Education & Learning / Quiz Generation

Create plausible wrong answers based on common student misconceptions — error pattern recognition for effective multiple choice.
Difficulty: Advanced
Model: GPT-4 / Claude / Gemini
Use Case: Test Design, Assessment Quality
Updated: June 2026
Why This Prompt Exists
Bad multiple-choice questions have obvious wrong answers. Good ones have distractors that attract students who have specific misunderstandings. Most test designers don’t know how to write effective distractors.

You get:

- distractors that are too obvious (no discrimination power)
- distractors that are factually wrong but not based on real errors
- no diagnostic value (can’t tell what students misunderstand)
- students guessing correctly without understanding
- unreliable assessment results

But effective distractors are systematic:

- misconception-based: attracts students with specific error
- plausible: looks correct at first glance

- diagnostic: reveals what the student misunderstands
- parallel structure: same length and complexity as correct answer
- common errors: based on actual student mistakes

Without good distractors, multiple choice tests are useless.
This prompt generates distractors based on common misconceptions.

The Prompt

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Assume the role of a test designer who creates effective multiple-choice distractors.

Your task is to generate plausible wrong answers based on student misconceptions.

Generate:

1. QUESTION CONTEXT
   - Content area: [subject]
   - Correct answer: [what is right]
   - Common student errors: [known misconceptions]

2. DISTRACTOR TYPES

| Type | Description | Example | Diagnostic Value |
|------|-------------|---------|------------------|
| Misconception | Attracts students with specific misunderstanding | Student uses wrong formula | High |
| Partial truth | Has some correct elements, missing key part | Correct in one step, wrong in another | Medium |
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Common calculation error	Result of frequent arithmetic mistake	Off-by-one, decimal error	Medium
Surface feature match	Looks correct because of word matching	Uses same terminology incorrectly	Low
Opposite	Reverses the correct relationship	Confuses cause and effect	Medium
Out of range	Plausible but impossible in context	Number too high or low	Low

3. DISTRACTOR SET

Distractor	Error Type	Why Students Choose It	Diagnostic Meaning
[option A]	[type]	[reason]	[misunderstanding revealed]
[option B]	[type]	[reason]	[misunderstanding revealed]
[option C]	[type]	[reason]	[misunderstanding revealed]

4. DISTRACTOR QUALITY CHECKLIST

- [ ] Each distractor is plausible (looks correct initially)
- [ ] Each distractor is based on a real student error
- [ ] Distractors are parallel in length and complexity
- [ ] Only one clearly correct answer
- [ ] No "all of the above" or "none of the above" crutches
- [ ] Distractors diagnose specific misunderstandings

5. COMMON DISTRACTOR MISTAKES

Mistake	Why It Fails	Correct Approach
Too obvious	No discrimination power	Make plausible
Factually absurd	Wasted distractor	Based on real errors
Unparallel structure	Cues correct answer	Match length and format
"All of the above"	Students guess without knowing	Avoid entirely
No diagnostic value	Can't identify misunderstanding	Link to specific error

6. DISTRACTOR VALIDATION

Performance Pattern	Interpretation	Action
Students choosing Distractor A	Misconception X	Reteach concept X
Students choosing Distractor B	Misconception Y	Reteach concept Y
Students choosing correct answer	Mastery	Advance
Students randomly distributed	Question may be flawed	Review question clarity

INPUTS:

Question stem:
[PASTE THE QUESTION]

Correct answer:

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[PASTE THE CORRECT ANSWER]

Content area:
[E.G., "Algebra", "World History", "Biology"]

Known student misconceptions (if any):
[E.G., "Students confuse mean and median"]

Number of distractors needed:
[3 / 4]

RULES:
- Distractors must be plausible (students should pause before eliminating)
- Base distractors on real student errors (not invented mistakes)
- Avoid "all of the above" or "none of the above" (they encourage guessing)
- Make distractors parallel in structure (same length, same format)
- Each distractor should diagnose a specific misunderstanding
- Test distractors with real students and revise based on results
- Replace distractors that no one chooses (not doing their job)
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How To Use It

- Distractors must be plausible — students should pause before eliminating them.
- Base distractors on real student errors — not invented mistakes; use actual misconception data.
- Avoid “all of the above” or “none of the above” — they encourage guessing without knowledge.
- Make distractors parallel in structure — same length, same grammatical format.

- Each distractor should diagnose a specific misunderstanding — not just be wrong.
- Test distractors with real students and revise based on results — if no one picks a distractor, replace it.
- Replace distractors that no one chooses — they're not doing their diagnostic job.

Example Input

Question stem:
"What is the median of the following set of numbers: 4, 8, 12, 16, 20?"

Correct answer:
"12"

Content area:
"Statistics (Middle School)"

Known student misconceptions:
"Students often confuse median with mean (average) or mode (most frequent)"

Number of distractors needed:
"3"

Why It Works
Obvious wrong answers waste the potential of multiple-choice questions. Good distractors diagnose specific misunderstandings.
This framework improves outcomes by forcing: distractor type classification, misconception mapping, quality checklist application, and performance pattern interpretation.
Failure modes this prevents: Obvious distractors, no diagnostic value, students guessing correctly without understanding, unreliable assessment.
This improves on: Random wrong answers. Misconception-based distractors reveal what students misunderstand.

Related to: QZ-01 (Bloom’s) for cognitive level; QZ-04 (Rubric) for constructed response.

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