Samantha Howe

Instructional Materials Critique and Redesign

EDPN 673: Methods and Materials for Teaching English as a Second Language

Dr. Jasmin Cowin

November 16, 2023

For the purposes of this assignment, I chose to evaluate two books I have actually utilized teaching fifth grade and one science article used for middle school instruction. *Success with Grammar Grade 5* (Scholastic, 2022) is a grammar workbook that provides explanations and practice activities for a variety of grammar concepts fifth grade students should have an understanding of. *Big Ideas Math: Modeling Real Life Grade 5* (Boswell & Larson, 2018) is the math curriculum used in my school district. This is the first school year it has been implemented throughout all elementary grades and it has received mixed reviews from the staff. *A Fizzy Reaction* (Readworks, 2020) is an article intended to provide eighth graders with background information on chemical reactions before conducting their own experiments. I have reviewed these three materials based on a set of rubrics and the WIDA PRIME tool. I also reflected on the materials' effectiveness at promoting my own ELL teaching philosophy which includes, providing equitable opportunities for all students through student-centered activities, culturally relevant instruction and effective differentiation.

Book 1: Success with Grammar Grade 5 (Scholastic, 2022)

I evaluated the Scholastic Teaching Resources, Success With Grammar (Grade 5) book. This student edition workbook aligns with New York State ELA standards and is therefore appropriate for the typical fifth grade student. The book provides a list of grade appropriate skills that directly align with the fifth grade NYS writing standards, “5W2: Write informative/explanatory texts to explore a topic and convey ideas and information relevant to the subject” and “5W3: Write narratives to develop real or imagined experiences or events using effective techniques,descriptive details, and clear

event sequences" (NYSED, 2017). These skills include, developing a topic with facts/details, linking ideas, the use of transitional words, providing a concluding statement, along with other necessary grammatical concepts. This book is also effective at providing brief, yet meaningful, explanations of grammar topics paired with relevant examples. This is a strong point of the book because "providing examples along with an explanation of concepts helps strengthen learning by identifying the key attributes associated with the concept" (MSU Denver, 2022). In my evaluation of this resource, I determined that it is an effective resource for teaching and enhancing fifth grade grammar knowledge. However, the lack of differentiation and supplementary materials may make this a challenging resource to utilize with English language learners, and is therefore not equitable.

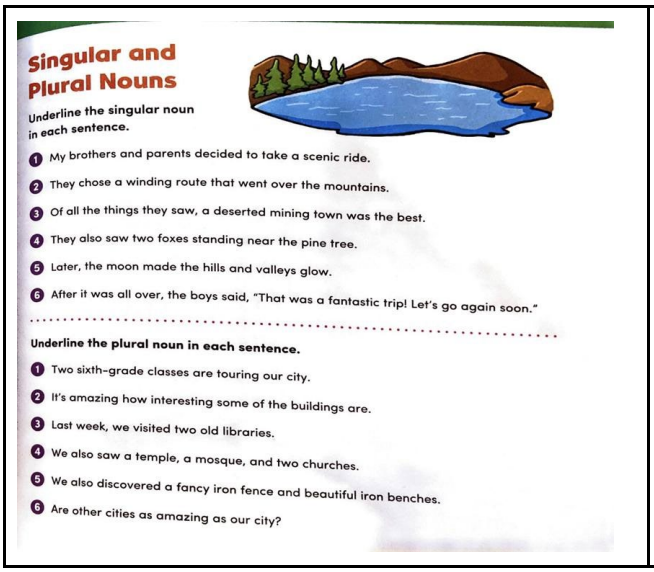
Based on non-negotiable criteria outlined by the rubrics, this book lacks differentiation and supplementary materials. This grammar book offers no alternate explanations or leveled prompts, so fifth grade students who are reading and writing below grade level will struggle with this, especially those with linguistic goals. As for cultural relevancy, the illustrations, names and scenarios depict students of various races and connect to a wide range of interests. Mexico, France, Denmark and China are among some of the countries and cultures referenced throughout the activities. Unfortunately, only one type of learning style is reflective in these materials. In order for ELLs or lower level readers to access the material in this book, differentiated activities and supplementary materials need to be included.

Utilizing the WIDA PRIME tool to analyze this grammar book revealed that the material does not follow an asset-based philosophy or promote opportunities for

effective differentiation. However, this tool did reveal that the material supports connections to state and language standards while promoting higher order thinking. The lack of differentiation attributes to the idea that this book was not created with a variety of learners in mind. There are no supports in place that allow struggling students to access academic vocabulary and grammatical concepts. This book is directly linked to NYS ELA standards and does provide opportunities for students to meet linguistic goals. Students who do not need additional support accessing the academic vocabulary, will most likely find success in developing their knowledge of grammatical concepts and new vocabulary. Unfortunately, ELLs and lower level readers will most likely struggle accessing this resource independently.

A successful redesign of this book would need to include leveled differentiation and supplementary materials. For the purposes of this assignment, I have chosen to redesign an activity involving singular and plural nouns by creating a differentiated version of the activity for lower level students and ELLs. I redesigned the activity to eliminate the lengthy sentences and have students only focused on nouns. For many students, the complex sentence structure may be overwhelming and distract from the goal of identifying singular and plural nouns. This is why it is essential for “content [to] be modified for students who need additional practice with essential elements before moving on” (Ford, 2012). I also added visuals to further support vocabulary development and provide additional support.

Original Activity	Redesign



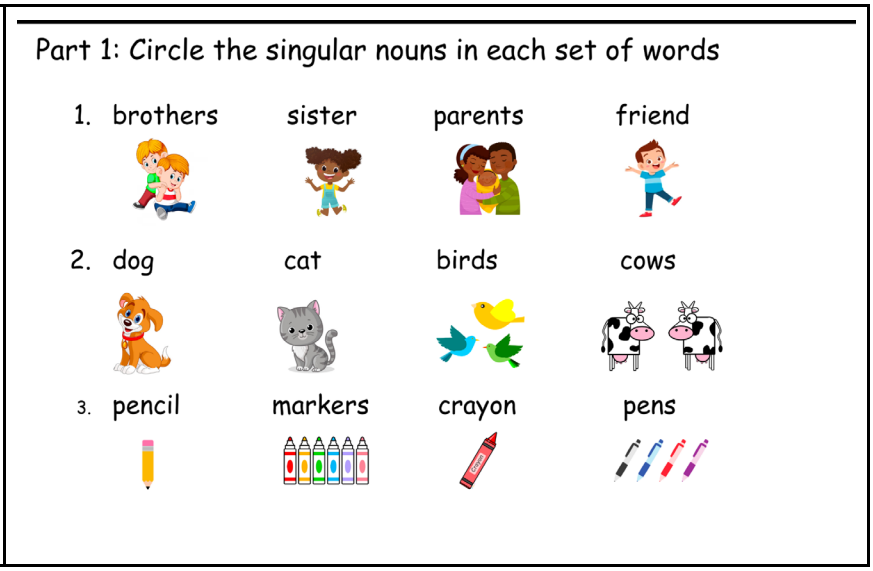
Singular and Plural Nouns

Underline the singular noun in each sentence.

1. My brothers and parents decided to take a scenic ride.
2. They chose a winding route that went over the mountains.
3. Of all the things they saw, a deserted mining town was the best.
4. They also saw two foxes standing near the pine tree.
5. Later, the moon made the hills and valleys glow.
6. After it was all over, the boys said, "That was a fantastic trip! Let's go again soon."

Underline the plural noun in each sentence.

1. Two sixth-grade classes are touring our city.
2. It's amazing how interesting some of the buildings are.
3. Last week, we visited two old libraries.
4. We also saw a temple, a mosque, and two churches.
5. We also discovered a fancy iron fence and beautiful iron benches.
6. Are other cities as amazing as our city?



Part 1: Circle the singular nouns in each set of words

1. brothers sister parents friend
2. dog cat birds cows
3. pencil markers crayon pens

Book 2: Big Ideas Math: Modeling Real Life Grade 5 (Boswell & Larson, 2018)

I evaluated a lesson from the Place Value Concepts unit of the Big Ideas math curriculum textbook. Lesson 1.4 focuses on decimals to the thousandths and clearly aligns with NYS fifth grade math standards (standards directly referenced in teacher's edition). This lesson provides teachers and students with clear goals and focus points of the lesson: "Learning Target: Write thousandths as fractions and decimals." "Success Criteria: I can write a decimal to the thousandths place as a fraction. I can write a fraction involving thousandths as a decimal." Based on non-negotiable criteria outlined by the rubrics, the book contains relevant examples and does a decent job maintaining cultural relevancy. This specific chapter lacked cultural integration, but the rest of the book integrates word problems referencing various cultures frequently. The chapter integrates opportunities for differentiation through "dig deeper" enrichment problems. The use of highlighter and graphic organizers showcase the most important material for students to focus on.

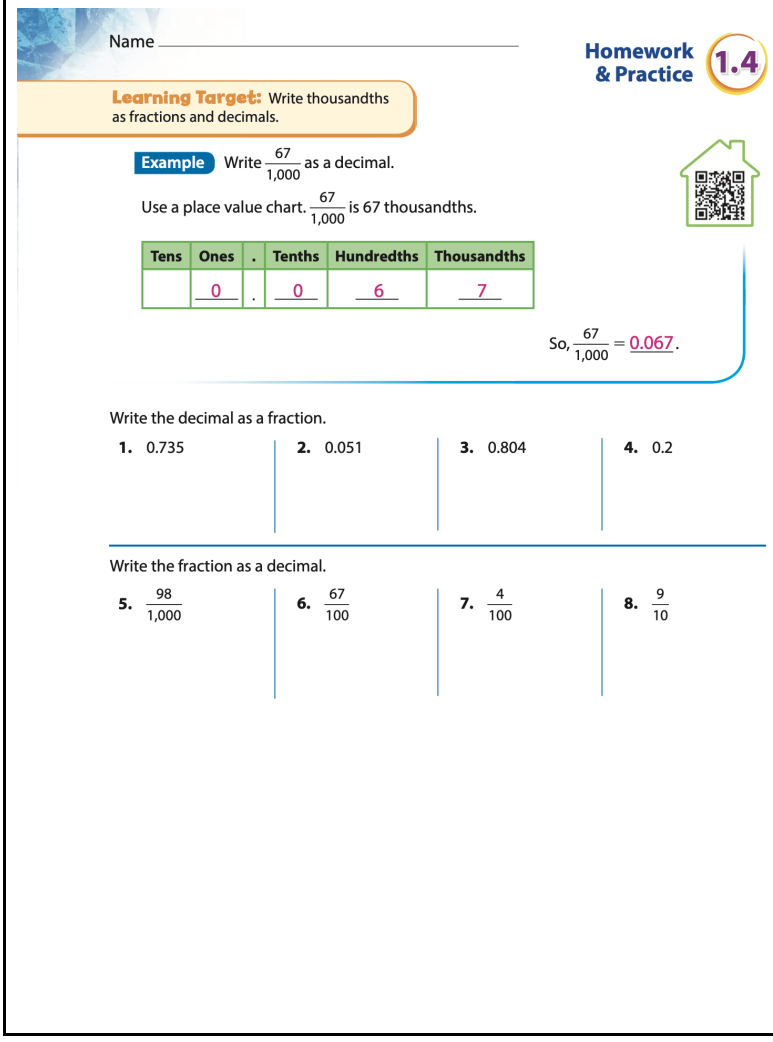
While I believe this is a strong resource for teaching students mathematical concepts, ELLs were not closely considered in the creation of this material. Certain ELLs will benefit from the use of highlighter, graphic organizers and images. However, ELLs at the beginning of their English language acquisition will struggle deciphering meaning from many of the questions that require reading skills. Since math is a universal concept, many ELLs who experience difficulty with math are actually struggling with the academic vocabulary and not the specific math concept. “Solving word problems, following instructions, understanding and using mathematical vocabulary correctly — all of these skills require a language proficiency that sometimes exceeds our expectations” (Robertson, 2010). Unfortunately, this book requires students to have a moderate level of language proficiency to access the content and academic vocabulary and offers very little support for those who do not.

Utilizing the WIDA PRIME tool to analyze this mathematics book revealed that this resource effectively makes connections to NYS fifth grade math standards, provides opportunities for differentiation, relevant connections to background knowledge and provides real life connections. However, I believe “the targeted language domains are presented within the context of language proficiency levels” (WIDA, n.d), minimally. The chapter I reviewed does not provide students at the early stages of English language acquisition with enough support to comprehend the academic vocabulary. These students will need extensive teacher support to access the mathematics concepts and complete the activities.

In this redesign I decided to provide students with a scaffold to assist them in reading questions and accessing the academic vocabulary. Each question in this

section utilizes the terms *write, fraction and decimal*. Students who do not know what these terms mean will not be able to answer the question despite their potential knowledge of fractions and decimals. In order to overcome this potential barrier, I have created a reference sheet with pictures and translations to help students complete the activity. Along with the reference sheet, I have inserted images next to the words in the questions to further assist students in determining what each question is asking.

Original Activity



Name _____

Homework & Practice 1.4

Learning Target: Write thousandths as fractions and decimals.

Example Write $\frac{67}{1,000}$ as a decimal.

Use a place value chart. $\frac{67}{1,000}$ is 67 thousandths.

Tens	Ones	.	Tenths	Hundredths	Thousandths
	0	.	0	6	7

So, $\frac{67}{1,000} = 0.067$.

Write the decimal as a fraction.

1. 0.735
2. 0.051
3. 0.804
4. 0.2

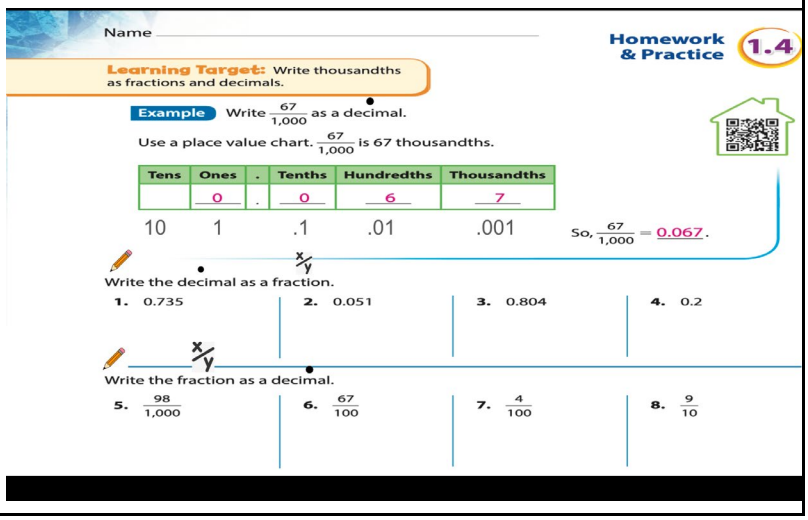
Write the fraction as a decimal.

5. $\frac{98}{1,000}$
6. $\frac{67}{100}$
7. $\frac{4}{100}$
8. $\frac{9}{10}$

Redesign

Reference Sheet:

Word	Symbol	Example	Translation (Spanish)
Write		**N/A**	**escribir**
Fraction		**$\frac{3}{100}$**	**fracción**
Decimal		**.03**	**decimal**



Name _____

Homework & Practice 1.4

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Example Write $\frac{67}{1,000}$ as a decimal.

Use a place value chart. $\frac{67}{1,000}$ is 67 thousandths.

Tens	Ones	.	Tenths	Hundredths	Thousandths
	0	.	0	6	7
10	1		.1	.01	.001

So, $\frac{67}{1,000} = 0.067$.

Write the decimal as a fraction.

1. 0.735
2. 0.051
3. 0.804
4. 0.2

Write the fraction as a decimal.

5. $\frac{98}{1,000}$
6. $\frac{67}{100}$
7. $\frac{4}{100}$
8. $\frac{9}{10}$

Book 3: A Fizzy Reaction (Readworks, 2020)

Evaluation

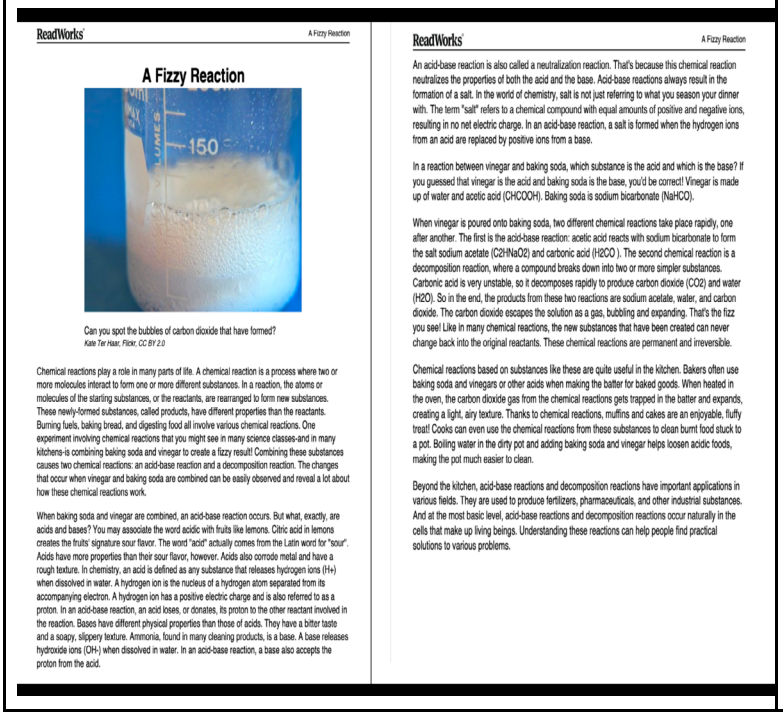
I evaluated an eighth grade science article provided by my school district's Readworks subscription. This nonfiction article directly aligns with NYS Next Generation Science standards, specifically, “MS-PS1-8. Plan and conduct an investigation to demonstrate that mixtures are combinations of substances” (NYSED, 2016). This reading provides students with relevant and necessary information to conduct future experiments on their own. Unfortunately this article contains a high frequency of academic vocabulary and requires students to obtain a significant amount of scientific background knowledge to decipher meaning from the text. The online version of the article highlights and provides definitions for a handful of these words such as, *application, associate, compound, interact and various*. However, there are plenty of words that are not explicitly defined such as, *substance, experiment, chemical, reaction and texture*, that will make accessing this document inequitable for ELLs and lower level readers.

Utilizing the WIDA PRIME tool to analyze this science article revealed that the material does not follow an asset-based philosophy or promote opportunities for effective differentiation. Students' background knowledge and interests were not considered in the creation of this resource. Of course, a reading on chemical reactions is not going to spark each students’ interest. However, this resource is problematic because it does not consider various student abilities. There are no graphics or alternate explanations that make this resource accessible for a wide range of students. While the academic vocabulary is appropriate for a typical eighth grade student, low

level ELLs will most likely struggle to meet linguistic and content area goals without any additional support.

The redesign of this material includes a graphic organizer of key vocabulary words that will help students, specifically Spanish speaking ELLs, better access the text. The intent of the graphic organizer is to provide students with the necessary background knowledge to comprehend the material. I also modified the text to highlight all vocabulary words, indicating that students can find the translations and definitions on the graphic organizer. This redesign supports linguistic goals, as it allows students to not only comprehend the text, but discuss it with peers and participate in future science experiments.

Original



ReadWorks A Fizzy Reaction

A Fizzy Reaction

Can you spot the bubbles of carbon dioxide that have formed?
Kate Ter Haar, Flickr, CC BY 2.0

Chemical reactions play a role in many parts of life. A chemical reaction is a process where two or more molecules interact to form one or more different substances. In a reaction, the atoms or molecules of the starting substances, or the reactants, are rearranged to form new substances. These newly-formed substances, called products, have different properties than the reactants. Burning fuels, baking bread, and digesting food all involve various chemical reactions. One experiment involving chemical reactions that you might see in many science classes-and in many kitchens-is combining baking soda and vinegar to create a fizzy result! Combining these substances causes two chemical reactions: an acid-base reaction and a decomposition reaction. The changes that occur when vinegar and baking soda are combined can be easily observed and reveal a lot about how these chemical reactions work.

When baking soda and vinegar are combined, an acid-base reaction occurs. But what, exactly, are acids and bases? You may associate the word acidic with fruits like lemons. Citric acid in lemons creates the fruits' signature sour flavor. The word "acid" actually comes from the Latin word for "sour". Acids have more properties than their sour flavor, however. Acids also corrode metal and have a rough texture. In chemistry, an acid is defined as any substance that releases hydrogen ions (H^+) when dissolved in water. A hydrogen ion is the nucleus of a hydrogen atom separated from its accompanying electron. A hydrogen ion has a positive electric charge and is also referred to as a proton. In an acid-base reaction, an acid loses, or donates, its proton to the other reactant involved in the reaction. Bases have different physical properties than those of acids. They have a bitter taste and a soapy, slippery texture. Ammonia, found in many cleaning products, is a base. A base releases hydroxide ions (OH^-) when dissolved in water. In an acid-base reaction, a base also accepts the proton from the acid.

ReadWorks A Fizzy Reaction

An acid-base reaction is also called a neutralization reaction. That's because this chemical reaction neutralizes the properties of both the acid and the base. Acid-base reactions always result in the formation of a salt. In the world of chemistry, salt is not just referring to what you season your dinner with. The term "salt" refers to a chemical compound with equal amounts of positive and negative ions, resulting in no net electric charge. In an acid-base reaction, a salt is formed when the hydrogen ions from an acid are replaced by positive ions from a base.

In a reaction between vinegar and baking soda, which substance is the acid and which is the base? If you guessed that vinegar is the acid and baking soda is the base, you'd be correct! Vinegar is made up of water and acetic acid ($CHCOOH$). Baking soda is sodium bicarbonate ($NaHCO$).

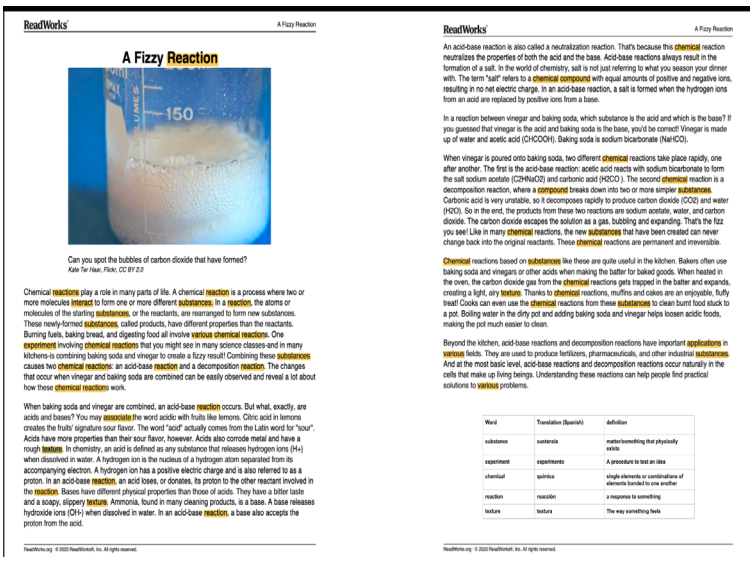
When vinegar is poured onto baking soda, two different chemical reactions take place rapidly, one after another. The first is the acid-base reaction: acetic acid reacts with sodium bicarbonate to form the salt sodium acetate ($C2HNaO2$) and carbonic acid ($H2CO$). The second chemical reaction is a decomposition reaction, where a compound breaks down into two or more simpler substances. Carbonic acid is very unstable, so it decomposes rapidly to produce carbon dioxide ($CO2$) and water ($H2O$). So in the end, the products from these two reactions are sodium acetate, water, and carbon dioxide. The carbon dioxide escapes the solution as a gas, bubbling and expanding. That's the fizz you see! Like in many chemical reactions, the new substances that have been created can never change back into the original reactants. These chemical reactions are permanent and irreversible.

Chemical reactions based on substances like these are quite useful in the kitchen. Bakers often use baking soda and vinegars or other acids when making the batter for baked goods. When heated in the oven, the carbon dioxide gas from the chemical reactions gets trapped in the batter and expands, creating a light, airy texture. Thanks to chemical reactions, muffins and cakes are an enjoyable, fluffy treat! Cooks can even use the chemical reactions from these substances to clean burnt food stuck to a pot. Boiling water in the dirty pot and adding baking soda and vinegar helps loosen acidic foods, making the pot much easier to clean.

Beyond the kitchen, acid-base reactions and decomposition reactions have important applications in various fields. They are used to produce fertilizers, pharmaceuticals, and other industrial substances. And at the most basic level, acid-base reactions and decomposition reactions occur naturally in the cells that make up living beings. Understanding these reactions can help people find practical solutions to various problems.

Redesign

Word	Translation (Spanish)	definition
substance	**sustancia**	**matter/something that physically exists**
experiment	**experimento**	**A procedure to test an idea**
chemical	**químico**	**single elements or combinations of elements bonded to one another**
reaction	**reacción**	**a response to something**
texture	**textura**	**The way something feels**



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substance	sustancia	matter/something that physically exists
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chemical	químico	single elements or combinations of elements bonded to one another
reaction	reacción	a response to something
texture	textura	The way something feels

Rubrics for Evaluation

Success with Grammar Grade 5 (Scholastic, 2022)

Organization	3 fully evident	2 mostly evident	1 partially evident	0 little or no evidence
Information is accurate & current	✓			
Reading level is appropriate for age/grade	✓			
Size and format of print is appropriate	✓			
Format is visually appealing & interesting	✓			
Total: 12/12				
Content	**3 fully evident**	**2 mostly evident**	**1 partially evident**	**0 little or no evidence**
Real-life applications are given	✓			

Information and directions are clearly written and explained	✓			
Activities are developmentally appropriate	✓			
Non text content (maps, graphs, pictures) are accurate and well integrated into the text			✓	
Activities apply to a diversity of student abilities, interests and learning styles			✓	
Activities include guiding questions which encourage the development of higher-level thinking skills		✓		
Supplementary materials are listed, well organized, of high quality, and are useful in enhancing instruction				✓
Total: 13/21				
Inclusion/Equity/Diversity	**3 fully evident**	**2 mostly evident**	**1 partially evident**	**0 little or no evidence**
Women and minorities are featured in important roles	✓			
Subject matter covers a spectrum of accomplishments and contributions by all sexes, races and physical conditions		✓		
All groups are presented in broad scope		✓		
Nouns, adjectives, terms and illustrations are non-stereotypical and non-prejudicial	✓			
Children of both sexes and various cultures and physical conditions will use the materials without feeling excluded, estranged or diminished		✓		
References and timelines feature events throughout various parts of the world	✓			
Appropriate for ELLs	✓			
Total: 18/21				

Big Ideas Math: Modeling Real Life Grade 5 (Boswell & Larson, 2018)

Organization	3 fully evident	2 mostly evident	1 partially evident	0 little or no evidence
Information is accurate & current	✓			
Reading level is appropriate for age/grade	✓			
Size and format of print is appropriate		✓		
Format is visually appealing & interesting	✓			
Total: 11/12				
Content	**3 fully evident**	**2 mostly evident**	**1 partially evident**	**0 little or no evidence**
Real-life applications are given	✓			
Information and directions are clearly written and explained	✓			
Activities are developmentally appropriate	✓			
Non text content (maps, graphs, pictures) are accurate and well integrated into the text		✓		
Activities apply to a diversity of student abilities, interests and learning styles		✓		
Activities include guiding questions which encourage the development of higher-level thinking skills	✓			
Supplementary materials are listed, well organized, of high quality, and are useful in enhancing instruction		✓		
Total: 19/21				
Inclusion/Equity/Diversity	**3 fully evident**	**2 mostly evident**	**1 partially evident**	**0 little or no evidence**
Women and minorities are featured in important roles		✓		

Subject matter covers a spectrum of accomplishments and contributions by all sexes, races and physical conditions			✓	
All groups are presented in broad scope		✓		
Nouns, adjectives, terms and illustrations are non-stereotypical and non-prejudicial	✓			
Children of both sexes and various cultures and physical conditions will use the materials without feeling excluded, estranged or diminished		✓		
References and timelines feature events throughout various parts of the world	✓			
Appropriate for ELLs		✓		
Total: 15/21				

A Fizzy Reaction (Readworks, 2020)

Organization	**3 fully evident**	**2 mostly evident**	**1 partially evident**	**0 little or no evidence**
Information is accurate & current	✓			
Reading level is appropriate for age/grade	✓			
Size and format of print is appropriate		✓		
Format is visually appealing & interesting			✓	
Total: 9/12				
Content	**3 fully evident**	**2 mostly evident**	**1 partially evident**	**0 little or no evidence**
Real-life applications are given	✓			

Information and directions are clearly written and explained	✓			
Activities are developmentally appropriate	✓			
Non text content (maps, graphs, pictures) are accurate and well integrated into the text			✓	
Activities apply to a diversity of student abilities, interests and learning styles			✓	
Activities include guiding questions which encourage the development of higher-level thinking skills		✓		
Supplementary materials are listed, well organized, of high quality, and are useful in enhancing instruction			✓	
Total: 14/21				

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