Mathematics CFA

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| Pre-Instruction |
| 1. List the Standard. Underline the nouns (what students will know) and highlight the verbs (what student will do): |
| 5.NBT.2-Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10. |
| 2. Mathematical Practices |
| #1-Make sense and persevere in solving them #2-Reason abstractly and quantitatively#3-Construct viable arguments and critique the reasoning of others#6-Attent to precision#7-Look for and make use of structure |
| 3. I Can Statements – Put learning targets in student friendly terms. |
| I can explain patterns in the number of zeros when multiplying a number by a power of 10.I can use exponents to denote a whole number.I can multiply or divide by the powers of 10.I can place a decimal point in the proper position when a decimal is multiplied or divided by a power of 10.Depth of Knowledge of the standard (Highlight the Level of the Learning Target): Level 1 Recall; Level 2 – Skill/Concept; Level 3 – Strategic Thinking; Level 4 – Extended Thinking |
| 4. List the skills students need to know in order to begin this standard: |
| 1. What is a product?
2. What is meant by powers of 10?
3. Explain patterns in numbers of zeroes of a product.
4. Explain placement of decimal point after division/multiplication by a power of 10.
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| 5. What type of assessment am I going to write? [selected response (m/c, t/f, y/n, matching, fill in \_\_\_) **or** constructed response (**short:** word, phrase, sentence, single problem; **extended**: multi-step operations in math, problem solving)] List the assessment questions. |
| Constructive Response:1. Explain why the following multiplication and division problems by powers of 10 make sense.
* 366 x 10 = 366 x 101 = 3,660
* 3.66 x 10 x 10 = 3.66 x 102 = 366
* 366 x 10 x 10 x 10 = 366 x 103 = 366,000
1. How many 100’s are in 1,000,000?
2. The distance from Venus to the Sun is over 100,000,000 kilometers. What is the distance written in powers of 10?
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| 6. Scoring Guide  |
| **Exceeds Expectations:** Students answered 3 out of 3 correctly; more than one detailed explanation is provided. **Proficient:**  Students answered 3 out of 3 correct, with correct explanations.**Approaching Proficiency:** Students answered 2 out of 3 correctly.**Not Proficient:** Students answer less than 2 correctly. Little concept of standard.  |

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Power Standard: 5.NBT. 2

Directions: Construct your response to the following questions.

Constructive Response:

1. Explain why the following multiplication and division problems by powers of 10 make sense.

366 x 10 = 366 x 101 = 3,660

3.66 x 10 x 10 = 3.66 x 102 = 366

366 x 10 x 10 x 10 = 366 x 103 = 366,000

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2. How many 100’s are in 1,000,000?

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3.The distance from Venus to the Sun is over 100,000,000 kilometers. What is the distance written in powers of 10?

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Power Standard: 5.NBT.2-Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole number exponents to denote powers of 10.

Tracking Sheet

Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade: 5

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| Student | 1st Attempt | 2nd Attempt | 3rd Attempt |
| Not Proficient | Approaching Proficiency | Proficient | Exceeds Expectations | Not Proficient | Approaching Proficiency | Proficient | Exceeds Expectations | Not Proficient | Approaching Proficiency | Proficient | Exceeds Expectations |
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