Performance-Based Task

Name of Task: Hospital Help	Grade Level: 5

BEGIN WITH THE END IN MIND: What will we learn about the students' mathematical understanding from this task?

Student will learn to make budgetary decisions for a hospital decisions using mathematical reasoning and problem solving using decimals operations.

Common Core Content Standards assessed through this task: (choose 3-5 standards at your grade level that can be clearly assessed through this task. Standards need not be from the same domain but should relate to the task). 5.NBT.4,5,and7	**Standards for Mathematical Practice assessed through this task:** (choose 2-3 Standards for Mathematical Practice that can be clearly assessed through this task.) Student will Construct a viable argument, attend to precision and make sense of problems and persevere in solving them.

Performance-Based Task

Use the space below to outline your task. Keep the following in mind…

A three floor hospital has room for fifty patients per floor. Each patient must have access to a doctor, RN nurse and a nurses aid. A doctor can have no more than 25 patients. A RN nurse can have no more than 15 patients and a nurses aid (NA) can have no more than 8 patients. The doctors, RNs and nurses aids can go up or down only one floor to tend to patients. For example a RN can see patients on floor 2 and 3 but no other floors. A doctor can see patients on floor 5 and 6 but not 6 and 4. The staff cannot skip floors. Too much time is wasted on the stairs and patients may need help quickly. On a given day, a hospital has 128 patients. How can you best place the patients in the hospital? (How many on each floor)? Please assign each patient a doctor, RN and NA. How many staff members are needed for the hospital?

Extended- Hospitals are expensive places and have to keep their cost down. Try to maximize the amount of patients per hospital staff. A doctor is paid $150.00 per hour. A RN nurse is paid $35.00 per hour and a NA is paid $22.00. How much does it cost to pay the staff at the hospital? Can you see any way to cut cost in your hospital staff?

Helpful hint- You may consider labeling each doctor DR1,DR2,DR3 etc or using a color coded system to keep track of floor.

Assessment: How will you evaluate student work? Create a task-specific rubric. Apply the Exemplars levels– Novice, Apprentice, Practitioner, Expert – when creating your rubric.

Novice	There is no solution or solution has no relation to the task. No evident of strategy or procedure, or uses a strategy that does not help solves the problem. There are no use or inappropriate use of mathematical representations (ex- figures, diagrams, graphs, tables etc...)
Apprentice	The solution is not complete indicating that parts of the problem are not understood. Some evidence of mathematical reasoning. There is an incomplete explanation; it may not be clearly presented.
Practitioner	The solution shows that the student has a broad understanding of the problems and the major concepts necessary for its solutions. Uses a strategy that leads to a correct solution for the problem. There is a clear communication of the explanation.
Expert	The solution shows a deep understanding of the problem including the ability to identify the appropriate mathematical concepts and the information necessary for its solution. Uses a very efficient and sophisticated strategy leading directly to the solution. There is precise and appropriate use of mathematical terminology and notation.

NCTM Process Standards and the CCSS Mathematical Practices

NCTM Process Standards	CCSS Standards for Mathematical Practice
Problem Solving	1. Make sense of problems and persevere in solving them. 5. Use appropriate tools strategically.
Reasoning and Proof	2. Reason abstractly and quantitatively. 3. Critique the reasoning of others. 8. Look for and express regularity in repeated reasoning
Communication	3. Construct viable arguments
Connections	6. Attend to precision. 7. Look for and make use of structure
Representations	4. Model with mathematics.