Education & Learning / Study Guides

Topic Deconstructor

Break any subject into hierarchical learning objectives and prerequisite chains — prerequisite mapping for mastery-based learning.
Difficulty: Intermediate
Model: GPT-4 / Claude / Gemini
Use Case: Curriculum Planning, Self-Study
Updated: June 2026
Why This Prompt Exists
Most learners jump into a topic without understanding prerequisites — leading to confusion, frustration, and knowledge gaps. Even expert learners can’t always identify what they need to know first.

You get:

- students lost because they lack prerequisite knowledge
- inefficient learning (studying advanced topics before foundations)
- hidden knowledge gaps that cause future confusion
- no clear learning path (random topic order)
- frustration when concepts don’t connect

But topics have structure:

- foundational knowledge: absolute prerequisites (must know first)
- core concepts: central ideas of the topic
- advanced applications: extensions and special cases
- connections: related topics and cross-disciplinary links
- learning objectives: measurable outcomes at each level

Without deconstruction, learning is random.
This prompt breaks topics into prerequisite chains and hierarchies.

The Prompt

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Assume the role of a learning architect who deconstructs topics into
prerequisite hierarchies.

Your task is to break a subject into learning objectives with clear
prerequisite chains.

Generate:

1. TOPIC OVERVIEW
   - Subject: [topic name]
   - Difficulty level: [Beginner / Intermediate / Advanced]
   - Estimated study time: [X hours/days/weeks]
   - Target audience: [e.g., High school students, College,
Professionals]

2. PREREQUISITE KNOWLEDGE (must know BEFORE starting)

| Prerequisite | Why Needed | Verification |
|--------------|------------|--------------|
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| [concept/skill] | [why it's required] | [how to confirm mastery] |

3. HIERARCHICAL LEARNING OBJECTIVES

Level 1: Foundations (Essential concepts)
- Objective 1.1: [measurable outcome]
- Objective 1.2: [measurable outcome]

Level 2: Core Concepts (Main body of knowledge)
- Objective 2.1: [measurable outcome]
- Objective 2.2: [measurable outcome]

Level 3: Applications (Using the knowledge)
- Objective 3.1: [measurable outcome]
- Objective 3.2: [measurable outcome]

Level 4: Advanced Topics (Extensions and special cases)
- Objective 4.1: [measurable outcome]
- Objective 4.2: [measurable outcome]

4. CONCEPT DEPENDENCY MAP

[Foundational Concept A] → [Core Concept B] → [Application C]
                    ↘ [Core Concept D] ↗

5. LEARNING OBJECTIVE VERBS (use measurable language)

Cognitive Level	Verbs	Example

Remember	Define, list, recall, identify	"Define photosynthesis"
Understand	Explain, summarize, describe	"Explain how plants convert light to energy"
Apply	Use, solve, demonstrate	"Calculate the rate of photosynthesis"
Analyze	Compare, contrast, categorize	"Compare C3 and C4 photosynthesis"
Evaluate	Assess, critique, justify	"Evaluate the efficiency of different light spectra"
Create	Design, construct, formulate	"Design an experiment to measure photosynthetic output"

6. SELF-ASSESSMENT CHECKPOINTS

Checkpoint	Covers Objectives	Success Criteria
Check 1	1.1-1.3	[Describe what student can do]
Check 2	2.1-2.4	[Describe what student can do]

7. COMMON DECONSTRUCTION MISTAKES

Mistake	Why It Fails	Correct Approach
Assuming prerequisites	Learner lacks context	Explicitly list prerequisites
Flat list of topics	No learning order	Build hierarchy
Vague objectives	Can't assess mastery	Use measurable verbs
Skipping foundations	Future confusion	Start from first

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principles |
| Isolated topics | Missed connections | Show dependencies |

INPUTS:

Topic/subject:
[PASTE TOPIC]

Target audience:
[PASTE AUDIENCE]

Time available:
[PASTE TIME]

Known prerequisites (if any):
[PASTE PREREQUISITES]

RULES:
- List all prerequisites explicitly (don't assume prior knowledge)
- Build from foundations to advanced (no jumping ahead)
- Use measurable verbs for learning objectives (not "understand" or
"know")
- Show dependencies between concepts (what leads to what)
- Create checkpoints to verify mastery before advancing
- Allow for different learning paths (not strictly linear if
alternatives exist)
- Estimate realistic time requirements (don't over- or under-estimate)
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How To Use It

- List all prerequisites explicitly — don’t assume prior knowledge.
- Build from foundations to advanced — no jumping ahead without prerequisites.
- Use measurable verbs for learning objectives — “define,” “explain,” “calculate,” not “understand” or “know.”
- Show dependencies between concepts — what leads to what, what builds on what.
- Create checkpoints to verify mastery before advancing to the next level.
- Allow for different learning paths — not strictly linear if alternatives exist.
- Estimate realistic time requirements — don’t over- or under-estimate study time.

Example Input

Topic/subject: “Introduction to SQL (Structured Query Language)”

Target audience: “Beginning data analysts, no prior database experience”

Time available: “Self-paced, estimated 2-3 weeks”

Known prerequisites: “Basic computer literacy, no programming required”

Why It Works

Most learners open a textbook or course and start at Chapter 1 — not knowing if they have the prerequisites or what the learning path should be.

This framework improves outcomes by forcing: prerequisite identification, hierarchical learning objectives, concept dependency mapping, measurable verb usage, and self-assessment checkpoints.

Failure modes this prevents: Students lost due to missing prerequisites, inefficient learning, hidden knowledge gaps, no clear learning path.

This improves on: Linear topic lists. Prerequisite mapping ensures mastery-based progression.

Related to: SG-02 (Study Guide Formatter) for content organization; SG-04 (Misconception Detector) for error prevention.

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