

Physics Performance Task: The "Physics Explained" Challenge

1. Task Overview

Total Marks: 30

Target Audience: Lower Secondary Students (Sec 1 & 2)

Group Size: 3 pax

Format: 90-second video

The Challenge

Your team must create an educational demonstration video to illustrate a Physics concept from a topic in the Sec 3 or Sec 4 syllabus. You must make the concept easy to understand, engaging, and visually clear for a lower secondary student.

Submission Requirements

- Each group must submit a **90 s** video.
- **Originality:** The video must be entirely your own work. **Do not reuse videos from the internet or experiments already shown by your teacher in class.**
- **Group introduction:** At the start of the video, all members must appear on screen to introduce themselves.
- **Demonstration:** You **must** use a real-life apparatus and setup.
 - *Note:* Animations/drawings are allowed for **explanation** only, not for the primary demonstration.
- **Captions:** All speech must be captioned in the video.
- **Balanced participation:** Every member must speak in the video, and speaking time should be roughly equal, no single member should dominate the presentation.
- At the end of video, **references and sources** should be acknowledged.
- Project brief to be submitted by the **group leader by 9 Mar 2026** (Term 1 Week 10, Monday) for teachers' approval.
- The video should be submitted by the **group leader** via Google classroom to your Physics teacher by **13 April 2026** (Term 2 Week 4, Monday)
- Peer assessment form must also be completed and submitted by each member by **13 April 2026**. Link to the form will be provided by your subject teacher in due course.
- Individual scores are subject to moderation based on peer assessment of contribution.

2. Assessment Rubrics (30 Marks)

Criteria	7 to 8 marks	5 to 6 marks	3 to 4 marks	0 to 2 marks
A. Physics Accuracy & Understanding (8 m)	<ul style="list-style-type: none"> Accurate illustration of concept Correct terms are used Concept is explained fully 	<ul style="list-style-type: none"> Illustration of concept is largely correct Most terms used are correct Minor imprecision/omission in concept 	<ul style="list-style-type: none"> Illustration of concept is partially correct Some terms used are correct ≥1 conceptual error/ incomplete reasoning 	<ul style="list-style-type: none"> Major misconception Largely incorrect explanation/ terms Multiple errors; explanation largely incorrect/irrelevant
B. Communication / Clarity + Captions (8 m)	<ul style="list-style-type: none"> Easy to understand step-by-step explanation Language is age-appropriate Captions are complete & synchronised with the footage Audio clear 	<ul style="list-style-type: none"> Clear overall Language is age-appropriate Minor errors in captions or slightly unsynchronised Audio generally clear 	<ul style="list-style-type: none"> Some parts are unclear/ confusing Too technical/ jargon heavy Errors in captions/ incomplete/ omissions in captions/ unsynchronised Audio is unclear 	<ul style="list-style-type: none"> Hard to understand Too technical/ jargon heavy Captions mostly missing/ off-sync Audio quality is poor
C. Engagement / Showmanship + Demonstration Quality & Safety (8 m)	<ul style="list-style-type: none"> Demo clearly shows phenomenon Well-constructed setup Appropriate safety measures have been implemented Steady and clear footage Presenters are confident and engaging Creative presentation 	<ul style="list-style-type: none"> Demo works Correct setup Appropriate safety measures have been implemented Generally clear footage with minor visibility/angle issues Presenters are clear and confident 	<ul style="list-style-type: none"> Demo somewhat works Basic setup Minor oversight on safety measures Unclear footage with minor visibility/angle issues Presentation meets basic expectations 	<ul style="list-style-type: none"> Demo is inaccurate/ does not work Setup is poorly assembled Major oversight on safety measures Unclear/shaky footage with visibility/angle issues Presentation ineffective in explaining concept
D. Organisation, Timing & Documentation (6 m)		<ul style="list-style-type: none"> Coherent and logical flow Within (90 ± 10) s Acknowledgement /references cited 	<ul style="list-style-type: none"> Generally organized with minor flow issues Within (90 ± 20) s Acknowledgement /references cited 	<ul style="list-style-type: none"> Poor organization Timing off (>20 s); Acknowledgement /references missing

3. Student FAQ

- **Can I use AI to help me?**
You may use AI to brainstorm ideas or simplify your script. However, the final script must be your own work, and you **cannot** use AI-generated voiceovers.
- **Do we all need to be on camera?**
Only for the introduction at the start. After that, you may choose who demonstrates and who narrates.
- **Can I use a drawing for the experiment?**
No. The demonstration must be a real, physical setup. You can use drawings only to help explain the "non-visible" physics concepts (like force arrows or light rays).
- **What is the time limit?**
90 seconds. You have a 10 second buffer. Going significantly over or under will result in mark deductions.
- **Can we borrow equipment from the lab?**
No. Please source for your own equipment.

4. Checklist

- All members introduced themselves on camera at the start.
- The video is approximately 90 seconds long.
- Every word spoken has a clear caption on screen.
- The physics phenomenon is demonstrated with real objects.
- The language is simple enough for a lower secondary student.
- We have all submitted the peer review form.