LESSON 4

Develop a Research Question

Write a focused, answerable question. A hypothesis only if your method needs one.

About 110 min | Reading 30 min | Slides 75 min | Quiz 5 min

> **Learning objective.** By the end you will be able to turn a broad topic you care about into a focused, answerable research question.

Key points

- A good question is clear, focused and answerable with your time and tools.
- “How” and “why” questions usually go further than yes-or-no ones.
- Only add a hypothesis if your method tests a prediction. Many good projects don’t.

Learn

A topic is an area you’re curious about, like social media or school lunches. A research question picks out one specific thing within that area that you can actually investigate. Good questions are clear, narrow enough to finish with the time and tools you have, and open-ended. Questions that start with ‘how’ or ‘why’ usually go further than ones you can answer with a quick yes, no or single fact.

To get there, read a little background first so you know what’s already been said and where the gaps are. Then narrow your topic by place, time period, group of people or one variable. Run the ‘so what?’ test: why would anyone care about the answer?

Expect your question to change. Researchers often rewrite their question after early reading or a small pilot test, and that’s normal. Not every question needs a hypothesis, either. A descriptive question (‘What do students at my school eat for lunch?’) or an interpretive one (‘How did newspapers portray the 1918 flu?’) is just as valid as a cause-and-effect one.

Example

> Omar starts with ‘phones and sleep.’ That’s too broad. After reading two short articles, he narrows it to ‘Do students at my school who use their phones after 11 p.m. report less sleep?’ Then he notices ‘less sleep’ is vague, so he changes it to ‘report fewer than 8 hours of sleep on school nights.’ Now he knows exactly who he’s asking, what he’s measuring and what he needs to collect, and it fits into a two-week project.

Across disciplines

In the sciences, a question often leads to a testable hypothesis about variables. In history, literature or the arts, it often asks how or why something was represented or understood. In engineering or design, it can be framed as a problem to solve: ‘How might we build X so that it does Y?’

Watch

How to Develop a Strong Research Question, Scribbr (4 min): youtube.com/watch?v=71-GucBaM8U

> **Takeaway.** A good research question is focused, answerable and worth asking, and it's fine for it to change as you learn more.

Try it: Topic-to-question funnel

Name: _____ Date: _____

1. Write down one broad topic you genuinely care about.

2. Narrow it three times: pick a specific group, a place or time period, and one thing to look at.

3. Write two versions of your question, one starting with ‘how’ or ‘why’ and one starting with ‘what’.

4. Check each version: Is it clear? Can I answer it with the time and resources I have? Does it pass the ‘so what?’ test? Revise the weaker one.

Lesson 4 quiz

Circle one answer for each question. Pass mark: 4 of 5.

1. According to the lesson, which type of research question most clearly calls for a testable hypothesis?

A. A descriptive question about how Grade 9 students commute
B. An interpretive question about how a newspaper framed an event
C. A causal question about whether changing X changes Y
D. A design question about building a low-cost noise sensor

2. A student studying economics surveys classmates and finds that those with part-time jobs tend to report lower grades. Which conclusion is justified?

A. Part-time jobs cause students' grades to fall
B. Lower grades cause students to take on more part-time jobs
C. The school should ban part-time jobs to raise grades
D. Jobs and lower grades are associated in this sample

3. In the invented example, why did Noor change "Does noise affect concentration?" to a question saying noise is "related to" concentration?

A. Her non-experimental design cannot prove cause and effect
B. Using "related to" makes the question sound more academic and formal
C. Correlational questions must always include a hypothesis
D. Her supervisor asked her to study all schools instead

4. A student studying psychology wants to send a short Google Form about exam stress to friends. What must happen before any form is sent?

A. Nothing, because an informal form sent to friends is not research
B. Send it now, then show the results to the supervisor afterwards
C. Collect names on the form so answers can be checked later
D. Supervisor approval, an information sheet and consent or assent

5. A student studying biology has four weeks, a phone and the school garden. Which research question is most focused and answerable?

A. Why are bee populations declining in every country and region of the world today?
B. Is gardening good for the environment, for wildlife and for people in general?
C. How do bee visits to our school's lavender differ between morning and afternoon?
D. How do flowers of every kind affect all the insects that live anywhere near them?

Further reading

- **How to Write a Research Question**, George Mason University Writing Center. A step-by-step process with examples of weak and strong research questions.
  https://writingcenter.gmu.edu/writing-resources/research-based-writing/how-to-write-a-research-question

- **The Research Problem/Question**, USC Libraries, University of Southern California. Explains the ‘so what?’ test and different types of research problems.
  https://libguides.usc.edu/writingguide/introduction/researchproblem
- **Narrowing a Topic Idea**, USC Libraries, University of Southern California. Practical strategies for shrinking a topic by place, time or group.
  https://libguides.usc.edu/writingguide/narrowtopic