Mathematics CFA

|  |
| --- |
| 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. |
| 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? |
| 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. |

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
2. How many 100’s are in 1,000,000?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |
| --- |
| 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. |