Coding the Alphabet　　　　　　　　*E016 scoring rubric*

Math Domain

☐ Number/Quantity	☐ Shape/Space	☑ Function/Pattern
☐ Chance/Data	☐ Arrangement	

Math Actions (possible weights: 0 through 4)

☐ 0 ☐ Modeling/Formulating	☐ 2 ☐ Manipulating/Transforming
☐ 2 ☐ Inferring/Drawing Conclusions	☐ 1 ☐ Communicating

Math Actions weights: Modeling/Formulating = 0, Manipulating/Transforming = 2, Inferring/Drawing Conclusions = 2, Communicating = 1

Math Big Ideas

☐ Scale	☐ Reference Frame	☑ Representation
☐ Continuity	☐ Boundedness	☐ Invariance/Symmetry
☐ Equivalence	☐ General/Particular	☐ Contradiction
☐ Use of Limits	☐ Approximation	☐ Other

The intent of this task is to have students demonstrate their ability to perform simple addition, as well as to weigh the effects of multiple solutions to a problem.

1a.　{COW} = 41　　　{DOG} = 26　　　{PIG} = 32　　　{LION} = 50

　　　　{DEER} = 32　　　{BEAR} = 26

b. One must find an animal name that is fairly long and that has some high-valued letters. One example is {RHINOCEROS} = (124); another is {HIPPOPOTAMUS} = 169.

2. There are six possible values for each letter, as shown on the following table:

O	N	T
0	5	7
1	4	6
2	3	5
3	2	4
4	1	3
5	0	2

Since **O** must have the same value in each use, there is only one solution, **O**=2,**N**=3,**T**=5 which gives nine as the value of **TOO**; this is a unique solution.

	partial level	**full level**
Modeling/ Formulating (weight: 0)		
Transforming/ Manipulating (weight: 2)	Correctly calculate the values of the given animal names.	Additionally, find an animal name with a value between 100 and 200, and correctly calculate this value.
Inferring/ Drawing Conclusions (weight: 2)	Find some of the possible solutions for **2a.**	Find all of the solutions to **2a** and recognize that adding an additional requirement leads to a unique solution of the problem.
Communicating (weight: 1)	Present calculations and answers in a clear form, but without showing details (sums of appropriate numbers) or an orderly pattern for listing the possibilities in **2**.	Present all calculations and answers in an organized and clear form, with supporting detail where appropriate.