

Tool to Evaluate Language Complexity of Test Items

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Tool to Evaluate Language Complexity of Test Items

H. Gary Cook and Rita MacDonald

This working paper describes a language complexity rubric and provides a description and sample rating materials for that rubric. Together these items comprise a method, or tool, for evaluating the language complexity of academic content achievement test items. This tool’s aim is to inform educators, test developers, and test reviewers of the language demands required of students to respond to content assessment items. The purpose of this tool is to better understand how students with different English language proficiency levels perform on assessment items and tests with varying levels of language complexity. Figure 1 shows a graphic description of the tool and its elements.

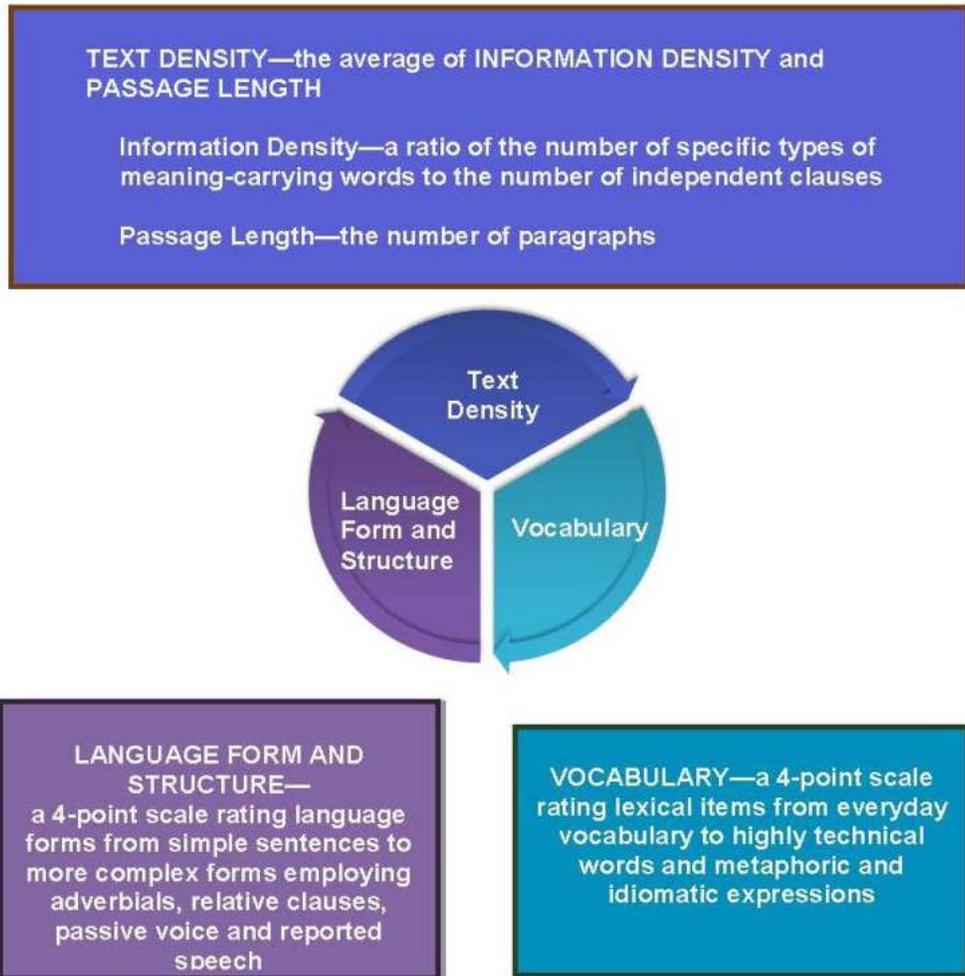


Figure 1. Language Complexity Rubric

Language Complexity Tool

This language complexity tool evaluates three areas: text density, language form and structure, and vocabulary. Research has informed the selection of these areas, especially as they affect English language learners. Other aspects of language also affect what makes tasks, activities, or interactions difficult for English language learners, but these are not addressed by this tool. For example, understanding how a particular interaction should occur in a particular sociocultural context can be extremely complicated. Using an informal register to write a narrative in a literature class would be totally appropriate, but the use of an informal register to write a lab report for a science class would not be.

Additional features of language like sociocultural context and the use of language in different power structures and relationships have not been included in this tool because 1) substantial training would be required to appropriately identify specific features of these areas, 2) there is still professional debate about the significant components within these areas, and 3) in some cases there may be many ways to appropriately interact depending on the situation, context, interlocutors, and desired outcome.

What follows are brief descriptions of research associated with each of the evaluated areas.

Language Complexity Tool Research Background

Text Density

Text density is the average of the scores of two discrete elements: information density and passage length.

Information density measures how tightly a text packs important information into clauses, based on the notions that the clause, as the central processing unit in grammar, constitutes an information unit, and that the greater the number of meaning-carrying words per clause, the greater the “processing load” of that clause for the reader or listener. The formula used here is an adaptation of the Lexical Density (LD) formula used in systemic functional linguistics (SFL), whereby the number of lexical items in a passage (all nouns, all main verbs except the verb “to be,” all adjectives, and only critical adverbs) is tallied and divided by the number of nonembedded (independent and dependent) clauses. The SFL calculation of LD was first described by Michael Halliday in 1994, and is used by SFL practitioners to analyze a text’s difficulty level.

The more highly structured nature of school-based texts contributes to their lexical density. Through lexical density, academic registers pack more information into each clause, making it possible to build up the information in a text efficiently. (Schleppegrell, 2004, p. 67)

...in everyday spoken language, there are two to three content-carrying words per clause, but in written language, there are four to six. In science, the number can go up much

Language Complexity Tool

higher, often exceeding ten.... Such a high density of information can create cognitive overload for students and slow down their processing of a text. (Fang, Lamme, & Pringle, 2011, p. 28)

To reduce the level of linguistic analysis required by the rater, the formula used here for Informational Density is simplified by dividing simply by the number of independent clauses and by the elimination of adverbs from the count of lexical items.

Passage length has been included to capture the difficulty noted above by Fang, Lamme, and Pringle (2011). The greater the number of passages in general, the greater the processing load for the reader.

Language Form and Structure

Language form and structure is rated along a continuum of increasing difficulty, anchored at the low end by the prototypical language structures of everyday conversation, and progressing to include a high proportion of more syntactically complex structures, such as embedded relative clauses, passive voice, and adverbial phrases. As suggested by Pienemann's (2008) theory of second language development, language is processed in hierarchical fashion, with simpler structures requiring less cognitive processing than more complex structures. The increased number of complicated syntactic structures in academic texts is recognized as a source of comprehension problems for students.

...scientific language employs complex sentences with hierarchical structure using both subordinate clauses and embedded clauses. ...comprehension problems can arise when a sentence comprises multiple clauses where layers of semantic links and dependency relationships take time for students to sort through. (Fang, Lamme, & Pringle, 2011, p. 71).

Vocabulary

Vocabulary has been widely acknowledged as a critical element of academic language, and one that can be categorized for pedagogical purposes.

...academic vocabulary, as one component of the broader academic language construct, comprises both a general academic lexicon...and specialized ones. (Bailey, 2007, p. 12)

The importance of vocabulary knowledge to college readiness is underscored by Nation's analysis of academic language at the college level (Nation, 2001), which found that approximately 9% of college text is comprised of general academic vocabulary, and an additional 5% is comprised of specialized or technical vocabulary. McLaughlin, August, and Snow (2000) reported that 60–70% of English words carry multiple meanings, determined in relation to context, thus emphasizing the importance of the acquisition of multiple and specialized meanings for a significant portion of the English lexicon.

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Our rating of vocabulary complexity is based on the frequency with which a reader is thought to encounter the specific meanings of the words in the passage, anchored at the low end by words encountered on a frequent, almost daily basis and progressing to specialized or technical words which are encountered far less frequently, along with polysemous words whose particular meanings are encountered infrequently. The high end of the ratings scale also includes metaphoric meanings such as those encountered in poetry or satire.

Description of the Rubric

Table 1 shows the language complexity rubric.

Table 1 *Language Complexity Rubric*

		Descriptors			
		1	2	3	4
TEXT DENSITY	Information Density	An average of one to three verbs, nouns or adjectives per sentence	An average of four to six verbs, nouns or adjectives per sentence	An average of seven to ten verbs, nouns or adjectives per sentence	An average of greater than 10 verbs, nouns or adjectives per sentence
	Passage Length	One to three paragraphs	Four to six paragraphs	Six to ten paragraphs	More than ten paragraphs
LANGUAGE FORM AND STRUCTURE	Language Forms	Simple sentences and simple grammatical forms	A few sentences and/or grammatical forms that are more sophisticated (e.g., compound S, prepositional phrases)	An even mix of sophisticated and simple sentences or grammatical forms	Over half of the passage consists of more complex sentences and/or grammatical forms (e.g., relative clauses, adverbials, passive voice, reported speech)
	Vocabulary	All high frequency, commonly used vocabulary	Few content-specific, metaphoric, uncommon meaning, or idiomatic words	A number of content-specific, technical, metaphoric, uncommon meaning and/or idiomatic words or expressions	A large number of content-specific, technical, metaphoric, uncommon meaning or idiomatic words or expressions

Language Complexity Tool

The language complexity rubric rates three areas of language: text density, language form and structure, and vocabulary.

Text Density

Text density¹ refers to how difficult text is to understand. The rubric rates two areas: information density and passage length.

Information density. Information density is simply the average number of nouns, adjectives, and verbs in a sentence. Every independent clause is considered a sentence. Here is an example passage to clarify how sentences (i.e., independent clauses), nouns, adjectives, and verbs are counted.

EXAMPLE 1: Language from a fourth grade reading passage²

The whistle blows,// and I hit him fast with a fireman's carry. // He's on his back in three seconds.// The ref's hand slaps the mat.// Pinned.// One match down.

David M. Simon's *Tough as Daisy*

The underlined words identify the nouns, adjectives and verbs to be counted and the double slashes represent clausal breaks. Notice that the verb “to be” in the third independent clause (“He’s on...””) is not counted; no form of the verb “to be” is counted when measuring text density. Helping verbs (e.g., will, may, could, should) are not counted either. The first sentence has two independent clauses: *the whistle blows* and *I hit him fast with a fireman’s carry*. Accordingly, it is counted as two sentences. Notice also that there are two sentence fragments: *Pinned*. *One match down*. These fragments could be rewritten *He was pinned*, and *One match was down*. The dialogue makes clear that this is what was meant; thus, these incomplete sentences are counted as complete sentences. In total there are 15 selected words. There are a total of six clauses or an average of 2.5 nouns, adjectives, and verbs per sentence (clause). Using the rubric on the previous page the information density of this passage would be a 1.

Is it necessary to rate an entire passage? What if the passage is several pages long? Since introductory paragraphs sometimes differ in purpose and linguistic characteristics from those in the body of the text, we suggest take two paragraphs in the middle of a passage and rate the information density there. If a passage is three or four paragraphs, the middle or last two paragraphs should be rated. Shorter passages should have all paragraphs rated. (Language Structures and Vocabulary should be assessed across the entire passage.)

¹ Note that the term *text* does not just mean written text. It could also refer to spoken language as well. The discussion here focuses only on written text; however, it should be understood that the rubric could be for oral language as well.

² This reading passage was taken from a released 4th grade reading NAEP item.

Language Complexity Tool

Passage length. Passage length is simply the number of paragraphs in a reading passage, item stimulus, or acceptable student response. This is generally straightforward, but it may require judgment in some areas. For example, here are two released National Assessment for Educational Progress (NAEP) mathematics items.

4th grade, multiple-choice mathematics item characterized as “easy.”

7. Patty expects that each tomato plant in her garden will bear 24 tomatoes. If there are 6 tomato plants in her garden, how many tomatoes does she expect?

- A. 4
- B. 18
- C. 30
- D. 144

Did you use the calculator on this question?

8th grade, constructed response mathematics item characterized as “hard.”

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.

What is the probability that Leroy will be able to purchase a 30-cent candy bar with the two coins in his left pocket?

Using the coins, explain your reasoning.

Using the rubric’s passage length descriptors, how might these items be rated? One paragraph? Two paragraphs? Three paragraphs? Qualified and experienced English teachers might give different answers to this. For rating purposes, assume that a paragraph is the expression of a complete idea (a common definition of a paragraph). As a rule all elements of a test item (the stimulus, the correct response, and the distractors) are considered part of the item stem. The item stem itself is an idea or paragraph. Consider statements like *Did you use a calculator on this question?* or *Using the coins, explain your reasoning* as part of the previous paragraph and not as separate paragraphs. With these rules, the fourth grade mathematics item would be one paragraph, and the eighth grade passage would be two paragraphs. Both of these items would be rated a 1 on the passage length section of the language complexity rubric.

Language Form and Structure

How do you rate the complexity of the language forms (grammar)? The goal is to identify the general pattern of language forms across the entire passage. Let us examine a reading passage by Margery Facklam and determine the complexity of language forms. This passage was used as a stimulus for a NAEP fourth grade test item. Note that sentence numbers were added for explanatory purposes.

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(1) “What do bees do?” (2) Ask most people and they will say, “Bees make honey and they sting.” (3) They may even tell you that bees are fuzzy, black-and-yellow insects that live in hives. (4) But there are lots of kinds of bees, and they’re not all the same. (5) Some fly at night. (6) Some can’t sting. (7) Some live only a few months, and others live several years. (8) Every species of bee has its own story. (9) A species is one of the groups used by scientists to classify, or group, living things. (10) Animals of the same species can mate with each other. (11) And they give birth to young that can mate and give birth, or reproduce.

Declarative, interrogative, imperative or exclamatory sentences that just have a subject (if needed), verb and object with basic verb tenses are classified as simple sentences. In the passage above, the first, fifth, sixth, eighth, and tenth sentences are simple sentences.

- (1) “What do bees do?”
- (5) Some fly at night.
- (6) Some can’t sting.
- (8) Every species of bee has its own story.
- (10) Animals of the same species can mate with each other.

This passage has several compound sentences: the second, fourth, and seventh sentences:

- (2) Ask most people and they will say, “Bees make honey and they sting.”
- (4) But there are lots of kinds of bees, and they’re not all the same.
- (7) Some live only a few months, and others live several years.

It also has several sentences with relative clauses: the third, ninth, and eleventh sentences.

- (3) They may even tell you that bees are fuzzy, black-and-yellow insects that live in hives.
- (9) A species is one of the groups used by scientists to classify, or group, living things.
- (11) And they give birth to young that can mate and give birth, or reproduce.

The passage also includes more complex grammatical forms; see the ninth sentence, which has a reduced relative clause and is in the passive voice. This passage has a mix of sentence forms and would be rated a 3 in the language structure section of the language complexity rubric. The intent of this element in the rubric is not to classify every sentence but to get a general sense of the complexity of grammatical forms and sentences across a passage.

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Vocabulary

The vocabulary section of the rubric identifies the type of vocabulary found in a reading passage, using the entire passage. That vocabulary could be everyday common words (e.g., walk, run, house), content-specific words (chart, graph, appendix), or specific technical vocabulary (secant, atom, simile). Complex vocabulary is not always related to technical terms. The way an author uses common words in uncommon ways or turns phrases can also be quite complex. Here is a quote from E.B. White.

“I have a lot of the cat in me and cats are not joiners.”

The word *cat* is a common vocabulary word, but White uses it metaphorically to indicate his solitary, independent nature.

Scoring an Item with the Rubric

For scoring, an average of the information density (id) and passage length (pl) make up the text density score (TD). The sum of the text density (TD), language form and structure (LS) and vocabulary (V) sections make up the language complexity (LangCmplx) rating.

Sample Rating Materials

In the Appendix are sample test items and passages taken from the NAEP website³ for reading, writing, and mathematics. Use these as examples to practice scoring using the rubric. Three test item formats are provided: multiple-choice, short constructed response, and extended constructed response. In total four items are used as examples:

- 4th grade, short constructed response reading item
- 12th grade, extended constructed response writing item
- 4th grade multiple-choice mathematics item, and
- 8th grade extended constructed response mathematics item.

The 4th grade multiple choice math item consists only of the test item; if a multiple-choice test item has an associated passage both the test item and the passage are rated.

For constructed response items, the item stem, passage (if applicable), and acceptable student responses are rated. For rating purposes, a correct or sufficient answer is an **acceptable rating** student response in mathematics, **full comprehension rating** in reading, and **sufficient rating** in writing.

Table A-1 provides suggested language complexity ratings for the four example items.

³ <http://nces.ed.gov/nationsreportcard/itmrlsx/landing.aspx>

Language Complexity Tool

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**I'm the only girl at
the sign-up desk.**

Tough as Daisy

by David M. Simon

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The sign on the YMCA door says
Wrestling Tournament Today.

I enter the gym and take a deep breath. It smells like old sweat socks and the stuff they use to wash wrestling mats.

I love that smell. Weird, huh? Not to me.

I was raised around wrestling. My older brothers wrestle for the high-school team. My dad wrestled in college. So it was natural for me to want to wrestle. Except for one thing.

I'm a girl. I even have a girly name—
Daisy.

My dad always says, "Pound for pound, no one's as tough as Daisy."

I see my family in the stands. I wave to them and smile, but I'm nervous.

Lots of boys are already on the mats, loosening up. I'm the only girl at the sign-up desk. Some of the boys point at me and laugh. We'll see about that.

Back in Ohio, people got used to seeing me wrestle. I kept showing up. I kept winning. They stopped pointing and started cheering.

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Then we moved to California. Now I'm weird again.

The man says, "Name?"

"Daisy McGill."

"Have you wrestled before, honey?"

He didn't call any of the boys *honey*. "Yes, sir," I answer through clenched teeth. I hand him my registration form.

"OK," he says. "Climb on the scale." I weigh 70 pounds. He writes a number on the back of my hand. I head to the girls' locker

The whistle blows. I shoot for his leg. He kicks back and snaps my head down. He spins around behind me and takes me down. Good. I love a challenge.

Final period of this match, and I'm down three to nothing. Time to make my move.

I escape for one point, then shoot a quick takedown. All tied up. Thirty seconds to go. He raises one leg and I take a chance. I reach around his head and knee. My hands close tight. I roll him onto his back.

The whistle blows. The ref holds up two

room to change.

First match. The kid looks strong. That's OK. Boys with muscles always underestimate me.

I snap the chin strap on my headgear. The ref calls us to the middle of the mat. We shake hands. The kid says, "I can't believe I have to wrestle a girl."

The whistle blows, and I hit him fast with a fireman's carry. He's on his back in three seconds. The ref's hand slaps the mat. Pinned. One match down.

The kid refuses to shake my hand. The ref raises my right arm. He tells me, "Beautiful takedown!"

There's a lot of whispering going on. I hear someone say, "Man, she pinned him fast. No girl is going to beat me."

My family cheers wildly. I feel good. It always takes one match for the butterflies in my stomach to settle.

They call my number for the next match.

People crowd around the mat to get a look at Bizarro Wrestler Girl. Sounds like a good name for a superhero!

This kid is tall and thin. He looks serious about winning.

fingers. I win by two points. Two matches down.

At least this kid shakes my hand. Some of the people watching even clap for me.

I'm in the finals for my weight class.

My brothers rub my arms and joke around with me. Dad says, "Just do your best, honey." It's OK when *he* calls me *honey*.

I head for the mat. The next kid I'm wrestling pinned both of his opponents. There's a huge crowd watching us. I can't tell if they want me to win or lose.

Doesn't matter to me.

We shake hands. "You're pretty good," he says. "Good luck."

"You, too," I say.

The whistle blows. He shoots, and I'm on my knees before I can blink. Wow, he's fast. I feel my heart hammering in my chest. Easy, Daisy.

I spin away. Escape. He misses an arm-drag, and I catch him flat-footed. Takedown.

After two periods we're all tied up.

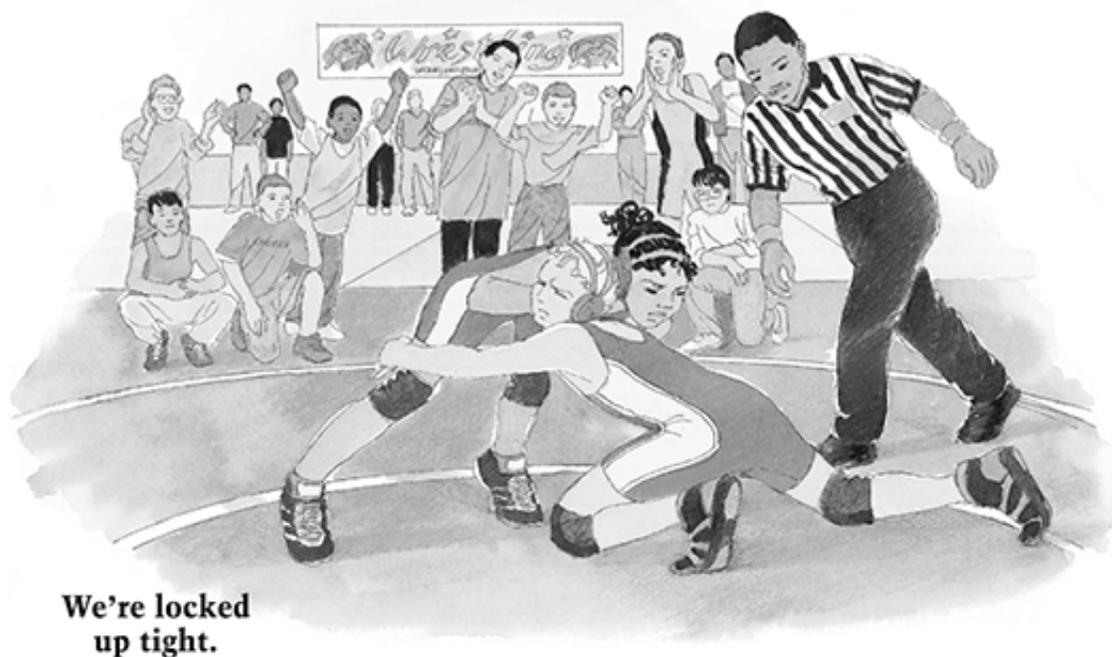
We're both gulping for breath as the last period starts. My brothers are screaming, but they sound far away. The kid shoots for my legs. I flatten out. He has one leg hooked. I force my forearm across his face like a wedge. We're locked up tight.

I can see the clock ticking down. With ten seconds left, his arms relax. Just what I was waiting for. I push down and spin behind him for the win. Yes!

I hear cheering and realize it's for me. The kid says, "Nice match. But next time, I'm going to win." He just might.

My dad wraps my sweaty body in a big bear hug. He says, "Pound for pound, no one's as tough as Daisy."

I guess today he's right.



**We're locked
up tight.**

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10. How is the first boy Daisy wrestles different from the last boy she wrestles? Support your answer with information from the story.

Score & Description

Full Comprehension

Responses at this level explain how the first boy Daisy wrestles is different from the last boy and support the answer with information from the story.

- *The first boy was mean and didn't encourage her. The last boy told her "nice match" and actually shook her hand.*
- *The first boy was pinned to the ground in 3 seconds. The second boy was very tough and very persistent.*
- *The first one said I can't believe I have to face a girl and the other one said nice match but next time I will win.*

Partial Comprehension

Responses at this level explain how the first boy Daisy wrestles is different from the last boy but make a general comparison and do not support the answer with information from the story. Some responses give a description of one boy but do not make a comparison.

- *The first one was easy but the second one was very tough.*
- *The first boy Daisy wrestles was serious and the last boy she wrestled was kind and not mean.*

Little or No Comprehension

Responses at this level provide an incorrect interpretation of the characters in the story or provide information only about Daisy. Or, they may simply repeat the question.

- *The first one is not very sure about wrestling her because he thinks he is going to hurt her but the second one thinks he is going to win.*
- *Daisy is strong.*

Full Comprehension - Student Response

10. How is the first boy Daisy wrestles different from the last boy she wrestles? Support your answer with information from the story.

He didn't want to wrestle a girl and thought it was going to be easy. The last guy was up for it and wanted to fight her.

10. How is the first boy Daisy wrestles different from the last boy she wrestles? Support your answer with information from the story.

The first boy was pinned right after the whistle blew. The first boy also did not shake her hand. The last boy really fought and did shake her hand at the end of the match.

Scorer Comments:

Both responses explain how the first boy Daisy wrestles is different from the last boy and give details from the story as support. The first response compares the boys' attitudes; the second response discusses the different pace of the matches and the boys' sportsmanship.

Partial Comprehension - Student Response

10. How is the first boy Daisy wrestles different from the last boy she wrestles? Support your answer with information from the story.

The first boy Daisy wrestled was easy for her and the last boy was hard.

10. How is the first boy Daisy wrestles different from the last boy she wrestles? Support your answer with

information from the story.

The boy she first wrestled
after she had won he
would not shake her
hand, because he was
mad that he got
beat by a girl.

Scorer Comments:

The first response explains how the first boy Daisy wrestles is different from the last boy but the comparison is general. The second response describes the match with the first boy but does not compare him to the last boy.

Little or No Comprehension - Student Response

10. How is the first boy Daisy wrestles different from the last boy she wrestles? Support your answer with information from the story.

she is a girl and the
boy is a he.

10. How is the first boy Daisy wrestles different from the last boy she wrestles? Support your answer with information from the story.

she feel like she is in ohio
for wrestling with her
father for training. The
others are weaker than her.

Scorer Comments:

Neither response answers the question. The first response compares Daisy to one of the boys instead of

comparing the two boys. The second response provides irrelevant information about Daisy in Ohio.

1. A tall tale is a type of story that uses exaggeration to solve a real-life problem. As the story progresses, the main character demonstrates superhuman abilities to overcome ordinary obstacles. The story shown below is an example of a tall tale.

A Flood and Drought Tale

It had been raining without a break for four days. The roads were flooded, power outages were common, and dry basements had become a thing of the past. At the same time, a drought on the other side of the country was responsible for dangerously low reservoir levels, thirsty cattle, and parched fields.

Victor, a young man who lived in one of the flooded towns, was very unhappy about the continuing bad weather. Not only had he spent the last two days bailing water from his family's basement, but he was due to miss out on a camping trip, originally planned for the upcoming weekend, that he and his friends had been excitedly anticipating.

Victor put a small rope in his back pocket and walked outside. As he stood with the rain pelting down on him, he grew until he stood a mile high. Standing up above the rain clouds, he took the rope from his back pocket. The rope was now hundreds of yards long and Victor used it to lasso the rain clouds. Holding the clouds in the rope, he walked across the country taking fifty-mile steps. He untied the clouds over the drought-stricken land and a heavy rain began to fall there. Then he walked back to his house in his town where the sun was now shining, shrunk back down to his regular size, and went inside to pack for the camping trip.

Imagine that you will participate in a "tall-tale writing contest" at your school. Write your own tall tale. You can write about yourself, someone you know, or someone you imagine. Be sure to give your main character whatever superhuman abilities are necessary to save the day.

Score & Description

Excellent

- Tells a clear story that is consistently well-developed and detailed; details enhance story being told.
- Well organized; integrates narrative events into a smooth telling; effective transitions move the story forward.
- Consistently exhibits variety in sentence structure and precision in word choice.
- Errors in grammar, spelling, and punctuation are few and do not interfere with understanding.

Skillful

- Tells a clear story that is well-developed and supported with pertinent details in much of the response.
- Well organized with story elements that are connected across most of the response; may have occasional lapses in transitions.
- Exhibits some variety in sentence structure and uses good word choice; occasionally, words may be used inaccurately.
- Errors in grammar, spelling, and punctuation do not interfere with understanding.

Sufficient

- Tells a clear story that is developed with some pertinent details.
- Generally organized, but transitions among parts of the story may be lacking.
- Sentence structure may be simple and unvaried; word choice is mostly accurate.
- Errors in grammar, spelling, and punctuation do not interfere with understanding.

Uneven

May be characterized by one or more of the following:

- Tells a story that may be clear and developed in parts; other parts are unfocused, repetitive, or minimally developed OR is no more than a well-written beginning.
- Organized in parts of the response; other parts are disjointed and/or lack transitions.
- Exhibits uneven control over sentence boundaries and sentence structure; may exhibit some inaccurate word choices.
- Errors in grammar, spelling, and punctuation sometimes interfere with understanding.

Insufficient

May be characterized by one or more of the following:

- Attempts to tell a story, but is very undeveloped, list-like, or fragmentary.
- Disorganized or unfocused in much of the response OR the response is too brief to detect organization.
- Minimal control over sentence boundaries and sentence structure; word choice may often be inaccurate.

- Errors in grammar, spelling, and punctuation interfere with understanding in much of the response.

Unsatisfactory

May be characterized by one or more of the following:

- Responds to prompt but provides little or no coherent content OR merely paraphrases the prompt.
- Little or no apparent organization.
- Minimal or no control over sentence boundaries and sentence structure; word choice may be inaccurate in much or all of the response.
- Errors in grammar, spelling, and punctuation severely impede understanding across the response.

Excellent - Student Response

1. A tall tale is a type of story that uses exaggeration to solve a real-life problem. As the story progresses, the main character demonstrates superhuman abilities to overcome ordinary obstacles. The story shown below is an example of a tall tale.

A Flood and Drought Tale

It had been raining without a break for four days. The roads were flooded, power outages were common, and dry basements had become a thing of the past. At the same time, a drought on the other side of the country was responsible for dangerously low reservoir levels, thirsty cattle, and parched fields.

Victor, a young man who lived in one of the flooded towns, was very unhappy about the continuing bad weather. Not only had he spent the last two days bailing water from his family's basement, but he was due to miss out on a camping trip, originally planned for the upcoming weekend, that he and his friends had been excitedly anticipating.

Victor put a small rope in his back pocket and walked outside. As he stood with the rain pelting down on him, he grew until he stood a mile high. Standing up above the rain clouds, he took the rope from his back pocket. The rope was now hundreds of yards long and Victor used it to lasso the rain clouds. Holding the clouds in the rope, he walked across the country taking fifty-mile steps. He untied the clouds over the drought-stricken land and a heavy rain began to fall there. Then he walked back to his house in his town where the sun was now shining, shrunk back down to his regular size, and went inside to pack for the camping trip.

Imagine that you will participate in a "tall-tale writing contest" at your school. Write your own tall tale. You can write about yourself, someone you know, or someone you imagine. Be sure to give your main character whatever superhuman abilities are necessary to save the day.

Ms. Smith was not your typical teacher. She was mean and cold-hearted to her students, giving them one day to complete 10-page assignments. She did not care if her students did well in her class or not, for she was too occupied with finding more work to give to her students.

All of Ms. Smith's students were hopelessly discouraged when, on Tuesday, she assigned them a 15-page essay to complete and turn in the next day. All but Maury. Fortunately for Maury, he was an extremely clever kid who thought he could do anything. He had

an idea to how he could pull off his essay in the little time he was given.

That evening, Maury slaved away at his essay with renewed energy, his hopes of his brilliant plan working. When the sun set, Maury was not even half finished his paper. He worked all through the night, writing, thinking, researching, more writing, and when the kitchen clock read "quarter past six", he knew his plan needed to start.

So, with fingers crossed, Maury took his beloved slingshot outside to the driveway, where he then gathered a few rocks. Aiming carefully at the rising sun, he took a shot. "Ping!" Maury cried out with glee as he watched the sun, which he just hit with great precision, fall back below the horizon. Hurrying back inside to finish his essay, Maury was satisfied with his success to gain a few more precious hours to work, giving the title "all-nighter" a new meaning.

Scorer Comments:

"Excellent" responses consistently used well-chosen details and integrated narrative elements into a smooth telling. This sample response tells a compact, smooth story with very effective details, consistent variety in sentence structure, and good word choices that develop Maury's character: ("Ping!" Maury cried out with glee...").

Skillful - Student Response

1. A tall tale is a type of story that uses exaggeration to solve a real-life problem. As the story progresses, the main character demonstrates superhuman abilities to overcome ordinary obstacles. The story shown below is an example of a tall tale.

A Flood and Drought Tale

It had been raining without a break for four days. The roads were flooded, power outages were

common, and dry basements had become a thing of the past. At the same time, a drought on the other side of the country was responsible for dangerously low reservoir levels, thirsty cattle, and parched fields.

Victor, a young man who lived in one of the flooded towns, was very unhappy about the continuing bad weather. Not only had he spent the last two days bailing water from his family's basement, but he was due to miss out on a camping trip, originally planned for the upcoming weekend, that he and his friends had been excitedly anticipating.

Victor put a small rope in his back pocket and walked outside. As he stood with the rain pelting down on him, he grew until he stood a mile high. Standing up above the rain clouds, he took the rope from his back pocket. The rope was now hundreds of yards long and Victor used it to lasso the rain clouds. Holding the clouds in the rope, he walked across the country taking fifty-mile steps. He untied the clouds over the drought-stricken land and a heavy rain began to fall there. Then he walked back to his house in his town where the sun was now shining, shrunk back down to his regular size, and went inside to pack for the camping trip.

Imagine that you will participate in a "tall-tale writing contest" at your school. Write your own tall tale. You can write about yourself, someone you know, or someone you imagine. Be sure to give your main character whatever superhuman abilities are necessary to save the day.

Jacob the Strongman

In the town of Everclear, the citizens would always experience problems with the snow. Usually for months, it would snow and snow on the town, causing massive snowstorms and on top of that, when the snow began to thaw, flooding would start ruining businesses and homes. The mayor of the town knew about the problem and called for a town meeting. The citizens of the town talked and debated and decided that they would need the help of Jacob the Strongman to solve the problem.

Jacob was a very strongman. He could lift anything from big trucks to gigantic horses. Whatever required great strength, Jacob was the man for the job. However this time it was a difficult problem. The

town wanted Jacob to lift up the town and bring it to a higher elevation to prevent flooding and to minimize the amount of snow being collected.

He thought to himself "Could I really do it?" He debated with this question for many days and decided he will do what is best for the town.

So on one uncommon sunny day, the town waited anxiously for Jacob. As he came out of his house, Jacob had a determined look on his face and he talked to no one. Then he went to the edge of town and began pulling the ground. He was pulling and pulling and it seemed as if Jacob couldn't do it, but he kept on trying. He was turning so red from all the exertion and effort he was using until finally the whole town was lifted off the ground. Everyone was ecstatic and cheered for Jacob.

Jacob brought the town to a higher mountain and they had a huge celebration. All of that "work" took a matter of hours and everyone was impressed by Jacob's heroism. Since then there was never a strong man like Jacob who lived in everclear. Although Jacob is already gone, the town's people know that all of their happiness and the salvation of their town

was due to the strongman, Jacobs.

Scorer Comments:

"Skillful" responses told well-developed and well-organized stories, but with occasional lapses in continuity. These responses also exhibit some sentence variety and good word choices. The story shown below exhibits a mix of well-executed sentences and more awkward sentences with simple word choices. The response's well-chosen details about Jacob and the snow crisis balance these weaknesses.

Sufficient - Student Response

1. A tall tale is a type of story that uses exaggeration to solve a real-life problem. As the story progresses, the main character demonstrates superhuman abilities to overcome ordinary obstacles. The story shown below is an example of a tall tale.

A Flood and Drought Tale

It had been raining without a break for four days. The roads were flooded, power outages were common, and dry basements had become a thing of the past. At the same time, a drought on the other side of the country was responsible for dangerously low reservoir levels, thirsty cattle, and parched fields.

Victor, a young man who lived in one of the flooded towns, was very unhappy about the continuing bad weather. Not only had he spent the last two days bailing water from his family's basement, but he was due to miss out on a camping trip, originally planned for the upcoming weekend, that he and his friends had been excitedly anticipating.

Victor put a small rope in his back pocket and walked outside. As he stood with the rain pelting down on him, he grew until he stood a mile high. Standing up above the rain clouds, he took the rope from his back pocket. The rope was now hundreds of yards long and Victor used it to lasso the rain clouds. Holding the clouds in the rope, he walked across the country taking fifty-mile steps. He untied the clouds over the drought-stricken land and a heavy rain began to fall there. Then he walked back to his house in his town where the sun was now shining, shrunk back down to his regular size, and went inside to pack for the camping trip.

Imagine that you will participate in a "tall-tale writing contest" at your school. Write your own tall tale. You can write about yourself, someone you know, or someone you imagine. Be sure to give your main character whatever superhuman abilities are necessary to save the day.

Who is stealing the sunshine?

One day on a bright sunny morning
a little boy was play in the forest
down by the stream. He liked to
play there because if he got thirsty
then he could just get a drink from

the stream.

As the morning went on a darkness fell over the land. The boy got so scared. You, see he had never been in the forest when it was dark.

He felt his way out because he could not see anything. When he finally got home, his mom was very glad to see him.

For the next couple days it stayed as dark as night. The little boy was getting sick of not being able to play in the forest.

He decided that the sun was stolen and it was up to him to find it.

First he went back to his favorite stream to think it over.

When he got there it glowed.

All of the sudden he was a little tadpole.

He went around in the stream to the very bright light to see what it was.

When he noticed that it was the sun he found a way to tie sea weed to it and he launched it back into the sky.

HE THEN SPENT THE REST OF THE
 day playing by his stream.

Scorer Comments:

"Sufficient" responses told clear stories developed with some pertinent details. Parts of the stories were generally related, but transitions were often lacking. In the "Sufficient" response below, the student offers a simple, clear story. The story lacks detail, sentence variety, and has a number of minor errors.

Uneven - Student Response

1. A tall tale is a type of story that uses exaggeration to solve a real-life problem. As the story progresses, the main character demonstrates superhuman abilities to overcome ordinary obstacles. The story shown below is an example of a tall tale.

A Flood and Drought Tale

It had been raining without a break for four days. The roads were flooded, power outages were common, and dry basements had become a thing of the past. At the same time, a drought on the other side of the country was responsible for dangerously low reservoir levels, thirsty cattle, and parched fields.

Victor, a young man who lived in one of the flooded towns, was very unhappy about the continuing bad weather. Not only had he spent the last two days bailing water from his family's basement, but he was due to miss out on a camping trip, originally planned for the upcoming weekend, that he and his friends had been excitedly anticipating.

Victor put a small rope in his back pocket and walked outside. As he stood with the rain pelting down on him, he grew until he stood a mile high. Standing up above the rain clouds, he took the rope from his back pocket. The rope was now hundreds of yards long and Victor used it to lasso the rain clouds. Holding the clouds in the rope, he walked across the country taking fifty-mile steps. He untied the clouds over the drought-stricken land and a heavy rain began to fall there. Then he walked back to his house in his town where the sun was now shining, shrunk back down to his regular size, and went inside to pack for the camping trip.

Imagine that you will participate in a "tall-tale writing contest" at your school. Write your own tall tale. You can write about yourself, someone you know, or someone you imagine. Be sure to give your main character whatever superhuman abilities are necessary to save the day.

It was a great night with stars and the moon. The night was calm, no noise and peaceful. Salley and one other friend were out observing the sky. Both of them were amazed of how beautiful the night was. When all of a sudden something strange started to occur. Salley looked closely and saw that two of the stars were fighting. The stars were glowing really fast and bumping into each other. Salley and her friend were scared. After a few minutes, the moon appeared to get closer. After the moon got closer the problem seemed to stop.

Scorer Comments:

"Uneven" responses told stories that were clear in parts, while other parts were unfocused or minimally developed. Clarity in some responses was affected by disjointed organization, uneven control over sentence boundaries or structure, or errors in grammar. The sample included here does attempt to tell a story, but has large gaps in development that make the response unclear.

Insufficient - Student Response

1. A tall tale is a type of story that uses exaggeration to solve a real-life problem. As the story progresses, the main character demonstrates superhuman abilities to overcome ordinary obstacles. The story shown below is an example of a tall tale.

A Flood and Drought Tale

It had been raining without a break for four days. The roads were flooded, power outages were common, and dry basements had become a thing of the past. At the same time, a drought on the other side of the country was responsible for dangerously low reservoir levels, thirsty cattle, and parched fields.

Victor, a young man who lived in one of the flooded towns, was very unhappy about the continuing bad weather. Not only had he spent the last two days bailing water from his family's basement, but he was due to miss out on a camping trip, originally planned for the upcoming weekend, that he and his friends had been excitedly anticipating.

Victor put a small rope in his back pocket and walked outside. As he stood with the rain pelting down on him, he grew until he stood a mile high. Standing up above the rain clouds, he took the rope from his back pocket. The rope was now hundreds of yards long and Victor used it to lasso the rain clouds.

Holding the clouds in the rope, he walked across the country taking fifty-mile steps. He untied the clouds over the drought-stricken land and a heavy rain began to fall there. Then he walked back to his house in his town where the sun was now shining, shrunk back down to his regular size, and went inside to pack for the camping trip.

Imagine that you will participate in a "tall-tale writing contest" at your school. Write your own tall tale. You can write about yourself, someone you know, or someone you imagine. Be sure to give your main character whatever superhuman abilities are necessary to save the day.

A guy named Mikey B. came on to the Mounties football team that was 0-5 this season and 1-20 in the last two seasons combined. He was the running back. He told the coach to just give him the ball and he will get a touchdown. Sure enough, the coach put him in when the team was on the 20 yard line going in to score. Mike took the hand off for a touchdown. Then on Mike averaged 20 yds a carry on took the Mounties on a 11-0 winning and took the Superbowl. Were they won big Mikey was the MVP.

Scorer Comments:

"Insufficient" responses attempted to tell stories but were very underdeveloped, disorganized, or had severe errors in sentence control or grammar. The response shown here, although it attempts to develop a complete narrative, exhibits minimal control over sentence boundaries and structure, as well as inaccurate word choices.

Unsatisfactory - Student Response

1. A tall tale is a type of story that uses exaggeration to solve a real-life problem. As the story progresses, the main character demonstrates superhuman abilities to overcome ordinary obstacles. The story shown below is an example of a tall tale.

A Flood and Drought Tale

It had been raining without a break for four days. The roads were flooded, power outages were common, and dry basements had become a thing of the past. At the same time, a drought on the other side of the country was responsible for dangerously low reservoir levels, thirsty cattle, and parched fields.

Victor, a young man who lived in one of the flooded towns, was very unhappy about the continuing bad weather. Not only had he spent the last two days bailing water from his family's basement, but he was due to miss out on a camping trip, originally planned for the upcoming weekend, that he and his friends had been excitedly anticipating.

Victor put a small rope in his back pocket and walked outside. As he stood with the rain pelting down on him, he grew until he stood a mile high. Standing up above the rain clouds, he took the rope from his back pocket. The rope was now hundreds of yards long and Victor used it to lasso the rain clouds. Holding the clouds in the rope, he walked across the country taking fifty-mile steps. He untied the clouds over the drought-stricken land and a heavy rain began to fall there. Then he walked back to his house in his town where the sun was now shining, shrunk back down to his regular size, and went inside to pack for the camping trip.

Imagine that you will participate in a "tall-tale writing contest" at your school. Write your own tall tale. You can write about yourself, someone you know, or someone you imagine. Be sure to give your main character whatever superhuman abilities are necessary to save the day.

It was at midnight during the
winter in a little cabin in Texas.
A young woman was giving birth to
a healthy baby boy.
In a few weeks

Scorer Comments:

"Unsatisfactory" responses responded to the prompt but provided little coherent content. The response below provides no more than an opening for a story.

7. Patty expects that each tomato plant in her garden will bear 24 tomatoes. If there are 6 tomato plants in her garden, how many tomatoes does she expect?
- A. 4
 - B. 18
 - C. 30
 - D. 144

Did you use the calculator on this question?

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.

What is the probability that Leroy will be able to purchase a 30-cent candy bar with the two coins in his left pocket?

Using the coins, explain your reasoning.

Solution:

QP Not able to purchase candy bar with these

QN Able to purchase candy bar with these

QD Able to purchase candy bar with these

PN Not able to purchase candy bar with these

PD Not able to purchase candy bar with these

ND Not able to purchase candy bar with these

The probability is $\frac{2}{6}$ or $\frac{1}{3}$ because there are 6 different possible combinations for the two coins but only 2 of these have a combined value of 30 cents or more.

Note: Explanation must include correct number of total possible combinations as well as an indication of those combinations that satisfy 30-cent criteria.

Score & Description**Extended**

Complete correct solution that indicates correct probability with a complete explanation. Must indicate the 2 successful combinations (May use conditional probabilities).

Satisfactory

Response indicates an incorrect probability but explanation implies correct reasoning (sample space of 6).

OR

Response has correct probability for incomplete number of total possible combinations of coins or incomplete explanation. (Probability agrees with sample space.) For a score of 4, sample space must contain at least 4 different, correct pairs.

Partial

Response gives a correct probability and no explanation.

OR

Less than 4 pairs with agreeing probability.

OR

A correct probability that is based on an incorrect explanation.

Minimal

Response contains evidence that student knows that there is more than one possible combination for the

coins in the left pocket. Probability is missing or incorrect.

Incorrect

Incorrect response

Extended - Student Response

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.

2 correct results
6 different possibilities

$1q, 1d (R)$
 $1q, 1n (R)$
 $1q, 1p (w)$
 $1d, 1n (w)$
 $1d, 1p (w)$
 $1n, 1p (w)$

$\frac{1}{3}$

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.

These are the possible combos of coins:

$35 = 25 \text{ and } 10$
 $26 = 25 \text{ and } 1$
 $30 = 25 \text{ and } 5$
 $15 = 10 \text{ and } 5$
 $11 = 10 \text{ and } 1$
 $6 = 5 \text{ and } 1$

and the same for the other pocket.

only two possible combos add up to more than 30 or 30 multiply the ~~number~~ total # of combos (6) by 2 and you get 12. 4 out of the twelve work but only if it is in his left pocket so we can go back to the 6 coins. 2 of those work.

$\frac{1}{3}$ probability that he can buy the candy bar

If need be: $\frac{2}{6}$ is reduced to $\frac{1}{3}$.

Scorer Comments:

These responses correctly found the probability of $\frac{1}{3}$, indicated the 2 successful combinations, and had

a complete, correct explanation.

Satisfactory - Student Response

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.

$$\begin{array}{r} 25 \\ + 10 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 5 \\ + 1 \\ \hline 6 \end{array}$$

what is the chance that Leroy will be able to buy a 30 cent candy bar with the money that is in his left pocket?

There is a $\frac{1}{6}$ chance because in his left pocket, it could either be (25, 10) (25, 5) (25, 1) (10, 1) (10, 5) (5, 1). So that is $\frac{1}{6}$.

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.

The probability Leroy will be able to purchase a 30-cent candy bar with the two coins in his left pocket is 2 out of 5. He could have a quarter and dime or a quarter and nickel which would make him have enough money but he could also have a quarter and penny, dime and nickel, dime and penny, or a nickel and penny in his left pocket which would not be enough money.

Scorer Comments:

These responses had an incorrect probability but each explanation implied correct reasoning.

Partial - Student Response

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.

$$\begin{array}{r}
 \frac{2}{4} \\
 2 \leftarrow \begin{array}{l} Q = 1 \text{¢} \\ D = 1 \text{¢} \\ N = 2 \text{¢} \\ P = 1 \text{¢} \end{array} \\
 \hline
 2 \leftarrow P = 1 \text{¢}
 \end{array}
 \rightarrow 4$$

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.

The probability is not much because he could have placed 1 quarter and 1 penny in his left or he could have put 1 penny and 1 dime or 1 dime & 1 nickel so the probability might be $\frac{1}{3}$

Scorer Comments:

The first response received partial credit because the probability ($\frac{2}{4}$) is incorrect, but is based (correctly) on the four given coin combinations. The second response had a correct probability based on an incorrect explanation.

Minimal - Student Response

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.

$\frac{1}{2}$
 because, he can have 2 ways
 of getting 30¢.

he can have

(25) (10) or (25) (5)

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.



The probability is 2:4 he has
 a 50% chance, because he has
 4 coins and 2 pockets.

Scorer Comments:

These responses contained evidence that there was more than 1 possible combination of coins but the probability is incorrect.

Incorrect - Student Response

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.



I believe it is a 2 out of 8 because you need the quarter and nickle and to get a quarter it is 1 out of 4 and to get a nickle it is 1 of 4 so I added them together and got 2 out of 8.

18. Leroy has one quarter, one dime, one nickel, and one penny. Two of the coins are in his left pocket and the other two coins are in his right pocket. The coins have been randomly placed in the two pockets.



because he has to have the quarter to make 30¢

Scorer Comments:

These responses had an incorrect explanation and an incorrect probability.

Table A-1
Sample Language Complexity Ratings

Test Item	Language Complexity Ratings		
	Item stem	Student response*	Passage
<i>R4_scr_medium</i>	id: 2 pl: 1 TD: 1.5 LS: 2 V: 2 LangCmplx: 5.5	id: 1 pl: 1 TD: 1 LS: 2 V: 1 LangCmplx: 4	id: 1 pl: 4 TD: 2.5 LS: 2 V: 3 LangCmplx: 7.5
<i>W12_ecr_easy</i>	id: 3 pl: 2 TD: 2.5 LS: 4 V: 1 LangCmplx: 7.5	id: 2 pl: 3 TD: 2.5 LS: 3 V: 1 LangCmplx: 6.5	
<i>M4_mc_easy</i>	id: 2 pl: 1 TD: 1.5 LS: 3 V: 1 LangCmplx: 5.5		
<i>M8_ecr_hard</i>	id: 3 pl: 1 TD: 2 LS: 2 V: 2 LangCmplx: 6	id: 3 pl: 1 TD: 2 LS: 2 V: 2 LangCmplx: 6	

