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**OER Rubrics & Exemplars**

**9.1**

**READING & ENGLISH 9-10 OER RUBRIC**

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| --- | --- | --- | --- | --- |
|  | Mastery | Proficient | Developing | Not Evident |
|  | **3** | **2** | **1** | **0** |
| CLAIM | * Introduces a clear and reasonable claim that reflects advanced understanding
 | * Introduces a clear and reasonable claim that reflects adequate student understanding
 | * Introduces a claim that reflects limited understanding
 | * Does not introduce a claim OR introduces a claim that reflects lack of student understanding
 |
| CONTENT | * Cites strong and thorough textual evidence to support claim
 | * Cites adequate, relevant textual evidence to support claim
 | * Cites evidence that does not support claim
 | * Does not include textual evidence
 |
| DEVELOPMENT | * Demonstrates how the evidence supports the claim with subtle inferences and advanced understanding
 | * Demonstrates how the evidence supports the claim with adequate inferences and understanding (may have logical lapses)
 | * Demonstrates how the evidence supports the claim with limited inferences and understanding (includes logical lapses)
 | * Does not demonstrate how the evidence supports the claim
 |
| ORGANIZATION | * Organizes ideas and establishes clear relationships within paragraphs and the essay as whole
 | * Formulaically organizes ideas and establishes clear relationships within paragraphs and the essay as whole
 | * With some lapses in logic, organizes ideas and establishes relationships within paragraphs and the essay as whole
 | * Does not organize ideas or establish relationships within paragraphs and the essay as whole
 |
| LANGUAGE | * Uses sophisticated language appropriate for audience and purpose (formal style and objective tone)
* Establishes writer’s voice
 | * Uses clear language appropriate for audience and purpose (formal style and objective tone)
 | * Uses simplistic language and inconsistently maintains a formal style and objective tone
 | * Informal, unclear language throughout writing
 |
| CONVENTIONS | * Correctly uses complex conventions of usage and mechanics
 | * Minor errors in conventions of usage and mechanics OR consistent use of simplistic conventions
 | * Patterns of errors in conventions of usage and mechanics
 | * Multiple, consistent errors in conventions of usage and mechanics
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**9.1 READING & ENGLISH OER SAMPLE RESPONSES**.

**9.1 Open Ended Response Question:** *In several well-developed paragraphs, determine the central idea of the excerpt from Maya Angelou’s* I Know Why the Caged Bird Sings*. Cite multiple pieces of strong and thorough textual evidence that support this central idea.*

**Sample Exemplar:**

 In the excerpt from Maya Angelou’s “I Know Why the Caged Bird Sings,” one young girl’s life is forever changed after her experience with a generous, if intimidating woman. To the narrator, Marguerite, at first Mrs. Flowers seems distant, if not better than other people in the town of Stamps. Yet Mrs. Flowers surprises Marguerite by taking a genuine interest in her education and even teaching Marguerite how to break free from the shackles of the lower class.

 Compared to the other black people in the town of Stamps, it is obvious that Mrs. Flowers is different, even superior, than the rest. Marguerite describes how Mrs. Flowers seems almost otherworldly: “She had the grace of control to appear warm in the coldest weather, and on the Arkansas summer days it seemed she had a private breeze which swirled around, cooling her.” To the narrator, it is as if Mrs. Flowers possesses superhuman powers, the ability to easily withstand life’s common annoyances. And later, when Marguerite has finally entered Mrs. Flowers’s house, she unexpectedly realizes that Mrs. Flowers does things that normal people do: “The odors in the house surprised me. Somehow I had never connected Mrs. Flowers with food or eating or any other common experience of common people. There must have been an outhouse, too.” Because of her separateness, Marguerite never considered that someone as sophisticated as Mrs. Flowers would do life’s more mundane things like buying food or eating or even using the bathroom.

 Yet it is not only the young girl Marguerite who mentally separates Mrs. Flowers from the rest of the black people in Stamps. Adults, like Marguerite’s mother, recognize her superiority as well. When Mrs. Flowers is shopping at the town store, Marguerite’s mother offers her son’s assistance: “Sister Flowers, I’ll send Bailey up to your house with these things.” Although most black people in Stamps would be expected to carry their own things, Marguerite’s mother knows that Mrs. Flowers is different. For Marguerite’s mother, and others in the town, Mrs. Flowers represents an upper class, and she demands a certain level of respect that is not afforded to the average black townsperson.

 Although Mrs. Flowers belongs to an upper class unfamiliar to most blacks in Stamps, she does take a genuine interest in the average member of the community. When she requests that Marguerite assist her in carrying the store goods instead of Bailey, Mrs. Flowers reveals her awareness: “I hear you’re doing very good schoolwork, Marguerite, but that it’s all written. The teachers report that they have trouble getting you to talk in class.” Mrs. Flowers has an intimate, not just a passing, knowledge of Marguerite’s academic performance. She knows both Marguerite’s strengths and weaknesses in terms of writing and speaking. Moreover, not only does Mrs. Flowers see Marguerite’s room for potential, she also encourages, even teaches Marguerite how to reach it: “Language is man’s way of communicating with his fellow man and it is language alone which separates him from the lower animals … Words mean more than what is set down on paper. It takes the human voice to infuse them with the shades of deeper meaning.” To Mrs. Flowers, Marguerite has untapped potential. Although her reading is worth praise, it is not enough in and of itself. With a bit of encouragement and further instruction, Mrs. Flowers plans to take Marguerite from the average student and transform her into something not unlike like herself: A black aristocrat.

 While Mrs. Flowers stands socially separate from many blacks in the town of Stamps, she does not intentionally distance herself. She has a keen awareness of others in the town—like the narrator—and even guides them towards success. Mrs. Flowers realizes the potential in a girl like Marguerite, and doesn’t use her superiority to stifle the narrator, but to bring her up in hopes that one day Marguerite, too, could meet the measure of what a human being can be.

**Grading:**

**Claim: Mastery (3):** The student clearly demonstrates that he comprehends the central idea of the excerpt and articulates it clearly: Mrs. Flowers is different and distant, but also interested in helping the townspeople.

**Content: Mastery (3):** The evidence describing Mrs. Flowers physically, but also her concern for the narrator, Marguerite.

**Development: Mastery (3):** The student uses the evidence to make inferences like “To the narrator, it is as if Mrs. Flowers possesses superhuman powers, the ability to easily withstand life’s common annoyances” and later when speaking of Marguerite’s performance in school, “Moreover, not only does Mrs. Flowers see Marguerite’s room for potential, she also encourages, even teaches Marguerite how to reach it.”

**Organization: Mastery (3):** The organization is logical and the argument builds on itself. The student begins by establishing Mrs. Flowers as different and separate from the rest of the black people in Stamps, but eventually adds to that assertion, showing how Mrs. Flowers is interested in Marguerite and willing to help her.

**Language: Mastery (3):** The student uses some sophisticated language throughout the essay: “and she demands a certain level of respect that is not afforded to the average black townsperson.”

**Conventions: Mastery (3):** He uses complex conventions and mechanics correctly, such as complex sentences beginning with a dependent clause: “Although her reading is worth praise, it is not enough in and of itself.”

**Total: 18/18**

# 9.1 MATH OER RUBRIC & SAMPLE RESPONSES

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| **Q#** | **Standard** | **2 points** | **1 point** | **0** |
| **#1** | **MP 3**: Construct viable arguments and critique the reasoning of others. **A.REI.1**: Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. | Student states that Teddy is correct and explains reasoning in complete sentences.Student states that Nicole is incorrect and explains reasoning in complete sentences. | Student states Teddy is correct and has math work to illustrate thinking; but student does not have a written explanation.ORStudent states that Nicole is incorrect and has math work to illustrate thinking; but student does not have a written explanation.  | Student does not identify who has the correct method or has no answer.  |
|  |  | **1 point** | **0.5 points** | **0** |
| #2a | **8.NS.2**: Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., $π^{2}$). For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations. | Ordered least to greatest in original form |  Ordered greatest to least in original form | Student ordered the numbers wrong, or they are not in the given form (decimals) |
|  |  | $$\frac{711π}{1000}, \sqrt{5},\frac{123}{55},\frac{5591}{2500}$$ | $$\frac{5591}{2500},\frac{123}{55}, \sqrt{5},\frac{711π}{1000},$$ |  |
|  | **Standard** | **1 point** | **0.5 points** | **0** |
| #2b | **8.NS.2**: Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., $π^{2}$). For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations. | Identifies both rational numbers and explains why they are rational. | Identified both rational numbers with no explanation, or explanation of a rational number but no numbers identified. | Nothing written, incorrect response or identified only 1 rational number without an explanation |
|  | *Tiered Responses (Samples)* | **Exemplar:** The rational numbers are $\frac{123}{55}and \frac{5591}{2500}$, because a rational number is a ratio of two integers whose decimals either repeat or terminates. $\frac{123}{55}$ has a decimal that repeats and $\frac{5591}{2500}$has a decimal that terminates OR $\frac{123}{55}$ and $\frac{5591}{2500}$ are rational because there are written as the quotient of two integers/as a fraction.  | The rational numbers are $\frac{123}{55} and\frac{5591}{2500}$.ORNumbers are rational because they are written as the quotient of two integers/as a fraction and are repeating or terminating decimals. |  |
|  |
| **Q#** | **Standard** | **2 points** | **1 point** | **0** |
| **3** | **N.RN.3:** Explain why the sum, difference or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. | Student states that $x+y$ will always be irrational because the sum or difference of a rational and irrational number is irrational; a student provides an example. | Student states that it is always irrational but lacks the example or explanation OR student provides example with no explanation for why it is irrational.  | Student answers incorrectly (rational) **AND** does not have example or explanation.  |
|  | *Tiered Responses (Samples)* | $x+y$ will be irrational because adding a rational number to an irrational number will not terminate the decimal or make it possible to be written as a fraction. Multiple answers acceptable: $8+π=$ irrational because 11.314159265… | It will be irrational. OR$8+π=$ 11.314159265… | Rational.$$8+π=11.14$$ |
|  |
| **Q#** | **Standard** | **2 points** | **1 point** | **0** |
| **4** | **N.RN.3:** Explain why the sum, difference or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. | Student states that yes it can be rational and provides an example squaring an irrational number that results in a rational solution.  | Student states a correct example, but does not state that it is rational. .  | Student said not possible or lacks any work.  |
|  | *Tiered Responses (Samples)* | Yes, it is possible. Multiple answers accepted: $√2$ is irrational, and $\sqrt{2}∙\sqrt{2}=2$. 2 is a rational number.  | Example: $\sqrt{2}∙\sqrt{2}=2$.  |  |
|  |
| **Q#** | **Standard** | **2 points** | **1 point** | **0** |
| 5 | A.REI.1: Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. | Student correctly solves the equation and explains why multiplying by the reciprocal is the same. | Student correctly solves with no explanation or an explanation that is not fully correct. OR student gives explanation but does not solve the equation. | Student does not solve the equation correctly and does not have an explanation for why multiplying by the reciprocal is the same. |
|  | *Tiered Responses (Samples)* | $$3∙\frac{7}{3}x=42∙3$$$$7x=126$$$$7 7$$$$x=18$$This method is the same as multiplying by the reciprocal because Sam multiplied by the denominator (3) and divided by the numerator (7); when multiplying by the reciprocal, you multiply by the denominator and divide by the numerator because the fraction flips.  | $$3∙\frac{7}{3}x=42∙3$$$$7x=126$$$$7 7$$$$x=18$$OR This method is the same as multiplying by the reciprocal because Sam multiplied by the denominator (3) and divided by the numerator (7); when multiplying by the reciprocal, you multiply by the denominator and divide by the numerator because the fraction flips. | Nothing. |
|  |
|  | **Standard** | **2 points** | **0 points** |  |
| 6 | A.REI.1: Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. | Student answers yes and explains that because $\frac{9}{5}$ is greater than 1, the product will also be greater than one-thus a positive number. | Incorrect answer ORStudent has answer but no explanation. |  |
|  | *Tiered Response (Samples)* | Yes, it will be greater than x because $\frac{9}{5}$ is greater than a whole, and multiplying anything by a number larger than one will result in a larger product. |  |  |
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**9.1 SCIENCE OER RUBRIC**

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| **Science Practices** | 2.3—The student can estimate numerically quantities that describe natural phenomena.3.1—The student can pose scientific questions.4.1—The student can justify the selection of the kind of data needed to answer a particular scientific question.6.1—The student can justify claims with evidence. |

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| 1. Claim-Evidence-Reasoning (**4 points**)
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| * **1 point for stating that claim is valid.**
	+ May include basic explanation but explanation is not necessary.
		- Not Acceptable: “Yes” or “No” without a complete statement.
		- Acceptable: “Yes, the student’s claim is valid.”
* **1 point for EACH piece of evidence (maximum of 2 points).**
* Refer to two data points from Table 1 that support the original claim OR the difference between two data points from Table 1.
	+ - Data must have accurate units.
		- Data points must include quantitative values, cannot broadly explain trends.

*Possible pieces of evidence include:* * As temperature increases by 10°C from 5 to 35°C, heart rate increases by 79, 86 and 75 beats/minute, respectively. Approximately 80 beats/minute per 10°C
	+ At 5°C the heart rate is lowest at 20 beats/minute, and as temperature increases to 35°C the heart rate is the highest at 280 beats/minute.
* **1 point for providing reasoning that links evidence to the claim (1 max).**
	+ Student must support evidence with connection to the scientific principle in the text.
	+ Students should make a reasonable connection between claim and evidence using information from the text.

*Possible reasoning includes:* * *Since fleas are insects and do not have internal mechanisms to control heart rate, the fleas’ average heart rate decreases with the temperature.*

*OR** *Fleas are more directly affected by environmental temperature because they cannot regulate their internal body temperatures like other organisms can.*
* ***Subtract 1/2 point for missing unit(s )for an otherwise correct answer.***
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| 1. Quantitative Reasoning (**2 points**)
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| * **1 point for correct response: Between 5 and 15** °C**.**
	+ Answer must include correct units to earn the point.
* **1 point for justification.**
	+ Between 5 and 15°C the average flea heart rate increased by 99 beats/minute, while the heart beats changed by less (75 and 86 beats/minute) between the other temperatures.
	+ Between 5 and 15°C the average flea heart rate increased by 99 beats/minute, which is 9 more beats/minute than the next highest data point.
* ***Subtract 1/2 point for missing unit(s )for an otherwise correct answer.***
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| 1. Data Evaluation (**2 points**)
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| * **1 point for explanation (Why)**
* **Students must capture the idea of:**
	+ - Increased reliability OR Increased Validity

*Acceptable responses include, but are not limited to:* * *The students run three trials because if they mess up on one and they don’t know, they might assume an incorrect conclusion, but if they do three trials, the students will be able to have more accurate data.*

*Unacceptable responses include, but are not limited to: (Key words without explanation)** *To increase validity.*
* *To demonstrate reliability.*
* **1 point for justification (How)**
	+ **Students must capture the idea that increasing trials improves data:**
		- Reduce outliers
		- Reduces chance for errors
		- Increases accuracy by creating an average
		- The more trials, the more you can demonstrate repeatability of experimental results

*Acceptable responses include, but are not limited to:* * *They can get the average of the three trials, and that average will help take out errors that were made during individual trials.*
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| 1. Data Evaluation (**3 points**)
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| * **1 point for a tool AND explanation.**
	+ Scale to measure the amount of salt for each container.
	+ Measuring spoon to measure the amount of salt for each container.
	+ **Subtract ½ point for missing explanation.**
* **1 point for a control, 1 point for correct explanation of that control (2 points max)**

*Acceptable responses include, but are not limited to:** + *Temperature*
	+ *If temperature continues to change, then that may be the variable that is affecting the heart rate.*
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| 1. Scientific Inquiry (**1 point**)
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| * **1 point for a scientifically valid question.**

A scientifically valid question:* + Could lead to the design of a testable experiment, and contains a clear IV and DV.
	+ Should not include an independent variable that has already been tested.
	+ Students **MUST** use “flea heart rate” as the dependent variable, as indicated by the question’s directions.

*Acceptable responses include, but are not limited to: (must have flea heart rate as the DV)** How does sunlight affect flea heart rate? Or what is the effect of sunlight on flea heart rate?
* How does pH affect flea heart rate? Or what is the effect of pH on flea heart rate?
* How does amount of food affect flea heart rate? Or what is the effect of amount of food on flea heart rate?
* How does flea size affect flea heart rate? Or what is the effect of flea size on flea heart rate?

*Unacceptable responses include, but are not limited to: (may or may not have flea heart rate as the DV)** How many types of water fleas have been discovered?
* What color are water fleas?
* Does the salinity of water affect fleas? (already tested).
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**9.1 SCIENCE OER SAMPLE RESPONSES**

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| 1. The student’s claim that flea heart rate is slower at lower temperatures is valid. As the water temperature decreases from 35 to 5 ºC, the average flea heart rate also decreases from 280 to 20 beats/minute. Because fleas are insects, and lack the internal functions to control heart rate, the average flea heart rate changes as temperature changes. ***[4 points]***
2. The largest change in flea heart rate occurred between 5 and 15°C. The average flea heart rate increased by 99 beats/minute between 5 and 15°C, while the heartbeats changed by less (75 and 86 beats/minute) between the 15 and 25°C and 25 and 30°C., respectively. ***[2 points]***
3. The students performed the procedure for three trials instead of one because this allowed them to take the average of the three trials, which gave them more reliable data. If the students had only performed one trial, the flea heart beat might have not been typical. For instance, at 5ºC, the flea heartbeat might have been 120 beats/minute. If the students had not performed two other trials, they might not have realized that this number is not correct, and that this particular flea was not like the average flea. ***[2 points]***
4. The students would need to find a scale to precisely measure the amount of salt that would be put into each container to change the salinity. ***[1 point]***

If students are going to change the amount of salt in the cup, one variable that should be controlled from the previous experiment is the temperature. Otherwise, even though students would be putting more salt in the cup, the temperature might still be causing the change in heart rate. ***[2 points]***1. How does pH affect flea heart rate?

How do pesticides in water affect flea heart rate?What is the effect of location (in water or on land) on flea heart rate?***[1 point for any of the above]***  |