Follow one NCERT chapter with free AI tools

Prepared for Nikhil Karkare's teacher workshop at Walnut School.

This is the hands-on companion to the workshop. Keep it open beside your AI app and work one step at a time — there is no prize for rushing, and every step has a fallback if a free limit gets in the way.

We work from **NCERT, Curiosity, Grade 7, Chapter 11: Light: Shadows and Reflections, Reprint 2026–27**. Our short lesson lives on shadow formation (printed pages 158–159) and the position examples (page 166). In the chapter PDF those are pages 6, 7 and 14.

Get the chapter from NCERT: https://ncert.nic.in/textbook/pdf/gecu111.pdf . The public kit links to it; it does not republish it.

A word on honesty before we start: the files in this kit are prepared examples, not screenshots or logs of a signed-in free-account run. The free features were checked against official help on 3 November 2026. Limits, school settings and menus all change over time. You never need to start a paid trial to finish this workshop.

Start: make a chapter folder

Give the work a home first. In Drive choose New → New folder. Make Class 07 / Science / Ch11-Light, and keep Source, Prompts, Drafts, Checked, Classroom and Review apart. The folder template and the Files-and-five-words guide show the pattern. Keep the teacher key away from pupil copies, and check sharing — a folder name does not make it private.

1. Make a source-based notebook

This is the tool that keeps you honest to the book, so it is worth setting up carefully. Use the desktop web app for the full setup. Google's current help calls it Gemini Notebook; you may still know it as NotebookLM.

1. Open https://notebook.google.com/ . Make a notebook named "Class 7 — Light — NCERT only".
2. Choose Add sources and upload the official chapter PDF. Wait for it to finish.
3. In Sources, select only that PDF. Do not add websites or start research.
4. In Chat → Configure Chat, turn off connected apps for this notebook where shown. Save the instruction below. Phone controls differ; on a phone, paste the instruction into each new chat.

Paste: "Use only the selected NCERT chapter. Focus on printed pages 158–159 and 166. Cite each science claim. Do not search the web, use connected apps or add sources. If an answer is not in the chapter, say 'Not found in this chapter'. Keep teaching ideas separate from textbook facts."

Now ask: "What is needed to observe a shadow? Give the source citation." Click the citation and read the actual passage. A citation is something to check, not a stamp of truth.

Then set the trap: “What is the price of my torch?” The chapter gives no price, so it should say it cannot find that information. If it searches or invents a number, stop calling the result chapter-only.

A trick worth remembering: saved AI notes can quietly become sources, and then the notebook starts citing its own earlier answers back to you. Leave those notes unchecked. Source selection and instructions help grounding; they are not a technical guarantee that outside knowledge is impossible.

For a lesson draft, ask for a plan, teacher questions and a separate key, then check it. On desktop you can Save to note, then use its More menu → Export to Docs. Deselect the AI note as a source. If a control is missing, just copy the checked text into a new Google Doc.

2. Keep the chapter in a Project

ChatGPT and Claude both document Projects on Free, with limits. Pick one — you do not need both for your first try.

ChatGPT web: New project → name it “Class 7 Light” → add the chapter. In the project’s … menu → Project settings, add the saved rules.

Claude web: Projects → + New Project → name it → add the chapter in project knowledge → Set project instructions → Save instructions.

Run the source-check prompt before you ask for any real work. Ask the app to name the file, show a short source line, and tell you whether it can read the diagrams — a Drive link alone does not prove it has. Upload a clear diagram separately if you need to.

A Project keeps work together; it is not a source-only notebook, and it is not a Drive folder. Start a new task chat inside the same project, and never assume another app has inherited the context.

3. Make the lesson plan in ChatGPT Free

Use + → Add photos & files if it is there, then attach the chapter or the kit’s source brief. Open the saved lesson-plan prompt.

Paste: “Use only my source. Make a 40-minute Class 7 shadow lesson. Begin with three coloured opaque cards and one dark shadow. Include a prediction, a safe torch test, teacher questions, support for reading, an exit check and source pages. Mark planned observations as predictions, not results.”

Compare the draft with the prepared plan in the kit. If the app will not give you a downloadable Word file, copy the checked text into Google Docs. A chat answer is not a file.

4. Make an image in Gemini Free

Open Gemini and choose Images where offered. Paste the image prompt from the kit.

Short version: “Make a simple teaching diagram. A white LED torch is on the left. An opaque red card is in the middle. A white screen is on the right. Put the dark shadow on the screen. Label the three parts. Keep the light path sensible. Do not make the shadow red.”

Check the source, object and screen order, and read every label. The picture is a teaching image, not evidence from a real experiment. Download it, then drop it into the lesson or the slides. Gemini documents image access without an AI plan, with limits; the paid Pro redo is not part of this exercise, and ChatGPT Free documents image generation too, with its own limits.

Then try a small edit: “Change only the card from red to blue. Keep the setup and dark shadow unchanged.” Compare both versions. Changing one thing is far easier to check than asking for a whole new scene.

5. Get real files in Claude Free

Claude documents Word, PowerPoint, Excel and PDF files on Free, within its usage allowance.

In Settings → Capabilities, enable Code execution and file creation / Create and edit files if needed. On mobile, tap your initials or name in the left sidebar, then Settings → Capabilities. A download may open in another app’s preview; use its save or share control to keep a copy. Upload the checked lesson and image, then ask for one file at a time:

“Create an actual downloadable Word file for this lesson plan. Keep the science, timings and source references unchanged. Attach the file.”

Then: “Make six classroom PowerPoint slides from this approved plan. Keep the questions and marks unchanged. Use my checked image. Add short teacher notes. Attach the actual PPTX.”

Download, open and inspect each file. A filename in a chat is not a download. If you hit the free limit, wait for its reset notice or use the prepared kit. Do not upgrade just for this.

6. Use Google Slides without paying for an AI connection

At drive.google.com choose New → File upload. Upload the downloaded PPTX, and open it with Google Slides where offered. Check every slide, and keep your original PPTX too.

Native AI editing inside an existing Google Slides file is account-dependent. Claude’s guide documents a Slides connector, but explicit free eligibility for that separate editor was not something we could confirm for every account. Treat it as optional, not a required free step, and do not confuse ordinary Slides with a paid Gemini side panel inside Slides.

7. Make questions, then check them without the first key

This is the trust-but-verify step, and it is the one I would not skip. Use the kit’s question prompt and ask for six questions, a separate key, marks and source pages, with a flag on any question the source cannot answer.

Now open a fresh chat. Give it the source and the questions, but not the first key, and ask it to solve and check them. Compare with NCERT yourself. Two AIs agreeing does not make the answer right.

Say: “Show Original | Suggested change | Reason. Do not fix things silently. I will choose the changes.”

8. Try a Gmail connection only if permitted

Claude documents Gmail and Drive connectors for all users, but a teacher must approve the Google connection, and the school may block it. A Drive connection can read text without reading embedded images, so upload a needed diagram separately and ask what the app can actually see. The connector can do more than read — do not use real parent mail for this workshop.

Documented Claude route: Customize → Connectors. In chat, + → Connectors → choose Gmail. Review the permission screen yourself. Use a safe test email about the shadow lesson.

Ask: “Find my test email titled Shadow lesson. List the materials it asks for. Do not send, change or delete anything.” Open the cited email and check it.

Gemini also documents eligible personal-account connected apps without an AI plan. Its documented route is Customize → Connectors → Google Workspace → Add. Account settings and school policy still apply. Do not switch to a personal account to get around school rules. ChatGPT-specific Gmail/Drive free eligibility was not established well enough to make it a core exercise.

Free fallback: paste the made-up email text into chat, ask for Subject and Body, copy the result into Gmail → Compose, check it and leave it unsent. No connection needed.

9. Read a photo before marking

Use the kit’s synthetic answer image. Ask first for the exact text, keeping [unclear] where you cannot read a word. A teacher checks the image and corrects the text — and only then do you supply the approved key and ask for suggested marks and reasons.

The teacher approves the final marks. Held answers stay blank and outside the approved CSV. The kit’s decisions are simulated; no real pupil work is used. Import assessment/approved-Q1-only.csv into a new test Sheet. Expect two data rows, both Q1, each out of 2. The XLSX is the three-row review log, not the approved export. Check the IDs, the row count and the scores. Never practise on a live gradebook.

10. Reuse a .md file or try a Skill

A .md file is just readable text. Use the saved recipe as Project instructions, or paste it into a new chat. It is not code you need to run.

Claude documents Skills on Free. A prepared instruction-only Skill ZIP can be uploaded through Customize → Skills → + → Create skill → Upload a skill, where these controls are offered. File creation must be enabled. The kit’s Skill has no scripts in it. If that feels like one step too many, Project instructions do the same job more simply.

Cowork is paid-only. The free route here is supervised chat: attach a small source, ask for one output, download, check, then ask for the next. It does not give you Cowork's autonomous folder work or scheduling, and for this workshop it does not need to.

A file tip: change the format, not the lesson

For a document already in Google Docs, choose File → Download → PDF or Word, then open the result and check it. For a PDF-to-Word task, use the kit's own worksheet PDF with Claude Free file creation where offered. Ask: "Create a Word copy. Keep wording, numbering, blanks and marks unchanged. Flag unreadable parts. Do not improve the questions."

This is not a promise of faithful layout. A scan needs a transcription review, and formulas, tables, diagrams and page breaks can all shift. Compare every question against the original. The kit's PDF companions were laid out separately; they are not claimed native Office conversions.

Your first repeat

The real payoff comes the second time. Keep the source, the saved rules and one checked example, then swap the chapter and the goal for your next lesson. Ask the AI to confirm its new source out loud. Never let an old answer key or a topic-specific rule wander into a new lesson by accident.

This guide describes documented features, not a finished test on your account. Use the prepared files whenever a menu, a free allowance or a school permission blocks the live step. No paid trial, public sharing or email send is needed for the core workshop.