

Feynman technique worksheet

Use one explanation to find what you need to check. Complete pages 1 and 2 for one small question. Page 3 shows a finished example.

Start with some background. Read an introduction or study an example first if the topic is new. Put the source aside for your first explanation; reopen it to check.

1 Choose one question

My question _____

Audience _____ Date _____

Reference to check _____

2 Explain without notes

What does the idea mean? How or why does it work? Define the terms you need. Mark uncertain parts with a question mark instead of guessing.

Show it in an example

Use a small calculation, situation, drawing, or sequence of steps.

Before you check

Underline any claim you cannot justify. Circle a term you cannot explain. Note a missing condition or a question your audience might ask.

Check revise and apply

Question or topic _____

3 Check the gaps against your reference

Check the confident parts too. Replace broad notes such as “study more” with a specific question. Record the exact source section or page.

Question or gap	Correction or answer	Source or location

4 Explain it again with the source closed

Use your own words. Keep essential conditions and exceptions. If you use an analogy, say where it stops being useful.

Try a different example

Change the numbers, situation, or condition. Make a prediction or solve the new case, then check it.

Decide what comes next

Still uncertain about _____

Next step or person to ask _____

When I will return to this _____

A clear explanation is not proof of competence. Add appropriate practice and feedback.

Mean and median example

A fictional practice example using invented task times. These entries show how to move from a plausible explanation to a checked one.

Question Why can the mean and median give different pictures of task time?

Audience A colleague learning to summarize task durations.

First explanation

“The mean and median both show the typical time. Add everything and divide to get the mean. The median is the middle, so they should be about the same.”

Gaps and corrections

Question or gap	What the check shows
Must the two results be similar?	For 2, 3, 3, 4, 18 minutes: total 30; mean $30 / 5 = 6$; median 3. The large value changes the mean substantially.
What does “middle” mean?	Sort the values first. With an even number, take the mean of the two middle values.
Is the median always better?	No. Choose the summary for the question. The long task still matters to the total workload.

Revised explanation

The mean shares the total equally across all observations. The median identifies the middle of the sorted values; with an even number, take the mean of the two middle values. An unusually large value can move the mean substantially while leaving the median unchanged. Which summary is useful depends on what we need to know.

New cases and checked results

Change the largest value. For 2, 3, 3, 4, 28: total 40; mean 8; median 3. The median stays the same even though the mean rises.

Try an even-number set. For 2, 3, 4, 19: the middle values are 3 and 4, so the median is 3.5.

Next question. How would I explain both summaries in a report without hiding the spread of the task times?

Next step. Practice with another small dataset and explain which question each summary answers.

Reference used for checking

NIST/SEMATECH e-Handbook of Statistical Methods
Section 1.3.5.1 Measures of Location

<https://www.itl.nist.gov/div898/handbook/eda/section3/eda351.htm>