Grade 5 — Special Education: Reading Comprehension Supports

Duration: 45 minutes
Total marks: 75
Instructions:

- Write all answers in the spaces provided. Show all reasoning steps, cite evidence (sentence numbers or data rows) for every claim, and link each inference to the Core Axioms below. An evidence log (sentence numbers or data points) is required for each response that makes factual claims.
- Use clear numbered logic statements for proof-style items (e.g., 1. Premise; 2. Inference; 3. Conclusion), and label which Core Axiom each statement uses.
- This is a closed-book quiz. Use pencil/pen only. No electronic aids.
- Accommodations allowed as per IEP.

Core Axioms (use these for justification throughout the exam)
A1. Reading comprehension = accurate decoding + vocabulary knowledge + relevant background knowledge + active strategic monitoring.
A2. Supports (e.g., explicit instruction, organizer, previewing vocabulary) reduce working-memory load, allowing strategic monitoring.
A3. Effective supports are evidence-based: they produce measurable gains (e.g., improved accuracy, richer inferencing) and are explicitly taught.
A4. Progress must be validated by an evidence log: recorded data points that link support to outcome.

Passages and Data (use sentence numbers when citing)

Passage A — "Sam and the River" (6 short sentences)

1. Sam walked along the river and watched the water move over the rocks.
2. He saw a light on one stone that glimmered when the sun hit it.
3. Sam called it sparkling, but his friend Lara said it was only dampness.
4. Sam remembered a story his grandfather told about a secret coin hidden near a riverbend.
5. Sam wondered if the light was the coin and felt excited to look.
6. He decided to search the next day with Lara so they could decide together.

Passage B — "Classroom Garden" (6 short sentences)

1. Ms. Ortiz told the class they would plant a small garden to learn about growth.
2. Each student wrote a plan describing what they would plant and why.
3. Some students used the word "germinate" and Ms. Ortiz asked them to explain it.
4. Miguel thought germinate meant "to become green" but later learned it meant "start to grow from a seed."

5. The class added pictures to their plans and made a chart to track growth every week.
6. The charts helped the class notice small changes they otherwise might miss.

Mini-data for Q8 (Weekly Comprehension Accuracy for Student N) — Percent correct on short reading comprehension checks

- Week 1 (baseline, no supports): 52%
- Week 2 (preview vocab introduced): 60%
- Week 3 (graphic organizer added): 72%
- Week 4 (question stems taught): 75%

Quiz Questions (show reasoning and evidence logs; label axioms used)

1. (3 marks) Main idea and evidence (Passage A)

- Task: State the main idea of Passage A in one sentence. Then cite two sentences (by number) that best support your main idea and include a one-sentence logic justification linking each citation to A1 or A2.
- Space for answer:

2. (5 marks) Derive: Why previewing vocabulary helps (axioms + Passage A)

- Task: Using Core Axioms, produce a step-by-step derivation (3–5 numbered logic statements) that explains how previewing the word "glimmered" would improve Sam’s comprehension of Passage A. Cite the sentence where "glimmered" appears and include an evidence log.
- Space for answer:

3. (4 marks) Test an assumption and counterexample (Passage A)

- Task: Identify one assumption a reader might make when they read sentence 4 ("Sam remembered a story..."). State the assumption, produce a counterexample showing the assumption could be false, and conclude how that affects the interpretation of Sam’s excitement. Justify each step with a short logic statement tied to A1 or A3.
- Space for answer:

4. (5 marks) Evidence mapping — Claim-Warrant-Backing (Sequence support)

- Task: Claim: "A sequence graphic organizer would help Sam understand what to search for next." Create a three-part evidence map: Claim, Warrant (reasoning), Backing (two pieces of evidence drawn from Passage A and a Core Axiom). Number each part and include sentence numbers used.

- Space for answer:

5. (4 marks) Critique flawed reasoning (comparative)

- Flawed reasoning paragraph: "Because students understand every word, they do not need graphic organizers. If a text has difficult words, just give definitions and comprehension will be perfect."
- Task: Identify two flaws in this reasoning (each as a numbered statement), provide corrected reasoning for each flaw, and tie corrections to A1 or A2. Cite evidence or axioms.
- Space for answer:

6. (7 marks) Multi-step derivation to classroom recommendation (working-memory difficulty)

- Scenario: A student, Jada, has working-memory difficulty and often loses track during multi-sentence descriptions.
- Task: Start with A2 and derive (5–7 numbered logic steps) a specific, real-world classroom support (one clear action) that reduces Jada's cognitive load while reading a short passage like Passage B. End with an explicit implementation example (one sentence) of the support used during reading. Each inference must cite which Axiom it uses.
- Space for answer:

7. (3 marks) Bias and perspective audit (Passage A)

- Task: List two possible perspective limitations or biases present in Passage A (each as one sentence). For each, state how that limitation could affect an intervention choice (one sentence each). Tie to A4 where relevant.
- Space for answer:

8. (4 marks) Evidence log interpretation (mini-data)

- Task: Using the mini-data table, produce an evidence log (list Week #: % and brief note) that supports or refutes the claim: "Graphic organizers led to the largest measurable improvement." State conclusion (one sentence) and link to A3.
- Space for answer:

9. (9 marks) Proof-style: Chunking reduces cognitive load (Passage A & Axioms)

- Task: Prove, with numbered logic statements (at least 5), that dividing Passage A into two chunks (sentences 1–3 and 4–6) helps a reader make a correct inference about whether the light is a coin. Use A2 and A1 explicitly in your proof and cite the passage sentences used at each step. Conclude with one measurable outcome a teacher could collect to validate the effect (include what data to collect).
- Space for answer:

10. (3 marks) Success criteria and DOK mapping

- Task: List three measurable success criteria for a comprehension-support lesson (one short sentence each). For each criterion, assign a DOK level (1–4) and justify why that DOK level fits (one short justification).
- Space for answer:

11. (4 marks) Compare teacher plans and defend a corrected plan

- Scenario: Teacher A plans frequent vocabulary quizzes. Teacher B plans daily silent independent reading with no supports.
- Task: For each plan, state one likely flaw (one sentence each) and then write a two-sentence corrected combined plan that addresses both flaws and justify how the correction ties to A3.
- Space for answer:

12. (7 marks) Multi-step scaffold for inferencing with Passage B

- Task: Beginning with A1, give a 4–6 step derivation showing how to teach students to draw an inference about Miguel's initial definition of "germinate" (Passage B, sentence 4). Then provide a classroom script (2–3 sentences) using a think-aloud that models the scaffold for students. Each derivation step must reference which Axiom is used and which Passage B sentence supports the claim.
- Space for answer:

13. (4 marks) Evidence-mapping before conclusion (Passage B + data)

- Task: Organize the following into a mini-map (three bullets): claim, two warrants, and two backing items (one from Passage B and one from the mini-data). Then write a one-sentence conclusion about whether explicit vocabulary instruction should be continued.
- Space for answer:

14. (3 marks) Reflective mapping to DOK and success criteria (apply to Q12)

- Task: For your Q12 answer, list each success criterion you satisfied (use three criteria max), label DOK target for each, and in one sentence per criterion explain how your Q12 response meets it with evidence (sentence numbers or data).
- Space for answer:

15. (10 marks) Synthesis: 6-week intervention recommendation (open response)

- Task: Using Core Axioms, both passages, and the mini-data, recommend a 6-week intervention plan for a student who scores 52% baseline (Week 1) and is inconsistent with inferencing. The

plan must:

- State specific supports (no more than three) and weeks when they are introduced.
- Give two measurable progress indicators (what to measure and when).
- Include an evidence log template (show the columns you would collect weekly).
- Include a short bias audit (two sentences) describing at least one limitation of the plan and how to monitor it.
- Defend the plan step-by-step with numbered logic statements tied to axioms and citing evidence from passages or data.

- Space for answer:

Answer Key and Scoring Guide (detailed explanations)

General scoring notes:

- For every question that requires evidence citation, credit requires correct sentence numbers or data row references.
- Logic-step items: full marks require clarity, correct linkage to axioms, and valid inference steps. Partial credit awarded for correct partial chains.
- Evidence logs must list exact sentence numbers or week labels.

Question 1 (3 marks)

- Marking:
  - 1 mark: Correct main idea (e.g., "Sam sees a light near the river and wonders if it is a hidden coin; he plans to investigate with a friend.")
  - 2 marks: Two correct supporting sentences cited and one-sentence logic justification for each tied to A1 or A2 (1 mark each).

- Model answer:
  - Main idea: Sam sees a mysterious light by the river, thinks it might be a hidden coin, and decides to search with his friend. (1 mark)
  - Evidence 1: Sentence 2 ("He saw a light ... that glimmered...") — Justification: This shows the observed phenomenon that prompts interpretation (ties to A1: vocabulary/observation supports comprehension). (1 mark)
  - Evidence 2: Sentence 5 ("Sam wondered if the light was the coin...") — Justification: This explicitly states Sam's inference and motivation (ties to A1: active strategic monitoring). (1 mark)

Question 2 (5 marks)

- Marking:
  - 3 marks for 3–5 clear numbered logic steps correctly deriving the mechanism (1 mark per correct logical step, minimum 3 steps).
  - 2 marks for evidence log citing sentence 2 and explaining why the specific word matters (1 mark for citation, 1 for explanation).

- Model logic derivation (sample):
  1. Premise: "glimmered" is in sentence 2 and may be unfamiliar. (Axiom used: A1) (1 mark)
  2. If a reader lacks vocabulary for a key word, decoding + background knowledge remain insufficient to form the intended mental image. (A2) (1 mark)
  3. Previewing the word supplies meaning before reading, lowering cognitive load and allowing attention to inference about the light. (A2) (1 mark)

4. Therefore, previewing "glimmered" will help a reader form the correct image and decide whether it could be a coin. (A1/A2) (0.5–1 mark)

- Evidence log: Sentence 2 contains "glimmered." Explaining "glimmered" as "shone briefly with a small light" would allow the reader to interpret the scene rather than be distracted by the unknown word. (2 marks)

Question 3 (4 marks)

- Marking:
  - 1 mark: Clear identification of an assumption (e.g., assumption: the story Sam remembered is true and points to a coin).
  - 1.5 marks: Valid counterexample showing assumption could be false (e.g., grandfather's story was a tale with no real coin).
  - 1.5 marks: Conclusion on how that affects interpretation (e.g., reduces certainty of coin inference; must rely on further evidence), with A1 or A3 cited.

- Model answer:
  - Assumption: The reader assumes the grandfather's story refers to a real coin near this riverbend. (1 mark)
  - Counterexample: The "story" could be a family legend used to teach imagination — no real coin exists (e.g., fictional tale). (1.5 marks)
  - Conclusion: Because the story may be fictional, Sam’s excitement is a hypothesis, not evidence; the reader should seek external evidence (sentence 6: he decides to search) before concluding. Ties to A3 (evidence-based inference). (1.5 marks)

Question 4 (5 marks)

- Marking:
  - 1 mark: Claim stated clearly.
  - 2 marks: Warrant logically connects claim to reasons (1 mark per strong point).
  - 2 marks: Backing includes two items (one from Passage A with sentence number and one Core Axiom) and explains how they support the warrant.

- Model answer:
  - Claim: A sequence graphic organizer would help Sam understand what to search for next. (1 mark)
  - Warrant: A sequence organizer clarifies order (observe -> recall story -> form plan) and reduces working-memory demands while comparing steps. (2 marks; tie to A2)
  - Backing: (1) Passage A sentences 1–6 show the sequence of observation (1–2), recall (4), inference (5), decision (6). (1 mark) (2) Axiom A2: supports reduce working-memory load,

allowing focus on inference and decision. (1 mark)

Question 5 (4 marks)

- Marking:
  - 1 mark for each identified flaw (2 total).
  - 1 mark each for corrected reasoning with axioms tied (2 total).

- Model answer:
  - Flaw 1: "Understanding every word" ignores background knowledge and strategic monitoring; comprehension requires more than vocabulary. (1 mark)
  - Correction 1: Combine vocabulary instruction with teacher modeling of strategy (A1). (1 mark)
  - Flaw 2: "Just give definitions" ignores cognitive load and context; definitions alone may not integrate into text meaning. (1 mark)
  - Correction 2: Teach definitions within context and practice with organizers that reduce memory load (A2, A3). (1 mark)

Question 6 (7 marks)

- Marking:
  - 5 marks for a correct 5-step (or more) logical derivation with axioms cited (1 mark per valid step).
  - 2 marks for a concrete implementation example that follows logically from steps.

- Model derivation:
  1. Premise: Jada has working-memory difficulty, so multi-sentence info is easily lost. (A2) (1 mark)
  2. Reducing cognitive load (chunking + visual cues) frees working memory for comprehension monitoring. (A2) (1 mark)
  3. A visual/graphic scaffold that shows one chunk at a time reduces the amount to hold in memory. (A1/A2) (1 mark)
  4. Explicit instruction on using the scaffold (teacher models how to extract main idea from each chunk) ensures effective use. (A3) (1 mark)
  5. Therefore, implement "one-paragraph-at-a-time" with a short checklist (main idea, two details, inference) and teacher modeling. (A2/A3) (1 mark)

  - Implementation example (2 marks): During reading of Passage B, the teacher presents sentences 1–3 on a chart, models extracting main idea and two details, students complete the checklist; then teacher presents sentences 4–6 and repeats.

Question 7 (3 marks)

- Marking: 1.5 marks per bias/limitation plus effect statement (0.75 + 0.75 per item).
- Model answer:
  - Limitation 1: Passage A is from Sam's perspective and centers his excitement, which may bias readers toward believing the coin story; this may lead to supports focused on confirming inferences rather than testing alternatives (ties to A4). (1.5 marks)
  - Limitation 2: The text lacks concrete sensory evidence (no clear physical description of the object), limiting diagnostic clues teachers can use to scaffold evidence-based inference (affects choice of supports that require more explicit observational instruction). (1.5 marks)

Question 8 (4 marks)

- Marking:
  - 2 marks: Correct evidence log listing Weeks 1–4 with percentages and short notes.
  - 2 marks: Correct conclusion and link to A3.

- Model answer:
  - Evidence log:
    - Week 1: 52% — baseline, no supports.
    - Week 2: 60% — preview vocabulary introduced.
    - Week 3: 72% — graphic organizer added.
    - Week 4: 75% — question stems taught. (2 marks)

  - Conclusion: Graphic organizers (Week 3) coincided with the largest week-to-week gain (+12 percentage points), supporting the claim that organizers led to the largest measurable improvement (tie to A3). Note: Must consider cumulative effects of prior supports. (2 marks)

Question 9 (9 marks)

- Marking:
  - 5 marks: At least five correct numbered logic steps using A1/A2 with passage citations.
  - 2 marks: Correct explanation of how chunking aids inference (link to working memory).
  - 2 marks: One measurable outcome with data specification.

- Model proof:
  1. Premise: Passage A contains multiple events and an inference candidate about a coin (sentences 1–6). (A1) (1 mark)

2. Working memory is limited; reading all six sentences at once increases load and reduces capacity for inference. (A2) (1 mark)
3. Chunking into sentences 1–3 (observation/description) and 4–6 (memory/inference/decision) isolates related information so the reader can process each unit fully. (A2) (1 mark)
4. Stepwise processing lets the reader form an accurate mental model: chunk 1 builds the scene (sentences 1–3), chunk 2 introduces the story and decision (sentences 4–6) — reducing interference between observation and prior story memory. (A1/A2) (1 mark)
5. This separation supports a correct inference about whether the light could be a coin because students can compare observed features (sentence 2) with story details (sentence 4) without overloading memory. (A1/A2) (1 mark)

- Explanation: Chunking reduces cognitive load and allows strategic monitoring (e.g., asking "What do I know about the object?" after chunk 1), supporting better inferencing. (2 marks)
- Measurable outcome: Collect pre/post checks: percent of students who correctly justify an inference about the light with two textual supports, measured immediately after chunked instruction and compared to a control group or prior baseline. (2 marks)

Question 10 (3 marks)

- Marking: 1 mark per criterion with DOK label and 0.33–0.5 mark for justification.
- Model answers:
  1. Criterion: Student can state the main idea in one sentence with two supporting details (DOK 2 — skills & concepts). Justification: requires summarizing and locating details. (1 mark)
  2. Criterion: Student can make one inference and cite two sentence numbers as evidence (DOK 3 — strategic thinking). Justification: requires reasoning beyond literal text. (1 mark)
  3. Criterion: Student can explain how a support (e.g., graphic organizer) helped their thinking using evidence from their work (DOK 3). Justification: requires metacognitive explanation and evidence link. (1 mark)

Question 11 (4 marks)

- Marking:
  - 1 mark per flaw (2 total).
  - 2 marks for corrected combined plan: two sentences and reasoning tied to A3.

- Model answer:
  - Flaw for Teacher A: Vocabulary quizzes alone test recall but do not teach application in context. (1 mark)
  - Flaw for Teacher B: Silent independent reading without supports gives no scaffolding for students who need explicit strategy instruction. (1 mark)
  - Corrected combined plan (2 sentences): Introduce short, context-based vocabulary previews

(3 times/week) and pair them with a guided reading block where teachers model question stems and use a graphic organizer; then assign short independent reading with prompts relevant to the organizer. This addresses retention and transfer and follows A3 by teaching and measuring application. (2 marks)

Question 12 (7 marks)

- Marking:
  - 4–6 logical derivation steps with axioms cited (4 marks: 1 mark per correct step up to 4; extra step quality adds remaining marks).
  - 3 marks for a 2–3 sentence classroom script modeling a think-aloud including sentence citation.

- Model derivation:
  1. Premise: Miguel initially defines "germinate" as "to become green" (Passage B sentence 4), which is an incomplete conceptual definition. (A1) (1 mark)
  2. Accurate inference requires both vocabulary and background—so correct concept teaching is needed. (A1) (1 mark)
  3. Teaching a scaffold that asks students to identify the word, provide a student definition, and then compare to an accurate definition supports conceptual change. (A3) (1 mark)
  4. Modeling (teacher think-aloud) and immediate feedback helps students update their definitions and create accurate inferences about growth. (A3/A2) (1 mark)
  5. Therefore, teach the scaffold: (a) identify word in sentence 3, (b) state initial meaning (student), (c) read teacher definition, (d) generate a sentence using the correct meaning. (A3/A1) (1 mark)

  - Classroom script (3 marks):
    - Teacher: "I see the word 'germinate' in sentence 3. I think Miguel says it means 'to become green,' but the teacher then explains it's 'start to grow from a seed' (sentence 4). That means when a seed germinates, it begins to grow. So I will change my idea: germinate = start to grow." (Script uses sentence 3–4 and models updating idea; awards full marks if script references Passage B.)

Question 13 (4 marks)

- Marking:
  - 1 mark for claim, 1 mark for two warrants (0.5 each?), 2 marks for backing items (one from Passage B with citation and one from mini-data) and one-sentence conclusion.

- Model mini-map:

- Claim: Explicit vocabulary instruction (continuing) should be continued. (1 mark)
- Warrants: (1) Correct word meanings directly improve comprehension. (0.5 mark) (2) Students can apply words to observations using charts, reinforcing learning. (0.5 mark)
- Backing: Passage B sentence 4 shows a student revised definition after teacher input; mini-data Weeks 1–4 shows gains when previews and organizers were added (week 2->3 jump). (2 marks)
- Conclusion: Continue explicit vocabulary instruction paired with visual tracking (charts) to reinforce correct conceptual meanings. (0 marks extra; included)

Question 14 (3 marks)

- Marking:
  - Up to 3 criteria listed; 1 mark each for criterion + DOK + evidence link (concise).

- Model answers based on Q12:
  1. Criterion: Students can update a mistaken definition using text evidence (DOK 3) — meets because script models correction using sentence 4. (1 mark)
  2. Criterion: Students can use the new definition in a sentence explaining growth (DOK 2) — meets because scaffold step d asks for a sentence using the new meaning. (1 mark)
  3. Criterion: Student shows transfer by documenting observation in chart (DOK 3) — meets if applied during weekly tracking (Passage B sentence 5–6). (1 mark)

Question 15 (10 marks)

- Marking rubric (10 total):
  - 3 marks: Specific supports named (≤3) with weeks of introduction and rationale tied to axioms (1 mark per support up to 3).
  - 2 marks: Two measurable progress indicators (what to measure & when) with expected targets (2 marks).
  - 2 marks: Evidence log template (columns) and explanation of weekly collection (2 marks).
  - 1 mark: Bias audit (two sentences) — identifies limitation and monitoring plan (1 mark).
  - 2 marks: Step-by-step numbered defense linked to axioms and citing at least one passage or data point (2 marks).

- Model comprehensive answer (sample):
  - Supports and schedule (3 marks):
    1. Week 1–2: Preview vocabulary (2×/week) + explicit definitions and context sentences (Rationale: A1 & A3; mini-data Week 2 showed gain after preview). (1 mark)
    2. Week 3–4: Add graphic organizers (sequence/event-detail-inference) during guided reading (Rationale: A2; mini-data Week 3 coincides with +12% gain). (1 mark)
    3. Week 5–6: Teach and practice question stems and metacognitive checks, plus transfer to

independent practice (Rationale: A3). (1 mark)

- Two measurable progress indicators (2 marks):
  1. Weekly percent correct on 5-question comprehension checks (measure weekly; target: 10% gain by week 3, 20% by week 6). (1 mark)
  2. Weekly inference justification score: 0–3 rubric for citing 2 textual supports and correct reasoning (target: average ≥2 by week 6). (1 mark)

- Evidence log template (2 marks):
  - Columns: Week # | Support(s) introduced | Comprehension % | Inference rubric score (avg) | Notes on fidelity | Student quote/evidence (sentence #). Collect each Friday. Explanation: This links supports to outcomes per A4. (2 marks)

- Bias audit (1 mark):
  - Limitation: Gains may reflect combined effects of supports and not isolate individual effects; small-class variation may skew averages. Monitor by noting fidelity and using short probes that isolate vocabulary vs organizer effects (weekly notes column). (1 mark)

- Numbered defense (2 marks):
  1. Baseline 52% shows need for targeted supports (A3). (Cites mini-data Week 1.) (1 mark)
  2. Implementing vocabulary first reduces unknown words and prepares students to use organizers; data shows week-to-week improvement when vocab was introduced before organizers (Week 2->3 pattern), so sequence is evidence-consistent (A2/A3). (1 mark)

End of answer key.