originating at the cart and directed back toward the teacher is labeled "F_cart," representing the force exerted by the cart.
At the lower area of the cart:
- A left-pointing arrow is drawn to represent friction and labeled "f."
Near the teacher's feet:
- A right-pointing arrow labeled "F_floor" shows the force of the floor acting on the teacher's feet.
- A left-pointing arrow of equal length labeled "F_foot" represents the force exerted by the teacher's foot.
An inset contains a simplified free-body diagram of the "System." In this inset:
- A left-pointing arrow labeled "f" represents friction.
- A downward arrow labeled "w" represents the weight of the system.
- An upward arrow labeled "N" represents the normal force.
- A right-pointing arrow labeled "F_floor" represents the floor's force on the system.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

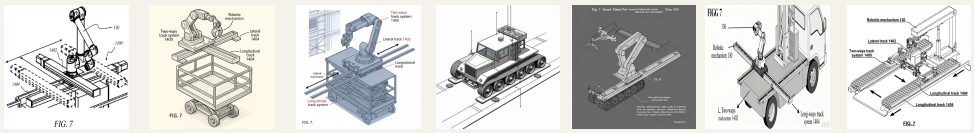
Figure C: Generation cases of benchmark (Group 2).

Detailed Description:
A detailed illustration showing the steps in the HIV life cycle, divided into seven clearly labeled stages, with all components visually represented according to the descriptions.
Step 1 "HIV fuses to the host cell surface." The illustration shows an HIV virion approaching a host immune cell. gp120 glycoproteins are displayed on the viral envelope. One gp120 molecule is shown attaching to a CD4 receptor on the host cell membrane, followed by attachment to a co-receptor labeled "Co-receptor (CCR5 or CXCR4)." After these attachments, the viral envelope is shown fusing with the host cell membrane. Labels included in this step: "HIV fuses to the host cell surface.", "gp120", "CD4", "Co-receptor (CCR5 or CXCR4)", "Host immune cell."
Step 2 "HIV RNA, reverse transcriptase, integrase, and other viral proteins enter the host cell." The fused membrane allows the contents of the virion to be released into the host cell cytoplasm. Viral RNA, reverse transcriptase, integrase, and additional viral proteins are illustrated dispersing into the cell. Labels included: "HIV RNA, reverse transcriptase, integrase, and other viral proteins enter the host cell.", "Viral RNA", "Reverse transcriptase", "Integrase."
Step 3 "Viral DNA is formed by reverse transcription." Inside the cytoplasm, viral RNA is shown being converted into viral DNA by reverse transcriptase. The diagram depicts reverse transcriptase bound to a strand of viral RNA and producing a double-stranded DNA molecule. Labels included: "Viral DNA is formed by reverse transcription.", "Viral RNA", "Reverse transcriptase", "Viral DNA."
Step 4 "Viral DNA is transported across the nucleus and integrates into the host DNA." A complex containing viral DNA is illustrated being transported toward and across the nuclear membrane. Inside the nucleus, viral DNA integrates into host DNA. The preintegration complex is shown surrounding the viral DNA during transport. Labels included: "Viral DNA is transported across the nucleus and integrates into the host DNA.", "Viral DNA", "Host DNA", "Preintegration complex."
Step 5 "New viral RNA is used as genomic RNA and to make viral proteins." Inside the nucleus, transcription produces new viral RNA. The illustration shows this new viral RNA leaving the nucleus and being used both as genomic RNA and as templates for the production of viral proteins. Labels included: "New viral RNA is used as genomic RNA and to make viral proteins.", "New viral RNA."
Step 6 "New viral RNA and proteins move to the cell surface and a new, immature HIV forms." Newly produced viral RNA and viral proteins are shown moving through the cytoplasm toward the host cell membrane. At the membrane, an immature HIV particle begins to form as these components assemble. Label included: "New viral RNA and proteins move to the cell surface and a new, immature HIV forms."
Step 7 "The virus matures by protease, releasing individual HIV proteins." This part of the diagram shows the immature virus becoming a mature virus through the action of protease.



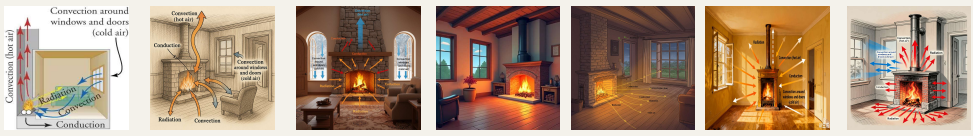
Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
A scientific illustration depicting a two-track system adapted for slidable mounting of a robotic mechanism, with all components shown as described:
1. Robotic mechanism 130: A robotic unit positioned on top of the lateral track, illustrated as securely mounted so that its structure clearly engages with the sliding interface of the lateral track 1402.
2. Two-ways track system 1400: The combined assembly consisting of both the lateral track and the longitudinal track, represented as an integrated dual-axis sliding system supporting the robotic mechanism 130.
3. Lateral track 1402: A track shown supporting the robotic mechanism 130, depicted as allowing movement along its length. The robotic mechanism appears slidable on this track, indicating lateral motion capability.
4. Longitudinal track 1404: A second track beneath the lateral track 1402, illustrated as oriented perpendicular to the lateral track. The lateral track 1402 is shown mounted onto the longitudinal track 1404 in a manner that allows the entire lateral-track-and-robot assembly to slide along the longitudinal direction.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

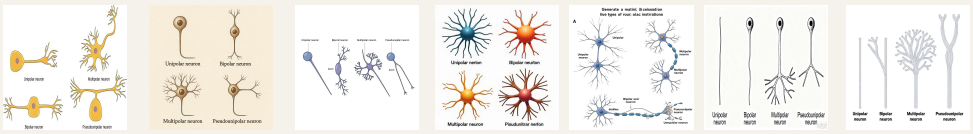
Detailed Description:
A cozy room with a traditional fireplace set along one wall. A fire burns brightly inside the fireplace, casting warm illumination across the room. A chimney extends upward from the fireplace. The room includes open windows and visible doorways through which outside air can enter.
Arrows and indicators illustrate different types of heat transfer:
- Arrows radiating outward from the fireplace into the room are labeled "Radiation," depicting heat emitted directly from the fire.
- Arrows within the solid structure of the fireplace and through the surrounding walls are labeled "Conduction," showing heat moving slowly through these materials.
- An upward-pointing arrow inside the chimney is labeled "Convection (hot air)," showing warm air rising through the chimney.
- Arrows entering the room through the open windows and doorways are labeled "Convection around windows and doors (cold air)," indicating cold air flowing inward.
Each arrow reflects the appropriate direction of heat transfer as described, with the fireplace depicted as the focal point to emphasize the different heat transfer processes occurring throughout the room.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

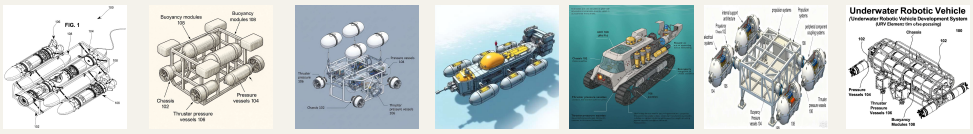
Figure D: Generation cases of benchmark (Group 3).

Detailed Description:
A detailed scientific illustration depicting the four main types of neurons, arranged in a clear, comparative layout.
One figure shows a Unipolar neuron, labeled "Unipolar neuron." The cell body is positioned to one side with a single, long axon extending from it, and no dendrites emerging from the cell body.
Another figure shows a Bipolar neuron, labeled "Bipolar neuron." The cell body occupies the center, with one axon extending from one side and one dendrite extending from the opposite side, creating a linear, two-ended structure.
A third figure shows a Multipolar neuron, labeled "Multipolar neuron." The cell body gives rise to one long axon and several short, highly branched dendrites radiating outward in multiple directions, forming a dense dendritic field around the soma.
The final figure shows a Pseudounipolar neuron, labeled "Pseudounipolar neuron." A single axon emerges from the cell body and then splits into two distinct branches a short distance away, with each branch extending in different directions.
All four neuron types are placed in an organized layout with clearly rendered structural differences. The labels appear next to their corresponding neurons, and the lines, branching patterns, and axonal paths are drawn distinctly to highlight the contrasts among the four neuron types.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
A scientific illustration showing a perspective view of an exemplary Underwater Robotic Vehicle (URV) 100 constructed in accordance with an Underwater Robotic Vehicle Development System, with the following elements depicted as detailed components of the vehicle:
1. Chassis 102: An open structural framework forming the central body of the URV 100. The chassis is illustrated as a modular, skeletal structure to which all other subsystems are attached.
2. Pressure vessels 104: Multiple cylindrical or capsule-shaped pressure vessels mounted onto the chassis 102. These vessels are shown as enclosed components that house electrical systems, internal support architecture, propulsion-related electronics, and coupling interfaces for peripheral systems.
3. Thruster pressure vessels 106: A set of additional pressure vessels distinct from pressure vessels 104, also attached to the chassis 102. These are illustrated as housings dedicated to thruster-related components and positioned so that they are visually distinguishable from the main pressure vessels.
4. Buoyancy modules 108: Several buoyancy components arranged around the URV 100 and supported by the chassis 102.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

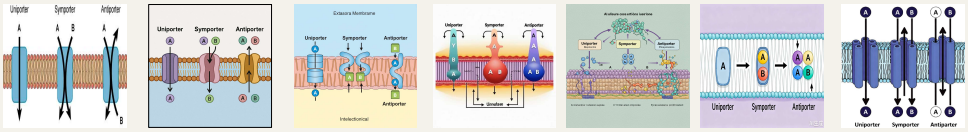
Detailed Description:
An illustration showing a transparent fish tank with a clearly visible fish inside and an observer positioned so that they are looking directly at the corner of the tank. Two distinct light rays originate from the fish. Each ray travels through the water toward the corner region and bends as it crosses the air–water boundary. After bending at these refraction points, the rays continue through the air toward the observer's eyes. The locations where each ray changes direction at the interface are called "Refraction points." A visual representation of the perceived position of the fish is included: duplicated images of the fish appear on each side of the tank corner, aligned with the refracted light paths to show where the observer perceives the fish to be based on the bending of the rays.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Figure E: Generation cases of benchmark (Group 4).

Detailed Description:
A detailed illustration showing a cross-section of a plasma membrane with three distinct transport proteins embedded in the phospholipid bilayer, each demonstrating a different transport mechanism. The plasma membrane is depicted as a phospholipid bilayer, with hydrophilic heads facing outward on both sides and hydrophobic tails forming the inner region. Three embedded membrane transport proteins are spaced from left to right.
On the left side, a protein labeled "Uniporter" is shown spanning the membrane. A single type of molecule labeled "A" is positioned on one side of the membrane and shown moving through the uniporter in a single direction, indicated by an arrow.
At the center of the membrane, a second transport protein labeled "Symporter" is embedded in the bilayer. Two different molecules, labeled "A" and "B," are shown on the same side of the membrane and are depicted moving together through the symporter in the same direction, indicated by a shared arrow.
On the right side, a third transport protein labeled "Antiporter" is shown. Two molecules, "A" and "B," are illustrated on opposite sides of the membrane and shown moving in opposite directions through the antiporter, each indicated with its own directional arrow.
The overall diagram clearly displays the phospholipid bilayer anchoring the three transport proteins and highlights the distinct movement patterns for a uniporter, symporter, and antiporter.



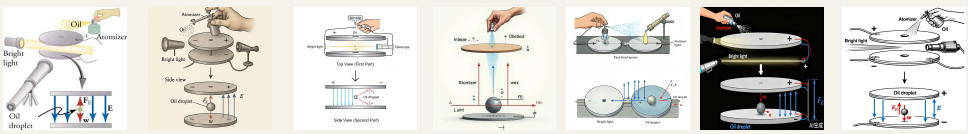
Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
A detailed exploded perspective illustration depicting an exemplary thruster motor and coupling assembly, with all components shown in separated alignment along a common central axis to emphasize their assembly order and the cylindrical geometry of the motor:
1. Motor assembly 5810: The overall assembly represented by the aligned sequence of components, shown in an exploded configuration to illustrate how each part fits together.
2. Motor 5800: A cylindrical motor body depicted as the primary component of the assembly. Its cylindrical form is emphasized, with the front face oriented toward the bulkhead disk 5802. The motor is shown spaced apart from the bulkhead disk to indicate disassembly.
3. Bulkhead disk 5802: A circular disk positioned directly in front of the motor 5800, aligned on the same central axis. The disk is illustrated as the structural interface to which the motor attaches.
4. Bulkhead screws 5804: Several screws shown floating in aligned positions around the perimeter of the motor's mounting face, oriented as if ready to fasten the motor 5800 to the bulkhead disk 5802. The screws are depicted in their respective positions relative to the screw holes of the disk.
5. Motor shaft 5808: A linear shaft extending forward from the center of the motor 5800. Its straight, axial extension is shown clearly to indicate the power-transfer path from the motor.
6. Motor coupling 5806: A coupling component illustrated concentrically aligned with the end of the motor shaft 5808.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

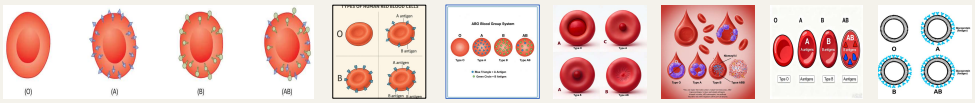
Detailed Description:
A two-part scientific illustration demonstrating the Millikan oil-drop experiment.
Top View (First Part):
- A pair of circular parallel plates is shown, one positioned above the other.
- The upper plate displays a "+" sign and contains a small central hole.
- The lower plate displays a "–" sign.
- Each plate has an attached wire indicating that they are oppositely charged.
- Just above the upper plate, a hand holds an atomizer from which a spray labeled "Oil" emerges downward toward the hole in the upper plate.
- A horizontal beam labeled "Bright light" shines from the left across the space between the plates.
- A telescope-like viewing device is positioned so that its lens points toward the region between the plates, indicating the observation path.
Connector: A downward-pointing arrow links the top view to the second part of the illustration.
Side View (Second Part):
- An edge-on view of the same two parallel plates is displayed, with the upper plate labeled "+" and the lower plate labeled "–".
- Between these plates appears a gray sphere labeled "Oil droplet."
- Four vertical blue arrows extend from the upper plate toward the lower plate, evenly spaced across the gap; the arrow farthest to the right is labeled "E."
- A short red arrow extends upward from the oil droplet toward the upper plate and is labeled "F_E."
- Another short red arrow extends downward from the oil droplet toward the lower plate and is labeled "w."



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

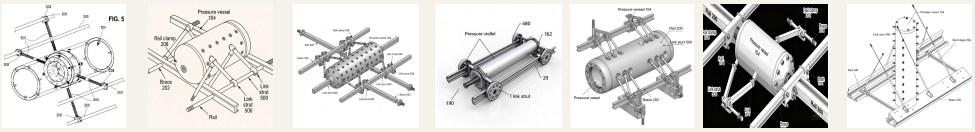
Figure F: Generation cases of benchmark (Group 5).

Detailed Description:
A detailed biology diagram illustrating the four types of human red blood cells in the ABO blood group system, arranged in four distinct sections. One section shows a Type O red blood cell, labeled "O", depicted as a smooth, round red blood cell with no antigens on its surface. A second section shows a Type A red blood cell, labeled "A", with multiple surface glycoproteins identified as A antigens displayed clearly on the membrane. A third section shows a Type B red blood cell, labeled "B", with its membrane displaying B antigens marked as distinct surface glycoproteins. The final section shows a Type AB red blood cell, labeled "AB", with both types of surface glycoproteins—A antigens and B antigens—present together on the cell surface.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
A perspective technical illustration depicting the structural relationship between a pressure vessel and its mounting components, shown as an integrated but modular assembly, with all elements arranged according to the description:
1. Pressure vessel 104: A cylindrical vessel positioned at the center of the illustration. The exterior surface of the vessel is shown with multiple threaded holes distributed around its circumference and along its length.
2. Rail 200: Horizontal structural rails on either side of the pressure vessel.
3. Rail clamp 208: Clamps attaching the link struts to the rails.
4. Link strut 500: Rods connected at one end to the rails via the rail clamps and at the other end to the pressure vessel via threaded holes.
5. Brace 202: Structural support beams that are also illustrated to show their typical threaded ends similar to link struts.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

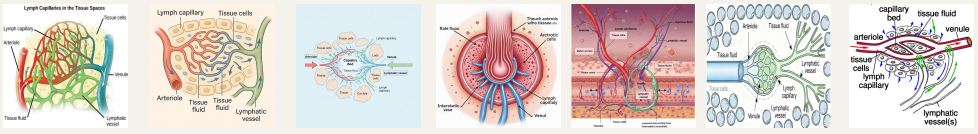
Detailed Description:
A two-panel scientific illustration comparing an upward-accelerating elevator with a stationary room on Earth, each showing the same visual effect on a beam of light.
Left Panel (figure a): Panel (a) presents an elevator depicted as accelerating upward, accompanied by a clear label "Accelerated up." Inside the elevator stands a person holding a flashlight and directing its beam horizontally toward a nearby wall. The emitted beam is shown curving downward as it travels across the elevator interior, with the curvature visibly exaggerated to emphasize the effect that appears inside an accelerating reference frame.
Right Panel (figure b): Panel (b) depicts a room on Earth labeled "Earth," with the panel itself marked as "(b)." The same person stands inside the room in a similar position and orientation, again shining a flashlight horizontally toward the wall. The beam of light appears to bend downward in the same exaggerated fashion as in panel (a), illustrating the identical visual effect produced here by gravity rather than acceleration.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

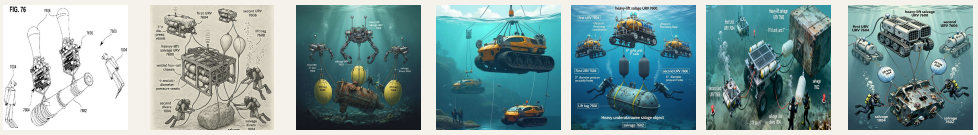
Figure G: Generation cases of benchmark (Group 6).

Detailed Description:
A detailed biology diagram illustrating the movement of fluid between blood vessels and the lymphatic system.
At the center of the diagram is a capillary bed, shown as a dense network of thin capillaries branching outward from an arteriole on the left and converging toward a venule on the right. The arteriole is labeled "Arteriole," and the venule is labeled "Venule." Surrounding the capillary bed are multiple tissue cells, each labeled collectively as "Tissue cells." The spaces between these cells contain interstitial liquid labeled "Tissue fluid." Arrows extend outward from the capillaries into this interstitial space to depict the diffusion of fluid from the blood into the surrounding tissues. Encircling the capillary bed are several thin-walled, blind-ended vessels identified as "Lymph capillary." These structures are shown collecting excess tissue fluid. Additional arrows illustrate the movement of fluid from the interstitial space into these lymph capillaries. Further along the diagram, the lymph capillaries merge into larger tubular structures labeled "Lymphatic vessel."



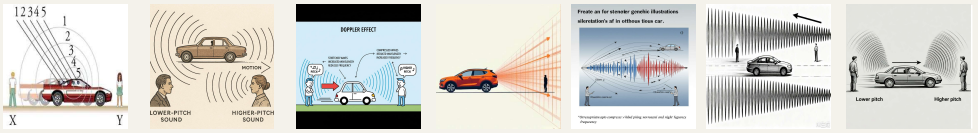
Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
A perspective scientific illustration depicting an exemplary heavy-lift salvage URV system operating underwater, with all components shown as descriptive visual elements:
1. Heavy-lift salvage URV 7600: A central vehicle illustrated with a heavy welded four-cell chassis. The chassis is shown built from a 9" grid unit framework with 1" diameter rails, giving it a rugged, reinforced appearance suitable for heavy salvage tasks.
2. First URV 7604 and Second URV 7606: Two additional underwater robotic vehicles depicted assisting the main URV in the lift operation. Each assisting URV is shown equipped with multiple cylindrical pressure vessels of 3" and 6" diameter mounted to their chassis structures.
3. Salvage divers 1004: Two scuba divers positioned near the heavy salvage object. The divers are shown actively fastening inflatable lift bags to the salvage object using underwater straps or rigging lines.
4. Lift bag 7608: Two large inflatable lift bags attached to the salvage object. Each lift bag is depicted connected with cables running toward both the assisting URVs and the salvage object.
5. Salvage 7602: A heavy underwater salvage object positioned beneath the lift bags. It is illustrated with a textured, weighty appearance to emphasize its mass and underwater condition.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
A scientific illustration depicting a car moving toward the right, with its motion indicated by right-pointing arrows placed near the car. Sound waves emanate outward from the car in all directions.
Ahead of the car (to the right), the sound waves appear compressed: the wavefronts are drawn close together, clearly showing a reduced wavelength and representing a higher perceived frequency. A stationary observer is positioned on the right side facing the approaching car. This observer is placed so it is evident they are in front of the car, aligned with the compressed wavefronts to indicate that they hear a higher-pitch sound.
Behind the car (to the left), the sound waves are drawn farther apart: the wavefronts are spaced widely, illustrating an increased wavelength and reduced perceived frequency. A second stationary observer stands on the left side, behind the car, aligned with the stretched-out wavefronts to indicate that they hear a lower-pitch sound.



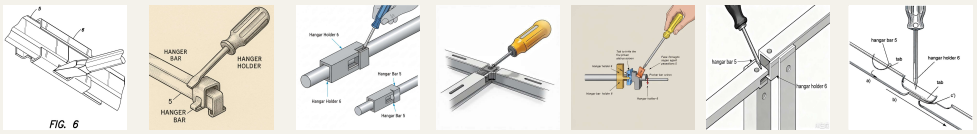
Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Figure H: Generation cases of benchmark (Group 7).

Detailed Description:
A detailed illustration showing the process of endocytosis and exocytosis in an amoeba.
The amoeba is depicted with an extended pseudopod reaching outward toward a particle labeled "Food particle." This pseudopod surrounds and encloses the food particle, illustrating the process labeled "Endocytosis." An arrow indicates the movement of the food particle from the external environment into the amoeba. Inside the amoeba, the engulfed food particle is enclosed within a membrane-bound structure labeled "Vesicle." This vesicle is shown moving deeper into the cytoplasm, where it fuses with a spherical organelle labeled "Lysosome." The fused structure displays digestive enzymes breaking down the food particle. A separate vesicle containing undigested waste is depicted migrating toward the cell membrane. At the membrane, the vesicle is shown merging with it, releasing its waste contents to the outside of the cell. This outward release is illustrated with arrows demonstrating the direction of movement and represents the process of exocytosis.
The entire sequence—from pseudopod engagement to vesicle digestion to waste expulsion—is visually connected with arrows to show the directional flow of endocytosis and exocytosis.



Detailed Description:
A scientific illustration showing a perspective view of a screwdriver bending a tab of a hanger holder to lock the hanger holder in a position along the hanger bars. The illustration shows hanger holder 6 with a tab that bends through an opening and presses firmly against the corresponding hanger bar 5.



Detailed Description:
A scientific illustration showing a flat mirror positioned perpendicular to the viewer's line of sight. The thin edge of the mirror is visible and labeled "Flat mirror." To the left of the mirror sits a bottle, placed at a measurable distance from the mirror and labeled "do." Two rays originate from the bottle: Each ray travels from a point on the bottle toward the mirror surface. At the mirror, each ray reflects according to the law of reflection and continues toward an eye positioned in front of the mirror. The eye is shown looking toward the mirror, receiving the reflected rays. Behind the mirror, the backward extensions of the reflected rays are drawn as dashed lines. These extensions appear to converge at a point directly across from the bottle on the right side of the mirror. At this point, a duplicate of the bottle is shown, representing the virtual image. This virtual bottle is labeled "di" to indicate its distance from the mirror, matching the original object distance on the opposite side.

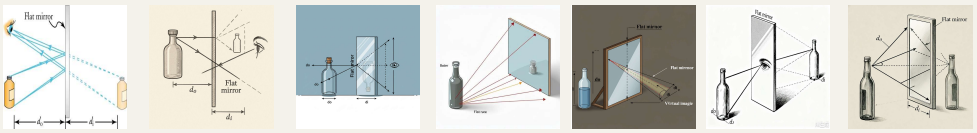
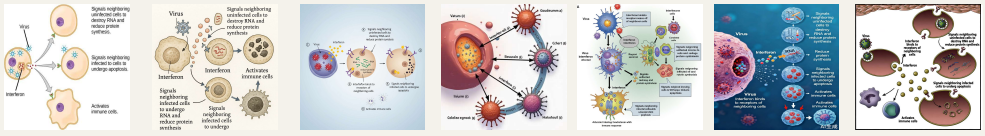


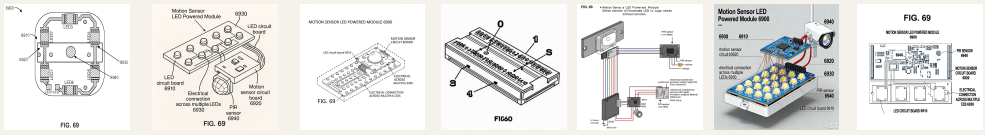
Figure I: Generation cases of benchmark (Group 8).

Detailed Description:
A detailed scientific illustration shows a virus-infected cell secreting interferon and influencing surrounding cells.
On the left side of the diagram, a cell containing multiple viral particles is shown, with one particle labeled "Virus." The infected cell is depicted releasing small signaling molecules labeled "Interferon." These interferon molecules spread outward from the infected cell toward nearby cells. The neighboring cells are illustrated with surface receptors that bind to the interferon molecules.
There are three types of neighboring cells:
Uninfected cells: These cells respond to interferon by degrading their own RNA and reducing protein synthesis. This is labeled "Signals neighboring uninfected cells to destroy RNA and reduce protein synthesis."
Infected neighboring cells: These cells are shown undergoing programmed cell death (apoptosis), labeled "Signals neighboring infected cells to undergo apoptosis."
Immune cells: A separate group of immune cells is shown becoming activated in response to interferon, labeled "Activates immune cells."



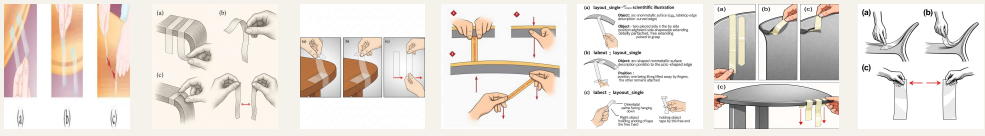
Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
A scientific illustration depicting a perspective view of FIG. 69, showing an embodiment of a Motion Sensor LED Powered Module with all components presented as structural features of the module:
1. Motion Sensor LED Powered Module 6900: The overall module that includes all the components and is indicated by the numeral 6900.
2. LED circuit board 6910: A circuit board positioned within the module, depicted with multiple LED elements mounted along its surface. The board is shown as a flat rectangular substrate carrying the LED array, clearly labeled as LED circuit board 6910.
3. Motion sensor circuit board 6920: This circuit board is responsible for controlling the LED lights, and is connected to the LED circuit board, clearly labeled as numeral 6920.
4. Electrical connection across multiple LEDs 6930: This connection spans across multiple LED lights and is clearly labeled with numeral 6930.
5. PIR sensor 6940: The Passive Infrared Sensor (PIR sensor) detects motion and is clearly labeled with numeral 6940.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

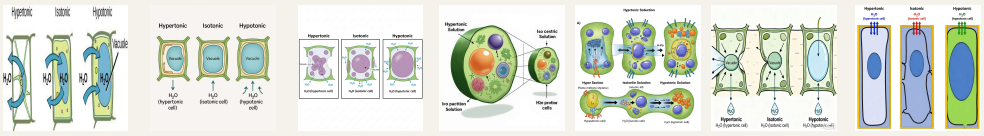
Detailed Description:
A three-part scientific illustration arranged sequentially and labeled (a), (b), and (c).
Part (a): In the upper-left corner, the label "(a)" appears. Two pieces of sticky tape are shown adhered side by side along the edge of an arc-shaped, nonmetallic object, such as the curved rim of a tabletop or the rounded edge of a chair seat. Each tape piece lies smoothly against the curved surface. A person's fingers are positioned near the free end of one of the tape pieces, close enough to indicate contact without yet lifting the tape.
Part (b): In the upper-left corner of this second illustration appears the label "(b)." A person's fingers are shown lifting one of the tape pieces away from the arc-shaped object. The lifted tape arches outward from the surface while the second tape piece remains fully attached to the curved object. The scene captures the moment of separation, with the tape being peeled back while the other tape stays in place.
Part (c): This portion is labeled "(c)" in the upper-left corner. A left hand and a right hand each hold one piece of tape by its free end, with both tape pieces hanging vertically downward from the fingers. Between the two hanging tape pieces, two short red arrows point inward toward each other, each arrow beginning at the free end of a tape piece.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

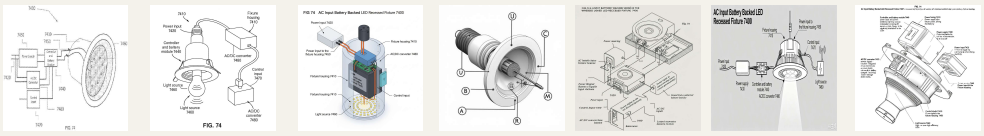
Figure J: Generation cases of benchmark (Group 9).

Detailed Description:
A detailed biology diagram illustrating the effects of different tonicity solutions on plant cells, arranged in three sections from left to right.
Left Section — "Hypertonic." This section shows a plant cell in a hypertonic solution. The plasma membrane is completely pulled away from the rigid cell wall, and the central organelle labeled "Vacuole" appears shrunken. Arrows point outward from the cell to depict water leaving the cytoplasm, labeled "H_2O (hypertonic cell)."
Middle Section — "Isotonic." In this section, the plant cell is shown in an isotonic environment. The plasma membrane is slightly pulled away from the cell wall, and the "Vacuole" retains its normal size. Arrows point both into and out of the cell to indicate balanced water movement, labeled "H_2O (isotonic cell)."
Right Section — "Hypotonic." This section depicts a plant cell in a hypotonic solution. The plasma membrane is pressed firmly against the inner surface of the cell wall, and the "Vacuole" appears enlarged. Arrows point inward toward the cell to show water entering, labeled "H_2O (hypotonic cell)."



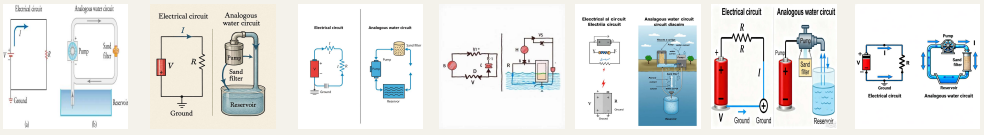
Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Detailed Description:
A perspective-view scientific illustration depicting FIG. 74, showing an embodiment of a recessed fixture version of a wireless light bulb with AC input and a battery backup positioned between the power supply and the light source. The diagram presents all components as structural elements of a single integrated system, each labeled with its corresponding reference numeral:
1. AC Input Battery Backed LED Recessed Fixture 7400 - The entire assembled fixture.
2. Fixture housing 7410 - The main body or casing housing the internal components.
3. Power input 7420 - The point where AC power is received into the system.
4. Power supply 7430 - The device external to the housing which drives power for LEDs.
5. Controller and battery module 7440 - A module connected to the power supply and light source to manage power delivery and battery backup.
6. Power input to the fixture housing 7450 - The connection point bringing power into the main housing.
7. Light source 7460 - The LED or LEDs used to emit light.
8. Control input 7470 - The mechanism or interface used to control the operation of the light fixture, could be a wiring connection or a wireless receiver.
9. AC/DC converter 7480 - The component that converts AC power to DC, recharging the battery in the process.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

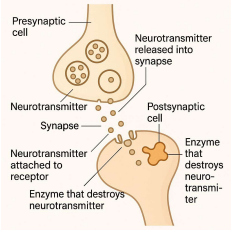
Detailed Description:
A two-part scientific illustration arranged side by side, comparing an electrical circuit with an analogous water-flow system.
Left Side: Electrical Circuit Diagram — titled "Electrical circuit": This portion presents a standard electrical schematic. A battery, shown in red, appears with its positive terminal marked by a longer line carrying a "+" sign and its negative terminal marked by a shorter line with a "–" sign. From the battery, circuit lines connect to a zigzag symbol representing a resistor labeled "R." Along the circuit path, a blue line illustrates the direction of the electric current and is labeled "I." The diagram includes a designated ground node labeled "Ground," indicating the return path of the circuit. All elements are connected in a continuous loop to clearly convey the flow of current through the components.
Right Side: Analogous Water Circuit — titled "Analogous water circuit": This section depicts a water-flow system arranged to mirror the structure of the electrical circuit. A pump labeled "Pump" represents the battery, providing the driving force for the water flow. Downstream, a container shaped and labeled as a "Sand filter" represents the resistor, visibly placed in the flow path to create resistance analogous to electrical resistance. Arrows trace the movement of water through the system, illustrating that the water current remains the same throughout the entire loop, paralleling the constant current in the electrical circuit. The path returns to a holding basin labeled "Reservoir," serving as the analog of the electrical ground node.



Reference Image | GPT-Image | Nano Banana | Flux | Imagen3 | Seedream | wan2.5

Figure K: Generation cases of benchmark (Group 10).

Detailed Description:
A detailed biological diagram showing the process of synaptic transmission between neurons, as well as the subsequent breakdown of neurotransmitters. It shows two closely positioned bulbous cells—one representing the presynaptic cell and the other representing the postsynaptic cell. Between them is a gap labeled "Synapse." The presynaptic cell contains vesicles filled with neurotransmitters.
In the image, some vesicles are shown fusing with the presynaptic membrane and releasing neurotransmitters into the synaptic gap, labeled "Neurotransmitter released into synapse." The neurotransmitters then travel across the gap and bind to specific receptors on the postsynaptic membrane, labeled "Neurotransmitter attached to receptor."
On the surface of the postsynaptic cell, an enzyme labeled "Enzyme that destroys neurotransmitter" is depicted to illustrate the termination of the signaling process.
The diagram includes the following accurately labeled components according to the description: "Presynaptic cell," "Postsynaptic cell," "Neurotransmitter," "Neurotransmitter released into synapse," "Neurotransmitter attached to receptor," "Enzyme that destroys neurotransmitter," and "Synapse."

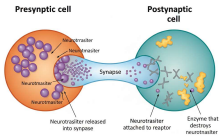


GPT-Image

	C1	**Closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells.**
✓	P1.1	Are there bulbous protrusions depicted on the postsynaptic cell?
✓	P1.2	Are there bulbous protrusions depicted on the presynaptic cell?
✓	P1.3	Does the image show closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells?
✓	P1.4	Does the illustration avoid depicting flat or irregular shapes for the presynaptic and postsynaptic protrusions instead of bulbous shapes?
✗	P1.5	Does the illustration avoid depicting large gaps between the presynaptic and postsynaptic cells instead of closely juxtaposed bulbous protrusions?
✓	P1.6	Is the label "Postsynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C2	**The presynaptic cell stores neurotransmitter in synaptic vesicles.**
✓	P2.1	Are the synaptic vesicles shown to contain neurotransmitters?
✓	P2.2	Does the illustration depict synaptic vesicles within the presynaptic cell?
✓	P2.3	Does the illustration show a presynaptic cell?
✓	P2.4	Does the illustration show the presynaptic cell storing neurotransmitter in synaptic vesicles?
✓	P2.5	Does the illustration avoid any depiction of synaptic vesicles outside the presynaptic cell?
✓	P2.6	Does the illustration avoid showing neurotransmitters stored in locations other than within synaptic vesicles?
✓	P2.7	Is the label "Presynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C3	**Upon signaling, the vesicles fuse with the cell membrane of the presynaptic cell.**
✗	P3.1	Does the image show signaling occurring in the presynaptic cell?
✓	P3.2	Does the image show vesicles near the cell membrane of the presynaptic cell?
✗	P3.3	Does the image show vesicles fusing with the cell membrane of the presynaptic cell upon signaling?
✗	P3.4	Does the illustration avoid depicting vesicles releasing neurotransmitters without fusing with the cell membrane?
✓	P3.5	Does the illustration avoid showing vesicles fusing with parts of the presynaptic cell other than the cell membrane?
	C4	**Neurotransmitter is released from the presynaptic cell and binds to receptors on the postsynaptic cell.**
✗	P4.1	Is the neurotransmitter depicted to be binding to receptors on the postsynaptic cell?
✓	P4.2	Is the neurotransmitter shown to be released from the presynaptic cell?
✗	P4.3	Does the image show a neurotransmitter being released from the presynaptic cell and binding to receptors on the postsynaptic cell?
✗	P4.4	Does the illustration avoid showing neurotransmitter vesicles failing to fuse with the presynaptic cell membrane?
✓	P4.5	Does the illustration avoid showing neurotransmitters being released directly into the cytoplasm of the postsynaptic cell?
✗	P4.6	Is the label "Neurotransmitter attached to receptor" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	P4.7	Is the label "Neurotransmitter released into synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C5	**An enzyme on the surface of the postsynaptic cell destroys the neurotransmitter, thereby terminating the signal.**
✓	P5.1	Does the diagram indicate the termination of the signal?
✓	P5.2	Does the diagram show the enzyme destroying the neurotransmitter?
✗	P5.3	Does the diagram show the enzyme on the surface of the postsynaptic cell?
✓	P5.4	Does the diagram show the neurotransmitter?
✓	P5.5	Does the diagram show the postsynaptic cell?
✓	P5.6	Does the illustration show an enzyme on the surface of the postsynaptic cell destroying the neurotransmitter to terminate the signal?
✓	P5.7	Does the illustration avoid depicting the enzyme as producing neurotransmitters instead of breaking them down?
✗	P5.8	Does the illustration avoid showing the enzyme located inside the postsynaptic cell instead of on its surface?
✗	P5.9	Is the label "Enzyme that destroys neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C6	**The distance between the presynaptic cell and the postsynaptic cell, called the synaptic gap, is very small.**
✓	P6.1	Is the postsynaptic cell depicted?
✓	P6.2	Is the presynaptic cell depicted?
✓	P6.3	Is the synaptic gap depicted?
✓	P6.4	Is the synaptic gap portrayed as very small?
✓	P6.5	Does the illustration show a very small synaptic gap between the presynaptic cell and the postsynaptic cell?
✓	P6.6	Does the illustration avoid depicting a large gap between the presynaptic and postsynaptic cells?
✓	P6.7	Does the illustration avoid showing a synaptic gap that appears as a significant space separating the presynaptic and postsynaptic cells?
	C7	**Enzymes in the synaptic cleft degrade some types of neurotransmitters to terminate the signal.**
✗	P7.1	Are enzymes depicted in the synaptic cleft?
✓	P7.2	Are neurotransmitters shown being degraded by enzymes?
✗	P7.3	Does the illustration show enzymes in the synaptic cleft degrading neurotransmitters to terminate the signal?
✗	P7.4	Does the illustration avoid showing the neurotransmitter being destroyed by an enzyme that is not located on the surface of the postsynaptic cell?
✓	P7.5	Does the illustration avoid showing the neurotransmitter remaining intact after it binds to the enzyme?
	C8	**Neurotransmitters are released across a synapse to transfer messages between neurons.**
✓	P8.1	Are the neurotransmitters depicted reaching the other neuron?
✓	P8.2	Are the neurotransmitters shown crossing the synapse?
✓	P8.3	Is there a depiction of a synapse between the two neurons?
✓	P8.4	Is there a depiction of neurotransmitters being released from one neuron?
✓	P8.5	Is there a depiction of two neurons?
✓	P8.6	Are neurotransmitters shown being released across a synapse to transfer messages between neurons?
✗	P8.7	Does the illustration avoid showing neurotransmitters being released into the space without fusing with the presynaptic cell membrane?
✓	P8.8	Does the illustration avoid showing the enzyme that destroys neurotransmitters located on any cell other than the surface of the postsynaptic cell?
✓	P8.9	Is the label "Neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	P8.10	Is the label "Synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C9	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P9.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✗	P9.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✓	P9.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✓	P9.4	Does each arrow clearly connect the source and target elements?
✓	P9.5	Does each arrow avoid being floating, overlapping, or unclear?
✓	P9.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✓	P9.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure L: Evaluation case of GPT-Image in the first task.

Detailed Description:
A detailed biological diagram showing the process of synaptic transmission between neurons, as well as the subsequent breakdown of neurotransmitters. It shows two closely positioned bulbous cells—one representing the presynaptic cell and the other representing the postsynaptic cell. Between them is a gap labeled "Synapse." The presynaptic cell contains vesicles filled with neurotransmitters.
In the image, some vesicles are shown fusing with the presynaptic membrane and releasing neurotransmitters into the synaptic gap, labeled "Neurotransmitter released into synapse." The neurotransmitters then travel across the gap and bind to specific receptors on the postsynaptic membrane, labeled "Neurotransmitter attached to receptor."
On the surface of the postsynaptic cell, an enzyme labeled "Enzyme that destroys neurotransmitter" is depicted to illustrate the termination of the signaling process.
The diagram includes the following accurately labeled components according to the description: "Presynaptic cell," "Postsynaptic cell," "Neurotransmitter," "Neurotransmitter released into synapse," "Neurotransmitter attached to receptor," "Enzyme that destroys neurotransmitter," and "Synapse."

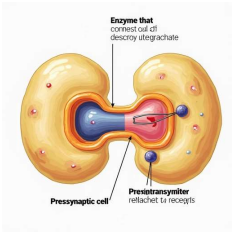


Nano Banana

✗	**C1**	**Closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells.**
✗	P1.1	Are there bulbous protrusions depicted on the postsynaptic cell?
✗	P1.2	Are there bulbous protrusions depicted on the presynaptic cell?
✗	P1.3	Does the image show closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells?
✓	P1.4	Does the illustration avoid depicting flat or irregular shapes for the presynaptic and postsynaptic protrusions instead of bulbous shapes?
✗	P1.5	Does the illustration avoid depicting large gaps between the presynaptic and postsynaptic cells instead of closely juxtaposed bulbous protrusions?
✓	P1.6	Is the label "Postsynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C2**	**The presynaptic cell stores neurotransmitter in synaptic vesicles.**
✓	P2.1	Are the synaptic vesicles shown to contain neurotransmitters?
✓	P2.2	Does the illustration depict synaptic vesicles within the presynaptic cell?
✗	P2.3	Does the illustration show a presynaptic cell?
✓	P2.4	Does the illustration show the presynaptic cell storing neurotransmitter in synaptic vesicles?
✓	P2.5	Does the illustration avoid any depiction of synaptic vesicles outside the presynaptic cell?
✗	P2.6	Does the illustration avoid showing neurotransmitters stored in locations other than within synaptic vesicles?
✓	P2.7	Is the label "Presynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	**C3**	**Upon signaling, the vesicles fuse with the cell membrane of the presynaptic cell.**
✓	P3.1	Does the image show signaling occurring in the presynaptic cell?
✓	P3.2	Does the image show vesicles near the cell membrane of the presynaptic cell?
✗	P3.3	Does the image show vesicles fusing with the cell membrane of the presynaptic cell upon signaling?
✓	P3.4	Does the illustration avoid depicting vesicles releasing neurotransmitters without fusing with the cell membrane?
✓	P3.5	Does the illustration avoid showing vesicles fusing with parts of the presynaptic cell other than the cell membrane?
✓	**C4**	**Neurotransmitter is released from the presynaptic cell and binds to receptors on the postsynaptic cell.**
✓	P4.1	Is the neurotransmitter depicted to be binding to receptors on the postsynaptic cell?
✓	P4.2	Is the neurotransmitter shown to be released from the presynaptic cell?
✓	P4.3	Does the image show a neurotransmitter being released from the presynaptic cell and binding to receptors on the postsynaptic cell?
✓	P4.4	Does the illustration avoid showing neurotransmitter vesicles failing to fuse with the presynaptic cell membrane?
✓	P4.5	Does the illustration avoid showing neurotransmitters being released directly into the cytoplasm of the postsynaptic cell?
✓	P4.6	Is the label "Neurotransmitter attached to receptor" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	P4.7	Is the label "Neurotransmitter released into synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C5**	**An enzyme on the surface of the postsynaptic cell destroys the neurotransmitter, thereby terminating the signal.**
✗	P5.1	Does the diagram indicate the termination of the signal?
✗	P5.2	Does the diagram show the enzyme destroying the neurotransmitter?
✗	P5.3	Does the diagram show the enzyme on the surface of the postsynaptic cell?
✓	P5.4	Does the diagram show the neurotransmitter?
✓	P5.5	Does the diagram show the postsynaptic cell?
✗	P5.6	Does the illustration show an enzyme on the surface of the postsynaptic cell destroying the neurotransmitter to terminate the signal?
✓	P5.7	Does the illustration avoid depicting the enzyme as producing neurotransmitters instead of breaking them down?
✗	P5.8	Does the illustration avoid showing the enzyme located inside the postsynaptic cell instead of on its surface?
✗	P5.9	Is the label "Enzyme that destroys neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	**C6**	**The distance between the presynaptic cell and the postsynaptic cell, called the synaptic gap, is very small.**
✓	P6.1	Is the postsynaptic cell depicted?
✓	P6.2	Is the presynaptic cell depicted?
✓	P6.3	Is the synaptic gap depicted?
✗	P6.4	Is the synaptic gap portrayed as very small?
✗	P6.5	Does the illustration show a very small synaptic gap between the presynaptic cell and the postsynaptic cell?
✗	P6.6	Does the illustration avoid depicting a large gap between the presynaptic and postsynaptic cells?
✗	P6.7	Does the illustration avoid showing a synaptic gap that appears as a significant space separating the presynaptic and postsynaptic cells?
✗	**C7**	**Enzymes in the synaptic cleft degrade some types of neurotransmitters to terminate the signal.**
✓	P7.1	Are enzymes depicted in the synaptic cleft?
✗	P7.2	Are neurotransmitters shown being degraded by enzymes?
✓	P7.3	Does the illustration show enzymes in the synaptic cleft degrading neurotransmitters to terminate the signal?
✓	P7.4	Does the illustration avoid showing the neurotransmitter being destroyed by an enzyme that is not located on the surface of the postsynaptic cell?
✓	P7.5	Does the illustration avoid showing the neurotransmitter remaining intact after it binds to the enzyme?
✓	**C8**	**Neurotransmitters are released across a synapse to transfer messages between neurons.**
✓	P8.1	Are the neurotransmitters depicted reaching the other neuron?
✓	P8.2	Are the neurotransmitters shown crossing the synapse?
✓	P8.3	Is there a depiction of a synapse between the two neurons?
✓	P8.4	Is there a depiction of neurotransmitters being released from one neuron?
✓	P8.5	Is there a depiction of two neurons?
✓	P8.6	Are neurotransmitters shown being released across a synapse to transfer messages between neurons?
✓	P8.7	Does the illustration avoid showing neurotransmitters being released into the space without fusing with the presynaptic cell membrane?
✓	P8.8	Does the illustration avoid showing the enzyme that destroys neurotransmitters located on any cell other than the surface of the postsynaptic cell?
✗	P8.9	Is the label "Neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	P8.10	Is the label "Synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C9**	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P9.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✓	P9.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✗	P9.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✓	P9.4	Does each arrow clearly connect the source and target elements?
✗	P9.5	Does each arrow avoid being floating, overlapping, or unclear?
✗	P9.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✗	P9.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure M: Evaluation case of Nano Banana in the first task.

Detailed Description:
A detailed biological diagram showing the process of synaptic transmission between neurons, as well as the subsequent breakdown of neurotransmitters. It shows two closely positioned bulbous cells—one representing the presynaptic cell and the other representing the postsynaptic cell. Between them is a gap labeled "Synapse." The presynaptic cell contains vesicles filled with neurotransmitters.
In the image, some vesicles are shown fusing with the presynaptic membrane and releasing neurotransmitters into the synaptic gap, labeled "Neurotransmitter released into synapse." The neurotransmitters then travel across the gap and bind to specific receptors on the postsynaptic membrane, labeled "Neurotransmitter attached to receptor."
On the surface of the postsynaptic cell, an enzyme labeled "Enzyme that destroys neurotransmitter" is depicted to illustrate the termination of the signaling process.
The diagram includes the following accurately labeled components according to the description: "Presynaptic cell," "Postsynaptic cell," "Neurotransmitter," "Neurotransmitter released into synapse," "Neurotransmitter attached to receptor," "Enzyme that destroys neurotransmitter," and "Synapse."



Flux

	C1	**Closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells.**
✗	P1.1	Are there bulbous protrusions depicted on the postsynaptic cell?
✗	P1.2	Are there bulbous protrusions depicted on the presynaptic cell?
✗	P1.3	Does the image show closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells?
✓	P1.4	Does the illustration avoid depicting flat or irregular shapes for the presynaptic and postsynaptic protrusions instead of bulbous shapes?
✓	P1.5	Does the illustration avoid depicting large gaps between the presynaptic and postsynaptic cells instead of closely juxtaposed bulbous protrusions?
✗	P1.6	Is the label "Postsynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C2	**The presynaptic cell stores neurotransmitter in synaptic vesicles.**
✓	P2.1	Are the synaptic vesicles shown to contain neurotransmitters?
✗	P2.2	Does the illustration depict synaptic vesicles within the presynaptic cell?
✗	P2.3	Does the illustration show a presynaptic cell?
✗	P2.4	Does the illustration show the presynaptic cell storing neurotransmitter in synaptic vesicles?
✓	P2.5	Does the illustration avoid any depiction of synaptic vesicles outside the presynaptic cell?
✓	P2.6	Does the illustration avoid showing neurotransmitters stored in locations other than within synaptic vesicles?
✗	P2.7	Is the label "Presynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C3	**Upon signaling, the vesicles fuse with the cell membrane of the presynaptic cell.**
✗	P3.1	Does the image show signaling occurring in the presynaptic cell?
✗	P3.2	Does the image show vesicles near the cell membrane of the presynaptic cell?
✗	P3.3	Does the image show vesicles fusing with the cell membrane of the presynaptic cell upon signaling?
✓	P3.4	Does the illustration avoid depicting vesicles releasing neurotransmitters without fusing with the cell membrane?
✓	P3.5	Does the illustration avoid showing vesicles fusing with parts of the presynaptic cell other than the cell membrane?
	C4	**Neurotransmitter is released from the presynaptic cell and binds to receptors on the postsynaptic cell.**
✗	P4.1	Is the neurotransmitter depicted to be binding to receptors on the postsynaptic cell?
✗	P4.2	Is the neurotransmitter shown to be released from the presynaptic cell?
✗	P4.3	Does the image show a neurotransmitter being released from the presynaptic cell and binding to receptors on the postsynaptic cell?
✓	P4.4	Does the illustration avoid showing neurotransmitter vesicles failing to fuse with the presynaptic cell membrane?
✓	P4.5	Does the illustration avoid showing neurotransmitters being released directly into the cytoplasm of the postsynaptic cell?
✗	P4.6	Is the label "Neurotransmitter attached to receptor" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.7	Is the label "Neurotransmitter released into synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C5	**An enzyme on the surface of the postsynaptic cell destroys the neurotransmitter, thereby terminating the signal.**
✗	P5.1	Does the diagram indicate the termination of the signal?
✗	P5.2	Does the diagram show the enzyme destroying the neurotransmitter?
✗	P5.3	Does the diagram show the enzyme on the surface of the postsynaptic cell?
✗	P5.4	Does the diagram show the neurotransmitter?
✗	P5.5	Does the diagram show the postsynaptic cell?
✗	P5.6	Does the illustration show an enzyme on the surface of the postsynaptic cell destroying the neurotransmitter to terminate the signal?
✓	P5.7	Does the illustration avoid depicting the enzyme as producing neurotransmitters instead of breaking them down?
✗	P5.8	Does the illustration avoid showing the enzyme located inside the postsynaptic cell instead of on its surface?
✗	P5.9	Is the label "Enzyme that destroys neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C6	**The distance between the presynaptic cell and the postsynaptic cell, called the synaptic gap, is very small.**
✓	P6.1	Is the postsynaptic cell depicted?
✓	P6.2	Is the presynaptic cell depicted?
✗	P6.3	Is the synaptic gap depicted?
✗	P6.4	Is the synaptic gap portrayed as very small?
✗	P6.5	Does the illustration show a very small synaptic gap between the presynaptic cell and the postsynaptic cell?
✓	P6.6	Does the illustration avoid depicting a large gap between the presynaptic and postsynaptic cells?
✓	P6.7	Does the illustration avoid showing a synaptic gap that appears as a significant space separating the presynaptic and postsynaptic cells?
	C7	**Enzymes in the synaptic cleft degrade some types of neurotransmitters to terminate the signal.**
✗	P7.1	Are enzymes depicted in the synaptic cleft?
✗	P7.2	Are neurotransmitters shown being degraded by enzymes?
✗	P7.3	Does the illustration show enzymes in the synaptic cleft degrading neurotransmitters to terminate the signal?
✓	P7.4	Does the illustration avoid showing the neurotransmitter being destroyed by an enzyme that is not located on the surface of the postsynaptic cell?
✓	P7.5	Does the illustration avoid showing the neurotransmitter remaining intact after it binds to the enzyme?
	C8	**Neurotransmitters are released across a synapse to transfer messages between neurons.**
✗	P8.1	Are the neurotransmitters depicted reaching the other neuron?
✗	P8.2	Are the neurotransmitters shown crossing the synapse?
✓	P8.3	Is there a depiction of a synapse between the two neurons?
✓	P8.4	Is there a depiction of neurotransmitters being released from one neuron?
✓	P8.5	Is there a depiction of two neurons?
✗	P8.6	Are neurotransmitters shown being released across a synapse to transfer messages between neurons?
✓	P8.7	Does the illustration avoid showing neurotransmitters being released into the space without fusing with the presynaptic cell membrane?
✓	P8.8	Does the illustration avoid showing the enzyme that destroys neurotransmitters located on any cell other than the surface of the postsynaptic cell?
✗	P8.9	Is the label "Neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P8.10	Is the label "Synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C9	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P9.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✗	P9.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✗	P9.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✗	P9.4	Does each arrow clearly connect the source and target elements?
✗	P9.5	Does each arrow avoid being floating, overlapping, or unclear?
✗	P9.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✗	P9.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure N: Evaluation case of Flux in the first task.

Detailed Description:
A detailed biological diagram showing the process of synaptic transmission between neurons, as well as the subsequent breakdown of neurotransmitters. It shows two closely positioned bulbous cells—one representing the presynaptic cell and the other representing the postsynaptic cell. Between them is a gap labeled "Synapse." The presynaptic cell contains vesicles filled with neurotransmitters.
In the image, some vesicles are shown fusing with the presynaptic membrane and releasing neurotransmitters into the synaptic gap, labeled "Neurotransmitter released into synapse." The neurotransmitters then travel across the gap and bind to specific receptors on the postsynaptic membrane, labeled "Neurotransmitter attached to receptor."
On the surface of the postsynaptic cell, an enzyme labeled "Enzyme that destroys neurotransmitter" is depicted to illustrate the termination of the signaling process.
The diagram includes the following accurately labeled components according to the description: "Presynaptic cell," "Postsynaptic cell," "Neurotransmitter," "Neurotransmitter released into synapse," "Neurotransmitter attached to receptor," "Enzyme that destroys neurotransmitter," and "Synapse."

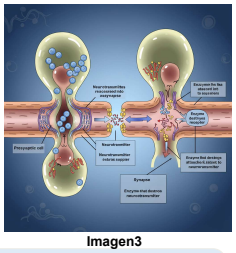
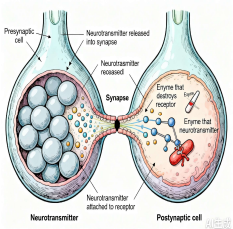


Imagen3

	C1	**Closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells.**
✓	P1.1	Are there bulbous protrusions depicted on the postsynaptic cell?
✓	P1.2	Are there bulbous protrusions depicted on the presynaptic cell?
✗	P1.3	Does the image show closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells?
✓	P1.4	Does the illustration avoid depicting flat or irregular shapes for the presynaptic and postsynaptic protrusions instead of bulbous shapes?
✓	P1.5	Does the illustration avoid depicting large gaps between the presynaptic and postsynaptic cells instead of closely juxtaposed bulbous protrusions?
✗	P1.6	Is the label "Postsynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C2	**The presynaptic cell stores neurotransmitter in synaptic vesicles.**
✗	P2.1	Are the synaptic vesicles shown to contain neurotransmitters?
✓	P2.2	Does the illustration depict synaptic vesicles within the presynaptic cell?
✓	P2.3	Does the illustration show a presynaptic cell?
✗	P2.4	Does the illustration show the presynaptic cell storing neurotransmitter in synaptic vesicles?
✓	P2.5	Does the illustration avoid any depiction of synaptic vesicles outside the presynaptic cell?
✗	P2.6	Does the illustration avoid showing neurotransmitters stored in locations other than within synaptic vesicles?
✗	P2.7	Is the label "Presynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C3	**Upon signaling, the vesicles fuse with the cell membrane of the presynaptic cell.**
✗	P3.1	Does the image show signaling occurring in the presynaptic cell?
✓	P3.2	Does the image show vesicles near the cell membrane of the presynaptic cell?
✗	P3.3	Does the image show vesicles fusing with the cell membrane of the presynaptic cell upon signaling?
✓	P3.4	Does the illustration avoid depicting vesicles releasing neurotransmitters without fusing with the cell membrane?
✓	P3.5	Does the illustration avoid showing vesicles fusing with parts of the presynaptic cell other than the cell membrane?
	C4	**Neurotransmitter is released from the presynaptic cell and binds to receptors on the postsynaptic cell.**
✗	P4.1	Is the neurotransmitter depicted to be binding to receptors on the postsynaptic cell?
✓	P4.2	Is the neurotransmitter shown to be released from the presynaptic cell?
✗	P4.3	Does the image show a neurotransmitter being released from the presynaptic cell and binding to receptors on the postsynaptic cell?
✓	P4.4	Does the illustration avoid showing neurotransmitter vesicles failing to fuse with the presynaptic cell membrane?
✓	P4.5	Does the illustration avoid showing neurotransmitters being released directly into the cytoplasm of the postsynaptic cell?
✗	P4.6	Is the label "Neurotransmitter attached to receptor" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.7	Is the label "Neurotransmitter released into synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C5	**An enzyme on the surface of the postsynaptic cell destroys the neurotransmitter, thereby terminating the signal.**
✓	P5.1	Does the diagram indicate the termination of the signal?
✗	P5.2	Does the diagram show the enzyme destroying the neurotransmitter?
✗	P5.3	Does the diagram show the enzyme on the surface of the postsynaptic cell?
✓	P5.4	Does the diagram show the neurotransmitter?
✗	P5.5	Does the diagram show the postsynaptic cell?
✗	P5.6	Does the illustration show an enzyme on the surface of the postsynaptic cell destroying the neurotransmitter to terminate the signal?
✓	P5.7	Does the illustration avoid depicting the enzyme as producing neurotransmitters instead of breaking them down?
✓	P5.8	Does the illustration avoid showing the enzyme located inside the postsynaptic cell instead of on its surface?
✗	P5.9	Is the label "Enzyme that destroys neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C6	**The distance between the presynaptic cell and the postsynaptic cell, called the synaptic gap, is very small.**
✓	P6.1	Is the postsynaptic cell depicted?
✓	P6.2	Is the presynaptic cell depicted?
✓	P6.3	Is the synaptic gap depicted?
✓	P6.4	Is the synaptic gap portrayed as very small?
✓	P6.5	Does the illustration show a very small synaptic gap between the presynaptic cell and the postsynaptic cell?
✓	P6.6	Does the illustration avoid depicting a large gap between the presynaptic and postsynaptic cells?
✗	P6.7	Does the illustration avoid showing a synaptic gap that appears as a significant space separating the presynaptic and postsynaptic cells?
	C7	**Enzymes in the synaptic cleft degrade some types of neurotransmitters to terminate the signal.**
✗	P7.1	Are enzymes depicted in the synaptic cleft?
✓	P7.2	Are neurotransmitters shown being degraded by enzymes?
✓	P7.3	Does the illustration show enzymes in the synaptic cleft degrading neurotransmitters to terminate the signal?
✗	P7.4	Does the illustration avoid showing the neurotransmitter being destroyed by an enzyme that is not located on the surface of the postsynaptic cell?
✗	P7.5	Does the illustration avoid showing the neurotransmitter remaining intact after it binds to the enzyme?
	C8	**Neurotransmitters are released across a synapse to transfer messages between neurons.**
✓	P8.1	Are the neurotransmitters depicted reaching the other neuron?
✓	P8.2	Are the neurotransmitters shown crossing the synapse?
✓	P8.3	Is there a depiction of a synapse between the two neurons?
✓	P8.4	Is there a depiction of neurotransmitters being released from one neuron?
✓	P8.5	Is there a depiction of two neurons?
✓	P8.6	Are neurotransmitters shown being released across a synapse to transfer messages between neurons?
✓	P8.7	Does the illustration avoid showing neurotransmitters being released into the space without fusing with the presynaptic cell membrane?
✗	P8.8	Does the illustration avoid showing the enzyme that destroys neurotransmitters located on any cell other than the surface of the postsynaptic cell?
✗	P8.9	Is the label "Neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P8.10	Is the label "Synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C9	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P9.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✗	P9.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✗	P9.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✗	P9.4	Does each arrow clearly connect the source and target elements?
✗	P9.5	Does each arrow avoid being floating, overlapping, or unclear?
✗	P9.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✗	P9.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure O: Evaluation case of Imagen3 in the first task.

Detailed Description:
A detailed biological diagram showing the process of synaptic transmission between neurons, as well as the subsequent breakdown of neurotransmitters. It shows two closely positioned bulbous cells—one representing the presynaptic cell and the other representing the postsynaptic cell. Between them is a gap labeled "Synapse." The presynaptic cell contains vesicles filled with neurotransmitters.
In the image, some vesicles are shown fusing with the presynaptic membrane and releasing neurotransmitters into the synaptic gap, labeled "Neurotransmitter released into synapse." The neurotransmitters then travel across the gap and bind to specific receptors on the postsynaptic membrane, labeled "Neurotransmitter attached to receptor."
On the surface of the postsynaptic cell, an enzyme labeled "Enzyme that destroys neurotransmitter" is depicted to illustrate the termination of the signaling process.
The diagram includes the following accurately labeled components according to the description: "Presynaptic cell," "Postsynaptic cell," "Neurotransmitter," "Neurotransmitter released into synapse," "Neurotransmitter attached to receptor," "Enzyme that destroys neurotransmitter," and "Synapse."

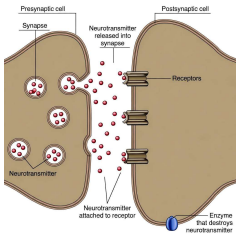


Seedream

	C1	**Closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells.**
✓	P1.1	Are there bulbous protrusions depicted on the postsynaptic cell?
✓	P1.2	Are there bulbous protrusions depicted on the presynaptic cell?
✓	P1.3	Does the image show closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells?
✓	P1.4	Does the illustration avoid depicting flat or irregular shapes for the presynaptic and postsynaptic protrusions instead of bulbous shapes?
✓	P1.5	Does the illustration avoid depicting large gaps between the presynaptic and postsynaptic cells instead of closely juxtaposed bulbous protrusions?
✗	P1.6	Is the label "Postsynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C2	**The presynaptic cell stores neurotransmitter in synaptic vesicles.**
✗	P2.1	Are the synaptic vesicles shown to contain neurotransmitters?
✓	P2.2	Does the illustration depict synaptic vesicles within the presynaptic cell?
✓	P2.3	Does the illustration show a presynaptic cell?
✗	P2.4	Does the illustration show the presynaptic cell storing neurotransmitter in synaptic vesicles?
✓	P2.5	Does the illustration avoid any depiction of synaptic vesicles outside the presynaptic cell?
✓	P2.6	Does the illustration avoid showing neurotransmitters stored in locations other than within synaptic vesicles?
✓	P2.7	Is the label "Presynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C3	**Upon signaling, the vesicles fuse with the cell membrane of the presynaptic cell.**
✗	P3.1	Does the image show signaling occurring in the presynaptic cell?
✓	P3.2	Does the image show vesicles near the cell membrane of the presynaptic cell?
✗	P3.3	Does the image show vesicles fusing with the cell membrane of the presynaptic cell upon signaling?
✗	P3.4	Does the illustration avoid depicting vesicles releasing neurotransmitters without fusing with the cell membrane?
✓	P3.5	Does the illustration avoid showing vesicles fusing with parts of the presynaptic cell other than the cell membrane?
	C4	**Neurotransmitter is released from the presynaptic cell and binds to receptors on the postsynaptic cell.**
✓	P4.1	Is the neurotransmitter depicted to be binding to receptors on the postsynaptic cell?
✓	P4.2	Is the neurotransmitter shown to be released from the presynaptic cell?
✓	P4.3	Does the image show a neurotransmitter being released from the presynaptic cell and binding to receptors on the postsynaptic cell?
✗	P4.4	Does the illustration avoid showing neurotransmitter vesicles failing to fuse with the presynaptic cell membrane?
✗	P4.5	Does the illustration avoid showing neurotransmitters being released directly into the cytoplasm of the postsynaptic cell?
✓	P4.6	Is the label "Neurotransmitter attached to receptor" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.7	Is the label "Neurotransmitter released into synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C5	**An enzyme on the surface of the postsynaptic cell destroys the neurotransmitter, thereby terminating the signal.**
✓	P5.1	Does the diagram indicate the termination of the signal?
✗	P5.2	Does the diagram show the enzyme destroying the neurotransmitter?
✗	P5.3	Does the diagram show the enzyme on the surface of the postsynaptic cell?
✓	P5.4	Does the diagram show the neurotransmitter?
✗	P5.5	Does the diagram show the postsynaptic cell?
✗	P5.6	Does the illustration show an enzyme on the surface of the postsynaptic cell destroying the neurotransmitter to terminate the signal?
✓	P5.7	Does the illustration avoid depicting the enzyme as producing neurotransmitters instead of breaking them down?
✗	P5.8	Does the illustration avoid showing the enzyme located inside the postsynaptic cell instead of on its surface?
✗	P5.9	Is the label "Enzyme that destroys neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C6	**The distance between the presynaptic cell and the postsynaptic cell, called the synaptic gap, is very small.**
✓	P6.1	Is the postsynaptic cell depicted?
✓	P6.2	Is the presynaptic cell depicted?
✓	P6.3	Is the synaptic gap depicted?
✓	P6.4	Is the synaptic gap portrayed as very small?
✓	P6.5	Does the illustration show a very small synaptic gap between the presynaptic cell and the postsynaptic cell?
✓	P6.6	Does the illustration avoid depicting a large gap between the presynaptic and postsynaptic cells?
✗	P6.7	Does the illustration avoid showing a synaptic gap that appears as a significant space separating the presynaptic and postsynaptic cells?
	C7	**Enzymes in the synaptic cleft degrade some types of neurotransmitters to terminate the signal.**
✗	P7.1	Are enzymes depicted in the synaptic cleft?
✗	P7.2	Are neurotransmitters shown being degraded by enzymes?
✗	P7.3	Does the illustration show enzymes in the synaptic cleft degrading neurotransmitters to terminate the signal?
✗	P7.4	Does the illustration avoid showing the neurotransmitter being destroyed by an enzyme that is not located on the surface of the postsynaptic cell?
✗	P7.5	Does the illustration avoid showing the neurotransmitter remaining intact after it binds to the enzyme?
	C8	**Neurotransmitters are released across a synapse to transfer messages between neurons.**
✓	P8.1	Are the neurotransmitters depicted reaching the other neuron?
✓	P8.2	Are the neurotransmitters shown crossing the synapse?
✓	P8.3	Is there a depiction of a synapse between the two neurons?
✓	P8.4	Is there a depiction of neurotransmitters being released from one neuron?
✓	P8.5	Is there a depiction of two neurons?
✓	P8.6	Are neurotransmitters shown being released across a synapse to transfer messages between neurons?
✓	P8.7	Does the illustration avoid showing neurotransmitters being released into the space without fusing with the presynaptic cell membrane?
✗	P8.8	Does the illustration avoid showing the enzyme that destroys neurotransmitters located on any cell other than the surface of the postsynaptic cell?
✗	P8.9	Is the label "Neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P8.10	Is the label "Synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C9	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P9.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✓	P9.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✗	P9.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✗	P9.4	Does each arrow clearly connect the source and target elements?
✗	P9.5	Does each arrow avoid being floating, overlapping, or unclear?
✗	P9.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✗	P9.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure P: Evaluation case of Seedream in the first task.

Detailed Description:
A detailed biological diagram showing the process of synaptic transmission between neurons, as well as the subsequent breakdown of neurotransmitters. It shows two closely positioned bulbous cells—one representing the presynaptic cell and the other representing the postsynaptic cell. Between them is a gap labeled "Synapse." The presynaptic cell contains vesicles filled with neurotransmitters.
In the image, some vesicles are shown fusing with the presynaptic membrane and releasing neurotransmitters into the synaptic gap, labeled "Neurotransmitter released into synapse." The neurotransmitters then travel across the gap and bind to specific receptors on the postsynaptic membrane, labeled "Neurotransmitter attached to receptor."
On the surface of the postsynaptic cell, an enzyme labeled "Enzyme that destroys neurotransmitter" is depicted to illustrate the termination of the signaling process.
The diagram includes the following accurately labeled components according to the description: "Presynaptic cell," "Postsynaptic cell," "Neurotransmitter," "Neurotransmitter released into synapse," "Neurotransmitter attached to receptor," "Enzyme that destroys neurotransmitter," and "Synapse."

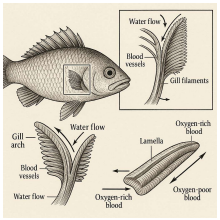


wan2.5

	C1	**Closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells.**
✓	P1.1	Are there bulbous protrusions depicted on the postsynaptic cell?
✓	P1.2	Are there bulbous protrusions depicted on the presynaptic cell?
✓	P1.3	Does the image show closely juxtaposed bulbous protrusions of presynaptic and postsynaptic cells?
✓	P1.4	Does the illustration avoid depicting flat or irregular shapes for the presynaptic and postsynaptic protrusions instead of bulbous shapes?
✗	P1.5	Does the illustration avoid depicting large gaps between the presynaptic and postsynaptic cells instead of closely juxtaposed bulbous protrusions?
✓	P1.6	Is the label "Postsynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C2	**The presynaptic cell stores neurotransmitter in synaptic vesicles.**
✓	P2.1	Are the synaptic vesicles shown to contain neurotransmitters?
✓	P2.2	Does the illustration depict synaptic vesicles within the presynaptic cell?
✓	P2.3	Does the illustration show a presynaptic cell?
✓	P2.4	Does the illustration show the presynaptic cell storing neurotransmitter in synaptic vesicles?
✓	P2.5	Does the illustration avoid any depiction of synaptic vesicles outside the presynaptic cell?
✓	P2.6	Does the illustration avoid showing neurotransmitters stored in locations other than within synaptic vesicles?
✓	P2.7	Is the label "Presynaptic cell" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C3	**Upon signaling, the vesicles fuse with the cell membrane of the presynaptic cell.**
✓	P3.1	Does the image show signaling occurring in the presynaptic cell?
✓	P3.2	Does the image show vesicles near the cell membrane of the presynaptic cell?
✓	P3.3	Does the image show vesicles fusing with the cell membrane of the presynaptic cell upon signaling?
✓	P3.4	Does the illustration avoid depicting vesicles releasing neurotransmitters without fusing with the cell membrane?
✓	P3.5	Does the illustration avoid showing vesicles fusing with parts of the presynaptic cell other than the cell membrane?
	C4	**Neurotransmitter is released from the presynaptic cell and binds to receptors on the postsynaptic cell.**
✓	P4.1	Is the neurotransmitter depicted to be binding to receptors on the postsynaptic cell?
✓	P4.2	Is the neurotransmitter shown to be released from the presynaptic cell?
✓	P4.3	Does the image show a neurotransmitter being released from the presynaptic cell and binding to receptors on the postsynaptic cell?
✓	P4.4	Does the illustration avoid showing neurotransmitter vesicles failing to fuse with the presynaptic cell membrane?
✓	P4.5	Does the illustration avoid showing neurotransmitters being released directly into the cytoplasm of the postsynaptic cell?
✗	P4.6	Is the label "Neurotransmitter attached to receptor" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	P4.7	Is the label "Neurotransmitter released into synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C5	**An enzyme on the surface of the postsynaptic cell destroys the neurotransmitter, thereby terminating the signal.**
✓	P5.1	Does the diagram indicate the termination of the signal?
✗	P5.2	Does the diagram show the enzyme destroying the neurotransmitter?
✓	P5.3	Does the diagram show the enzyme on the surface of the postsynaptic cell?
✓	P5.4	Does the diagram show the neurotransmitter?
✓	P5.5	Does the diagram show the postsynaptic cell?
✗	P5.6	Does the illustration show an enzyme on the surface of the postsynaptic cell destroying the neurotransmitter to terminate the signal?
✓	P5.7	Does the illustration avoid depicting the enzyme as producing neurotransmitters instead of breaking them down?
✓	P5.8	Does the illustration avoid showing the enzyme located inside the postsynaptic cell instead of on its surface?
✓	P5.9	Is the label "Enzyme that destroys neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C6	**The distance between the presynaptic cell and the postsynaptic cell, called the synaptic gap, is very small.**
✓	P6.1	Is the postsynaptic cell depicted?
✓	P6.2	Is the presynaptic cell depicted?
✓	P6.3	Is the synaptic gap depicted?
✗	P6.4	Is the synaptic gap portrayed as very small?
✓	P6.5	Does the illustration show a very small synaptic gap between the presynaptic cell and the postsynaptic cell?
✗	P6.6	Does the illustration avoid depicting a large gap between the presynaptic and postsynaptic cells?
✗	P6.7	Does the illustration avoid showing a synaptic gap that appears as a significant space separating the presynaptic and postsynaptic cells?
	C7	**Enzymes in the synaptic cleft degrade some types of neurotransmitters to terminate the signal.**
✗	P7.1	Are enzymes depicted in the synaptic cleft?
✗	P7.2	Are neurotransmitters shown being degraded by enzymes?
✗	P7.3	Does the illustration show enzymes in the synaptic cleft degrading neurotransmitters to terminate the signal?
✓	P7.4	Does the illustration avoid showing the neurotransmitter being destroyed by an enzyme that is not located on the surface of the postsynaptic cell?
✓	P7.5	Does the illustration avoid showing the neurotransmitter remaining intact after it binds to the enzyme?
	C8	**Neurotransmitters are released across a synapse to transfer messages between neurons.**
✓	P8.1	Are the neurotransmitters depicted reaching the other neuron?
✓	P8.2	Are the neurotransmitters shown crossing the synapse?
✓	P8.3	Is there a depiction of a synapse between the two neurons?
✓	P8.4	Is there a depiction of neurotransmitters being released from one neuron?
✓	P8.5	Is there a depiction of two neurons?
✓	P8.6	Are neurotransmitters shown being released across a synapse to transfer messages between neurons?
✓	P8.7	Does the illustration avoid showing neurotransmitters being released into the space without fusing with the presynaptic cell membrane?
✓	P8.8	Does the illustration avoid showing the enzyme that destroys neurotransmitters located on any cell other than the surface of the postsynaptic cell?
✓	P8.9	Is the label "Neurotransmitter" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P8.10	Is the label "Synapse" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C9	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P9.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✓	P9.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✗	P9.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✓	P9.4	Does each arrow clearly connect the source and target elements?
✓	P9.5	Does each arrow avoid being floating, overlapping, or unclear?
✓	P9.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✓	P9.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure Q: Evaluation case of Wan2.5 in the first task.

Detailed Description:
The image depicts a fish with a highlighted focus on the gill region located just behind the head, marked by a box. A detailed close-up view of the gills is included, showing each gill filament with a feather-like appearance. Two stacks of gill filaments are attached to a columnar gill arch, forming a tall, distinct V shape. Water is shown entering from the outside of the V, flowing between the filaments, and exiting through the top of the V. Veins are illustrated entering the gill from the base of the gill arch, while arteries exit from the opposite side. The illustration also provides a zoomed-in view of a single gill filament, indicating the direction of water flow: water first passes over the oxygen-rich arteries and then over the oxygen-poor veins.
All components are clearly labeled, including "Gill arch," "Gill filaments," "Blood vessels," "Lamella," "Oxygen-rich blood," "Oxygen-poor blood," and "Water flow." The diagram clearly visualizes the process of oxygen transfer from the water to the blood as it moves across the gill surfaces.

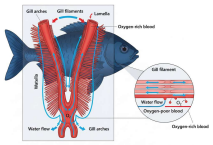


GPT-Image

	C1	**The illustration shows a fish, with a box indicating the location of the gills behind the head.**
✓	P1.1	Is there a fish depicted in the illustration?
✓	P1.2	Is there a box indicating a specific area in the illustration?
✓	P1.3	Is the box indicating the location of the gills?
✓	P1.4	Is the box located behind the head of the fish?
✓	P1.5	Does the illustration avoid depicting the gills' location in front of the fish's head?
✓	P1.6	Does the illustration avoid marking the gill location behind the head with a circle?
✓	P1.7	Does the illustration show a box indicating the location of the gills behind the head of the fish?
	C2	**The gills resemble a feathery worm and are attached to a structure called a columnar gill arch, forming a tall V.**
✓	P2.1	Do the gills resemble a feathery worm?
✓	P2.2	Are the gills attached to a structure called a columnar gill arch?
✓	P2.3	Do the gills and the columnar gill arch together form a tall V?
✓	P2.4	Does the image show gills that resemble a feathery worm and are attached to a columnar gill arch, forming a tall V?
✓	P2.5	Does the illustration avoid depicting gills that do not resemble a feathery worm?
✓	P2.6	Does the illustration avoid showing a columnar gill arch that does not form a tall V with the gills attached?
✗	P2.7	Is the label "Gill arch" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C3	**Water travels in from the outside of the V, between each gill, then travels out of the top of the V.**
✓	P3.1	Is water depicted entering from the outside of the V?
✗	P3.2	Is water shown traveling between each gill?
✗	P3.3	Is water illustrated exiting from the top of the V?
✗	P3.4	Does the image show water traveling in from the outside of the V, between each gill, then traveling out of the top of the V?
✓	P3.5	Does the illustration avoid showing water traveling into the gills from the top of the V instead of the outside of the V?
✗	P3.6	Does the illustration avoid depicting water exiting from the sides or the base of the V instead of the top of the V?
✗	P3.7	Is the label "Water flow" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C4	**Veins travel into the gill from the base of the gill arch, and arteries travel back out on the opposite side.**
✗	P4.1	Does the diagram show veins traveling into the gill from the base of the gill arch?
✓	P4.2	Does the diagram show arteries traveling back out on the opposite side of the gill arch?
✗	P4.3	Do the veins in the image travel into the gill from the base of the gill arch, and do the arteries travel back out on the opposite side?
✓	P4.4	Does the illustration avoid showing veins traveling from any place other than the base of the gill arch?
✓	P4.5	Does the illustration avoid showing arteries traveling back to the base of the gill arch instead of the opposite side?
✗	P4.6	Is the label "Blood vessels" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.7	Is the label "Oxygen-rich blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.8	Is the label "Oxygen-poor blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C5	**Water travels over the gill, passing over oxygenated arteries first, then over deoxygenated veins.**
✗	P5.1	Does the diagram depict water traveling over the gill?
✗	P5.2	Does the diagram show water passing over oxygenated arteries first?
✗	P5.3	Does the diagram show water passing over deoxygenated veins after passing over the oxygenated arteries?
✗	P5.4	Does the image show water traveling over the gill and passing over oxygenated arteries first, then over deoxygenated veins?
✓	P5.5	Does the illustration avoid showing water traveling over deoxygenated veins first and then over oxygenated arteries?
✓	P5.6	Does the illustration avoid depicting veins traveling out of the gill from the base of the gill arch instead of veins traveling into the gill?
✗	P5.7	Is the label "Lamella" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C6	**As water flows over the gills, oxygen is transferred to blood via the veins.**
✓	P6.1	Is water depicted flowing over the gills?
✗	P6.2	Is oxygen depicted being transferred to blood?
✗	P6.3	Are veins depicted in the diagram?
✗	P6.4	Does the illustration show oxygen being transferred to blood via the veins as water flows over the gills?
✓	P6.5	Does the illustration avoid depicting water flowing over the gills in the opposite direction of the described path (i.e., from the top of the V to the outside)?
✗	P6.6	Does the illustration avoid showing oxygen transfer to the blood occurring in the arteries instead of the veins?
✓	P6.7	Is the label "Gill filaments" correctly labeled in the diagram, with proper spelling and accurate positioning?
	C7	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P7.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✓	P7.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✗	P7.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✗	P7.4	Does each arrow clearly connect the source and target elements?
✓	P7.5	Does each arrow avoid being floating, overlapping, or unclear?
✓	P7.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✓	P7.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure R: Evaluation case of GPT-Image in the second task.

Detailed Description:
The image depicts a fish with a highlighted focus on the gill region located just behind the head, marked by a box. A detailed close-up view of the gills is included, showing each gill filament with a feather-like appearance. Two stacks of gill filaments are attached to a columnar gill arch, forming a tall, distinct V shape. Water is shown entering from the outside of the V, flowing between the filaments, and exiting through the top of the V. Veins are illustrated entering the gill from the base of the gill arch, while arteries exit from the opposite side. The illustration also provides a zoomed-in view of a single gill filament, indicating the direction of water flow: water first passes over the oxygen-rich arteries and then over the oxygen-poor veins.
All components are clearly labeled, including "Gill arch," "Gill filaments," "Blood vessels," "Lamella," "Oxygen-rich blood," "Oxygen-poor blood," and "Water flow." The diagram clearly visualizes the process of oxygen transfer from the water to the blood as it moves across the gill surfaces.

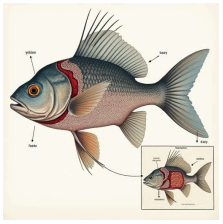


Nano Banana

✓	**C1**	**The illustration shows a fish, with a box indicating the location of the gills behind the head.**
✓	P1.1	Is there a fish depicted in the illustration?
✓	P1.2	Is there a box indicating a specific area in the illustration?
✓	P1.3	Is the box indicating the location of the gills?
✓	P1.4	Is the box located behind the head of the fish?
✓	P1.5	Does the illustration avoid depicting the gills' location in front of the fish's head?
✓	P1.6	Does the illustration avoid marking the gill location behind the head with a circle?
✓	P1.7	Does the illustration show a box indicating the location of the gills behind the head of the fish?
✓	**C2**	**The gills resemble a feathery worm and are attached to a structure called a columnar gill arch, forming a tall V.**
✓	P2.1	Do the gills resemble a feathery worm?
✓	P2.2	Are the gills attached to a structure called a columnar gill arch?
✓	P2.3	Do the gills and the columnar gill arch together form a tall V?
✓	P2.4	Does the image show gills that resemble a feathery worm and are attached to a columnar gill arch, forming a tall V?
✓	P2.5	Does the illustration avoid depicting gills that do not resemble a feathery worm?
✓	P2.6	Does the illustration avoid showing a columnar gill arch that does not form a tall V with the gills attached?
✗	P2.7	Is the label "Gill arch" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	**C3**	**Water travels in from the outside of the V, between each gill, then travels out of the top of the V.**
✓	P3.1	Is water depicted entering from the outside of the V?
✗	P3.2	Is water shown traveling between each gill?
✗	P3.3	Is water illustrated exiting from the top of the V?
✗	P3.4	Does the image show water traveling in from the outside of the V, between each gill, then traveling out of the top of the V?
✓	P3.5	Does the illustration avoid showing water traveling into the gills from the top of the V instead of the outside of the V?
✗	P3.6	Does the illustration avoid depicting water exiting from the sides or the base of the V instead of the top of the V?
✗	P3.7	Is the label "Water flow" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C4**	**Veins travel into the gill from the base of the gill arch, and arteries travel back out on the opposite side.**
✓	P4.1	Does the diagram show veins traveling into the gill from the base of the gill arch?
✗	P4.2	Does the diagram show arteries traveling back out on the opposite side of the gill arch?
✓	P4.3	Do the veins in the image travel into the gill from the base of the gill arch, and do the arteries travel back out on the opposite side?
✓	P4.4	Does the illustration avoid showing veins traveling from any place other than the base of the gill arch?
✓	P4.5	Does the illustration avoid showing arteries traveling back to the base of the gill arch instead of the opposite side?
✗	P4.6	Is the label "Blood vessels" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.7	Is the label "Oxygen-rich blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	P4.8	Is the label "Oxygen-poor blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C5**	**Water travels over the gill, passing over oxygenated arteries first, then over deoxygenated veins.**
✗	P5.1	Does the diagram depict water traveling over the gill?
✗	P5.2	Does the diagram show water passing over oxygenated arteries first?
✗	P5.3	Does the diagram show water passing over deoxygenated veins after passing over the oxygenated arteries?
✗	P5.4	Does the image show water traveling over the gill and passing over oxygenated arteries first, then over deoxygenated veins?
✓	P5.5	Does the illustration avoid showing water traveling over deoxygenated veins first and then over oxygenated arteries?
✓	P5.6	Does the illustration avoid depicting veins traveling out of the gill from the base of the gill arch instead of veins traveling into the gill?
✗	P5.7	Is the label "Lamella" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	**C6**	**As water flows over the gills, oxygen is transferred to blood via the veins.**
✓	P6.1	Is water depicted flowing over the gills?
✗	P6.2	Is oxygen depicted being transferred to blood?
✗	P6.3	Are veins depicted in the diagram?
✗	P6.4	Does the illustration show oxygen being transferred to blood via the veins as water flows over the gills?
✗	P6.5	Does the illustration avoid depicting water flowing over the gills in the opposite direction of the described path (i.e., from the top of the V to the outside)?
✗	P6.6	Does the illustration avoid showing oxygen transfer to the blood occurring in the arteries instead of the veins?
✓	P6.7	Is the label "Gill filaments" correctly labeled in the diagram, with proper spelling and accurate positioning?
✗	**C7**	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P7.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✗	P7.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✗	P7.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✗	P7.4	Does each arrow clearly connect the source and target elements?
✓	P7.5	Does each arrow avoid being floating, overlapping, or unclear?
✗	P7.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✗	P7.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure S: Evaluation case of Nano Banana in the second task.

Detailed Description:
The image depicts a fish with a highlighted focus on the gill region located just behind the head, marked by a box. A detailed close-up view of the gills is included, showing each gill filament with a feather-like appearance. Two stacks of gill filaments are attached to a columnar gill arch, forming a tall, distinct V shape. Water is shown entering from the outside of the V, flowing between the filaments, and exiting through the top of the V. Veins are illustrated entering the gill from the base of the gill arch, while arteries exit from the opposite side. The illustration also provides a zoomed-in view of a single gill filament, indicating the direction of water flow: water first passes over the oxygen-rich arteries and then over the oxygen-poor veins.
All components are clearly labeled, including "Gill arch," "Gill filaments," "Blood vessels," "Lamella," "Oxygen-rich blood," "Oxygen-poor blood," and "Water flow." The diagram clearly visualizes the process of oxygen transfer from the water to the blood as it moves across the gill surfaces.



Flux

✓	**C1**	**The illustration shows a fish, with a box indicating the location of the gills behind the head.**
✓	P1.1	Is there a fish depicted in the illustration?
✓	P1.2	Is there a box indicating a specific area in the illustration?
✗	P1.3	Is the box indicating the location of the gills?
✗	P1.4	Is the box located behind the head of the fish?
✓	P1.5	Does the illustration avoid depicting the gills' location in front of the fish's head?
✓	P1.6	Does the illustration avoid marking the gill location behind the head with a circle?
✓	P1.7	Does the illustration show a box indicating the location of the gills behind the head of the fish?
✗	**C2**	**The gills resemble a feathery worm and are attached to a structure called a columnar gill arch, forming a tall V.**
✗	P2.1	Do the gills resemble a feathery worm?
✗	P2.2	Are the gills attached to a structure called a columnar gill arch?
✗	P2.3	Do the gills and the columnar gill arch together form a tall V?
✗	P2.4	Does the image show gills that resemble a feathery worm and are attached to a columnar gill arch, forming a tall V?
✗	P2.5	Does the illustration avoid depicting gills that do not resemble a feathery worm?
✓	P2.6	Does the illustration avoid showing a columnar gill arch that does not form a tall V with the gills attached?
✗	P2.7	Is the label "Gill arch" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C3**	**Water travels in from the outside of the V, between each gill, then travels out of the top of the V.**
✗	P3.1	Is water depicted entering from the outside of the V?
✗	P3.2	Is water shown traveling between each gill?
✗	P3.3	Is water illustrated exiting from the top of the V?
✗	P3.4	Does the image show water traveling in from the outside of the V, between each gill, then traveling out of the top of the V?
✓	P3.5	Does the illustration avoid showing water traveling into the gills from the top of the V instead of the outside of the V?
✓	P3.6	Does the illustration avoid depicting water exiting from the sides or the base of the V instead of the top of the V?
✗	P3.7	Is the label "Water flow" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C4**	**Veins travel into the gill from the base of the gill arch, and arteries travel back out on the opposite side.**
✗	P4.1	Does the diagram show veins traveling into the gill from the base of the gill arch?
✗	P4.2	Does the diagram show arteries traveling back out on the opposite side of the gill arch?
✗	P4.3	Do the veins in the image travel into the gill from the base of the gill arch, and do the arteries travel back out on the opposite side?
✓	P4.4	Does the illustration avoid showing veins traveling from any place other than the base of the gill arch?
✓	P4.5	Does the illustration avoid showing arteries traveling back to the base of the gill arch instead of the opposite side?
✗	P4.6	Is the label "Blood vessels" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.7	Is the label "Oxygen-rich blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.8	Is the label "Oxygen-poor blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C5**	**Water travels over the gill, passing over oxygenated arteries first, then over deoxygenated veins.**
✗	P5.1	Does the diagram depict water traveling over the gill?
✗	P5.2	Does the diagram show water passing over oxygenated arteries first?
✗	P5.3	Does the diagram show water passing over deoxygenated veins after passing over the oxygenated arteries?
✗	P5.4	Does the image show water traveling over the gill and passing over oxygenated arteries first, then over deoxygenated veins?
✓	P5.5	Does the illustration avoid showing water traveling over deoxygenated veins first and then over oxygenated arteries?
✓	P5.6	Does the illustration avoid depicting veins traveling out of the gill from the base of the gill arch instead of veins traveling into the gill?
✗	P5.7	Is the label "Lamella" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C6**	**As water flows over the gills, oxygen is transferred to blood via the veins.**
✗	P6.1	Is water depicted flowing over the gills?
✗	P6.2	Is oxygen depicted being transferred to blood?
✗	P6.3	Are veins depicted in the diagram?
✗	P6.4	Does the illustration show oxygen being transferred to blood via the veins as water flows over the gills?
✓	P6.5	Does the illustration avoid depicting water flowing over the gills in the opposite direction of the described path (i.e., from the top of the V to the outside)?
✗	P6.6	Does the illustration avoid showing oxygen transfer to the blood occurring in the arteries instead of the veins?
✗	P6.7	Is the label "Gill filaments" correctly labeled in the diagram, with proper spelling and accurate positioning?
✗	**C7**	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P7.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✗	P7.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✓	P7.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✗	P7.4	Does each arrow clearly connect the source and target elements?
✗	P7.5	Does each arrow avoid being floating, overlapping, or unclear?
✗	P7.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✗	P7.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure T: Evaluation case of Flux in the second task.

Detailed Description:
The image depicts a fish with a highlighted focus on the gill region located just behind the head, marked by a box. A detailed close-up view of the gills is included, showing each gill filament with a feather-like appearance. Two stacks of gill filaments are attached to a columnar gill arch, forming a tall, distinct V shape. Water is shown entering from the outside of the V, flowing between the filaments, and exiting through the top of the V. Veins are illustrated entering the gill from the base of the gill arch, while arteries exit from the opposite side. The illustration also provides a zoomed-in view of a single gill filament, indicating the direction of water flow: water first passes over the oxygen-rich arteries and then over the oxygen-poor veins.
All components are clearly labeled, including "Gill arch," "Gill filaments," "Blood vessels," "Lamella," "Oxygen-rich blood," "Oxygen-poor blood," and "Water flow." The diagram clearly visualizes the process of oxygen transfer from the water to the blood as it moves across the gill surfaces.

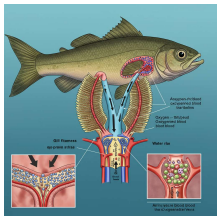
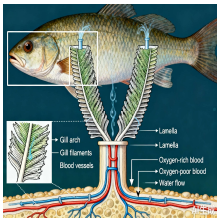


Imagen3

✓	**C1**	**The illustration shows a fish, with a box indicating the location of the gills behind the head.**
✓	P1.1	Is there a fish depicted in the illustration?
✓	P1.2	Is there a box indicating a specific area in the illustration?
✗	P1.3	Is the box indicating the location of the gills?
✗	P1.4	Is the box located behind the head of the fish?
✓	P1.5	Does the illustration avoid depicting the gills' location in front of the fish's head?
✓	P1.6	Does the illustration avoid marking the gill location behind the head with a circle?
✓	P1.7	Does the illustration show a box indicating the location of the gills behind the head of the fish?
✗	**C2**	**The gills resemble a feathery worm and are attached to a structure called a columnar gill arch, forming a tall V.**
✓	P2.1	Do the gills resemble a feathery worm?
✓	P2.2	Are the gills attached to a structure called a columnar gill arch?
✓	P2.3	Do the gills and the columnar gill arch together form a tall V?
✓	P2.4	Does the image show gills that resemble a feathery worm and are attached to a columnar gill arch, forming a tall V?
✓	P2.5	Does the illustration avoid depicting gills that do not resemble a feathery worm?
✓	P2.6	Does the illustration avoid showing a columnar gill arch that does not form a tall V with the gills attached?
✗	P2.7	Is the label "Gill arch" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C3**	**Water travels in from the outside of the V, between each gill, then travels out of the top of the V.**
✓	P3.1	Is water depicted entering from the outside of the V?
✓	P3.2	Is water shown traveling between each gill?
✓	P3.3	Is water illustrated exiting from the top of the V?
✗	P3.4	Does the image show water traveling in from the outside of the V, between each gill, then traveling out of the top of the V?
✗	P3.5	Does the illustration avoid showing water traveling into the gills from the top of the V instead of the outside of the V?
✗	P3.6	Does the illustration avoid depicting water exiting from the sides or the base of the V instead of the top of the V?
✗	P3.7	Is the label "Water flow" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	**C4**	**Veins travel into the gill from the base of the gill arch, and arteries travel back out on the opposite side.**
✓	P4.1	Does the diagram show veins traveling into the gill from the base of the gill arch?
✓	P4.2	Does the diagram show arteries traveling back out on the opposite side of the gill arch?
✓	P4.3	Do the veins in the image travel into the gill from the base of the gill arch, and do the arteries travel back out on the opposite side?
✓	P4.4	Does the illustration avoid showing veins traveling from any place other than the base of the gill arch?
✓	P4.5	Does the illustration avoid showing arteries traveling back to the base of the gill arch instead of the opposite side?
✗	P4.6	Is the label "Blood vessels" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.7	Is the label "Oxygen-rich blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.8	Is the label "Oxygen-poor blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C5**	**Water travels over the gill, passing over oxygenated arteries first, then over deoxygenated veins.**
✓	P5.1	Does the diagram depict water traveling over the gill?
✗	P5.2	Does the diagram show water passing over oxygenated arteries first?
✗	P5.3	Does the diagram show water passing over deoxygenated veins after passing over the oxygenated arteries?
✓	P5.4	Does the image show water traveling over the gill and passing over oxygenated arteries first, then over deoxygenated veins?
✓	P5.5	Does the illustration avoid showing water traveling over deoxygenated veins first and then over oxygenated arteries?
✗	P5.6	Does the illustration avoid depicting veins traveling out of the gill from the base of the gill arch instead of veins traveling into the gill?
✗	P5.7	Is the label "Lamella" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	**C6**	**As water flows over the gills, oxygen is transferred to blood via the veins.**
✓	P6.1	Is water depicted flowing over the gills?
✗	P6.2	Is oxygen depicted being transferred to blood?
✓	P6.3	Are veins depicted in the diagram?
✗	P6.4	Does the illustration show oxygen being transferred to blood via the veins as water flows over the gills?
✗	P6.5	Does the illustration avoid depicting water flowing over the gills in the opposite direction of the described path (i.e., from the top of the V to the outside)?
✓	P6.6	Does the illustration avoid showing oxygen transfer to the blood occurring in the arteries instead of the veins?
✗	P6.7	Is the label "Gill filaments" correctly labeled in the diagram, with proper spelling and accurate positioning?
✗	**C7**	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P7.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✗	P7.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✓	P7.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✗	P7.4	Does each arrow clearly connect the source and target elements?
✗	P7.5	Does each arrow avoid being floating, overlapping, or unclear?
✗	P7.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✗	P7.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure U: Evaluation case of Imagen3 in the second task.

Detailed Description:
The image depicts a fish with a highlighted focus on the gill region located just behind the head, marked by a box. A detailed close-up view of the gills is included, showing each gill filament with a feather-like appearance. Two stacks of gill filaments are attached to a columnar gill arch, forming a tall, distinct V shape. Water is shown entering from the outside of the V, flowing between the filaments, and exiting through the top of the V. Veins are illustrated entering the gill from the base of the gill arch, while arteries exit from the opposite side. The illustration also provides a zoomed-in view of a single gill filament, indicating the direction of water flow: water first passes over the oxygen-rich arteries and then over the oxygen-poor veins.
All components are clearly labeled, including "Gill arch," "Gill filaments," "Blood vessels," "Lamella," "Oxygen-rich blood," "Oxygen-poor blood," and "Water flow." The diagram clearly visualizes the process of oxygen transfer from the water to the blood as it moves across the gill surfaces.

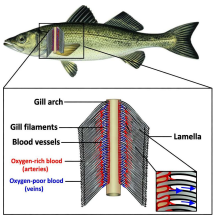


Seedream

	C1	**The illustration shows a fish, with a box indicating the location of the gills behind the head.**
✓	P1.1	Is there a fish depicted in the illustration?
✓	P1.2	Is there a box indicating a specific area in the illustration?
✓	P1.3	Is the box indicating the location of the gills?
✓	P1.4	Is the box located behind the head of the fish?
✓	P1.5	Does the illustration avoid depicting the gills' location in front of the fish's head?
✓	P1.6	Does the illustration avoid marking the gill location behind the head with a circle?
✓	P1.7	Does the illustration show a box indicating the location of the gills behind the head of the fish?
	C2	**The gills resemble a feathery worm and are attached to a structure called a columnar gill arch, forming a tall V.**
✓	P2.1	Do the gills resemble a feathery worm?
✗	P2.2	Are the gills attached to a structure called a columnar gill arch?
✓	P2.3	Do the gills and the columnar gill arch together form a tall V?
✓	P2.4	Does the image show gills that resemble a feathery worm and are attached to a columnar gill arch, forming a tall V?
✓	P2.5	Does the illustration avoid depicting gills that do not resemble a feathery worm?
✓	P2.6	Does the illustration avoid showing a columnar gill arch that does not form a tall V with the gills attached?
✗	P2.7	Is the label "Gill arch" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C3	**Water travels in from the outside of the V, between each gill, then travels out of the top of the V.**
✗	P3.1	Is water depicted entering from the outside of the V?
✗	P3.2	Is water shown traveling between each gill?
✓	P3.3	Is water illustrated exiting from the top of the V?
✗	P3.4	Does the image show water traveling in from the outside of the V, between each gill, then traveling out of the top of the V?
✓	P3.5	Does the illustration avoid showing water traveling into the gills from the top of the V instead of the outside of the V?
✗	P3.6	Does the illustration avoid depicting water exiting from the sides or the base of the V instead of the top of the V?
✗	P3.7	Is the label "Water flow" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C4	**Veins travel into the gill from the base of the gill arch, and arteries travel back out on the opposite side.**
✓	P4.1	Does the diagram show veins traveling into the gill from the base of the gill arch?
✓	P4.2	Does the diagram show arteries traveling back out on the opposite side of the gill arch?
✓	P4.3	Do the veins in the image travel into the gill from the base of the gill arch, and do the arteries travel back out on the opposite side?
✓	P4.4	Does the illustration avoid showing veins traveling from any place other than the base of the gill arch?
✓	P4.5	Does the illustration avoid showing arteries traveling back to the base of the gill arch instead of the opposite side?
✗	P4.6	Is the label "Blood vessels" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.7	Is the label "Oxygen-rich blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	P4.8	Is the label "Oxygen-poor blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C5	**Water travels over the gill, passing over oxygenated arteries first, then over deoxygenated veins.**
✗	P5.1	Does the diagram depict water traveling over the gill?
✗	P5.2	Does the diagram show water passing over oxygenated arteries first?
✗	P5.3	Does the diagram show water passing over deoxygenated veins after passing over the oxygenated arteries?
✗	P5.4	Does the image show water traveling over the gill and passing over oxygenated arteries first, then over deoxygenated veins?
✓	P5.5	Does the illustration avoid showing water traveling over deoxygenated veins first and then over oxygenated arteries?
✓	P5.6	Does the illustration avoid depicting veins traveling out of the gill from the base of the gill arch instead of veins traveling into the gill?
✗	P5.7	Is the label "Lamella" correctly labeled in the illustration, with proper spelling and accurate positioning?
	C6	**As water flows over the gills, oxygen is transferred to blood via the veins.**
✓	P6.1	Is water depicted flowing over the gills?
✗	P6.2	Is oxygen depicted being transferred to blood?
✓	P6.3	Are veins depicted in the diagram?
✗	P6.4	Does the illustration show oxygen being transferred to blood via the veins as water flows over the gills?
✗	P6.5	Does the illustration avoid depicting water flowing over the gills in the opposite direction of the described path (i.e., from the top of the V to the outside)?
✗	P6.6	Does the illustration avoid showing oxygen transfer to the blood occurring in the arteries instead of the veins?
✓	P6.7	Is the label "Gill filaments" correctly labeled in the diagram, with proper spelling and accurate positioning?
	C7	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✗	P7.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✓	P7.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✗	P7.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✗	P7.4	Does each arrow clearly connect the source and target elements?
✓	P7.5	Does each arrow avoid being floating, overlapping, or unclear?
✗	P7.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✗	P7.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure V: Evaluation case of Seedream in the second task.

Detailed Description:
The image depicts a fish with a highlighted focus on the gill region located just behind the head, marked by a box. A detailed close-up view of the gills is included, showing each gill filament with a feather-like appearance. Two stacks of gill filaments are attached to a columnar gill arch, forming a tall, distinct V shape. Water is shown entering from the outside of the V, flowing between the filaments, and exiting through the top of the V. Veins are illustrated entering the gill from the base of the gill arch, while arteries exit from the opposite side. The illustration also provides a zoomed-in view of a single gill filament, indicating the direction of water flow: water first passes over the oxygen-rich arteries and then over the oxygen-poor veins.
All components are clearly labeled, including "Gill arch," "Gill filaments," "Blood vessels," "Lamella," "Oxygen-rich blood," "Oxygen-poor blood," and "Water flow." The diagram clearly visualizes the process of oxygen transfer from the water to the blood as it moves across the gill surfaces.



wan2.5

✓	**C1**	**The illustration shows a fish, with a box indicating the location of the gills behind the head.**
✓	P1.1	Is there a fish depicted in the illustration?
✓	P1.2	Is there a box indicating a specific area in the illustration?
✓	P1.3	Is the box indicating the location of the gills?
✓	P1.4	Is the box located behind the head of the fish?
✓	P1.5	Does the illustration avoid depicting the gills' location in front of the fish's head?
✓	P1.6	Does the illustration avoid marking the gill location behind the head with a circle?
✓	P1.7	Does the illustration show a box indicating the location of the gills behind the head of the fish?
✓	**C2**	**The gills resemble a feathery worm and are attached to a structure called a columnar gill arch, forming a tall V.**
✓	P2.1	Do the gills resemble a feathery worm?
✗	P2.2	Are the gills attached to a structure called a columnar gill arch?
✓	P2.3	Do the gills and the columnar gill arch together form a tall V?
✓	P2.4	Does the image show gills that resemble a feathery worm and are attached to a columnar gill arch, forming a tall V?
✓	P2.5	Does the illustration avoid depicting gills that do not resemble a feathery worm?
✓	P2.6	Does the illustration avoid showing a columnar gill arch that does not form a tall V with the gills attached?
✗	P2.7	Is the label "Gill arch" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C3**	**Water travels in from the outside of the V, between each gill, then travels out of the top of the V.**
✗	P3.1	Is water depicted entering from the outside of the V?
✗	P3.2	Is water shown traveling between each gill?
✗	P3.3	Is water illustrated exiting from the top of the V?
✗	P3.4	Does the image show water traveling in from the outside of the V, between each gill, then traveling out of the top of the V?
✗	P3.5	Does the illustration avoid showing water traveling into the gills from the top of the V instead of the outside of the V?
✗	P3.6	Does the illustration avoid depicting water exiting from the sides or the base of the V instead of the top of the V?
✗	P3.7	Is the label "Water flow" correctly labeled in the illustration, with proper spelling and accurate positioning?
✓	**C4**	**Veins travel into the gill from the base of the gill arch, and arteries travel back out on the opposite side.**
✓	P4.1	Does the diagram show veins traveling into the gill from the base of the gill arch?
✓	P4.2	Does the diagram show arteries traveling back out on the opposite side of the gill arch?
✗	P4.3	Do the veins in the image travel into the gill from the base of the gill arch, and do the arteries travel back out on the opposite side?
✓	P4.4	Does the illustration avoid showing veins traveling from any place other than the base of the gill arch?
✓	P4.5	Does the illustration avoid showing arteries traveling back to the base of the gill arch instead of the opposite side?
✗	P4.6	Is the label "Blood vessels" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.7	Is the label "Oxygen-rich blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	P4.8	Is the label "Oxygen-poor blood" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C5**	**Water travels over the gill, passing over oxygenated arteries first, then over deoxygenated veins.**
✗	P5.1	Does the diagram depict water traveling over the gill?
✗	P5.2	Does the diagram show water passing over oxygenated arteries first?
✗	P5.3	Does the diagram show water passing over deoxygenated veins after passing over the oxygenated arteries?
✗	P5.4	Does the image show water traveling over the gill and passing over oxygenated arteries first, then over deoxygenated veins?
✓	P5.5	Does the illustration avoid showing water traveling over deoxygenated veins first and then over oxygenated arteries?
✓	P5.6	Does the illustration avoid depicting veins traveling out of the gill from the base of the gill arch instead of veins traveling into the gill?
✗	P5.7	Is the label "Lamella" correctly labeled in the illustration, with proper spelling and accurate positioning?
✗	**C6**	**As water flows over the gills, oxygen is transferred to blood via the veins.**
✗	P6.1	Is water depicted flowing over the gills?
✗	P6.2	Is oxygen depicted being transferred to blood?
✓	P6.3	Are veins depicted in the diagram?
✗	P6.4	Does the illustration show oxygen being transferred to blood via the veins as water flows over the gills?
✓	P6.5	Does the illustration avoid depicting water flowing over the gills in the opposite direction of the described path (i.e., from the top of the V to the outside)?
✓	P6.6	Does the illustration avoid showing oxygen transfer to the blood occurring in the arteries instead of the veins?
✓	P6.7	Is the label "Gill filaments" correctly labeled in the diagram, with proper spelling and accurate positioning?
✗	**C7**	**If the diagram includes visual symbols, such as arrows or markers, they must be accurately drawn and used.**
✓	P7.1	Are the arrows or markers in the diagram correctly used to represent their intended meanings in the alt text and caption?
✓	P7.2	If visually similar arrows or markers represent different meanings, are they clearly distinguished by labels or legends?
✓	P7.3	Do the arrows or markers indicating different types of processes or directions follow a consistent and distinguishable visual style?
✓	P7.4	Does each arrow clearly connect the source and target elements?
✗	P7.5	Does each arrow avoid being floating, overlapping, or unclear?
✗	P7.6	Does each arrow clearly connect the source and target elements without floating, overlapping, or unclear situations?
✓	P7.7	Are the elements in the diagram presented clearly and accurately, without any overlap?

Figure W: Evaluation case of Wan2.5 in the second task.