

DOGGIE TIME

Performance Standard (8B/8D).C

Represent a pattern using a table, pictograph and Unifix cubes and make predictions based on these representations:

Mathematical knowledge: Construct representations of data correctly;

Strategic knowledge: Use appropriate strategies to develop representations; and

Explanation: Explain completely what was done and why it was done.

Procedures

1. ***In order to interpret and describe numerical relationships using tables, graphs and symbols(8B), use algebraic concepts and procedures to represent and solve problems(8D)***, students should experience sufficient learning opportunities to develop the following:
 - Represent and analyze simple patterns and operations using words, tables, and graphs.
 - Describe situations with constant rates of change using words, tables and graphs (e.g. walking at a constant rate of speed).
 - Demonstrate how to select and use an appropriate operation to solve problems involving patterns.
 - Solve one-step linear equations using concrete materials.
2. Have students review and discuss the assessment task and how the rubric will be used to evaluate their work.
3. Place 30 unifix cubes in a plastic bag for each child.
4. Hand out bags to each child.
5. Hand out Student Recording Sheets
6. Explain to the students that they will be expected to do both paper/pencil and concrete manipulations in order to solve the problem.
7. Direct students that both written and oral explanations of work done should accompany the task.
8. Read the problem to any student who may need that type of assistance.
9. Evaluate student work using all three sections of rubric. Check ***Mathematical Knowledge*** by assessing both the Student Recording Sheet for accurate answers and viewing the pictures (either photographs or video taped) for correct calculations, pictograph representation, and manipulation of unifix cubes. Check ***Strategic Knowledge*** by observing how students arrived at each of their tables and graphs. Check the ***Explanation*** portion by having students explain what they did to accomplish each part of this task (This may be done either orally or in written form.).
 - A score of **4** means that a student has done all work correctly, shown the correct manipulation of the unifix cubes, recorded all answers correctly, and provided an accurate and complete explanation of what was done and why the answer is correct.
 - A score of **3** in ***Mathematical or Strategic Knowledge*** indicates that the student may have a minor calculation, manipulation or recording error. A score of **3** in ***Explanation*** indicates that the student explained what was done and why but may have left some parts of the explanation unclear or not fully explained the “why”.
 - A score of **2** in ***Mathematical or Strategic Knowledge*** indicates that the student may have made major calculation, manipulation, or recording errors. A score of **2** in ***Explanation*** indicates that a student explained what was done or why, but not both.
 - A score of **1** in ***Mathematical or Strategic Knowledge*** indicates that the student attempted to accomplish the task but major errors happened in all areas. A Score of **1** in ***Explanation*** indicates that major errors were made in the explanation or that the explanation does not match the work that was done.
 - A score of **0** in any area indicates that the student made no attempt to complete the task.

Examples of Student Work not available

Resources

Time Requirements

- One class period

- Plastic storage bags
- Unifix cubes
- Copies of the Student Recording Sheet
- Camera for recording manipulation of unifix cubes
- Mathematics Rubric

NAME _____ DATE _____

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Student Recording Sheet

Students: Read the story below very carefully. If you have any questions, be sure to ask your teacher. Your answer will need to be shown three ways, as a table, as a pictograph, and using your unifix cubes. When you have finished each part be sure to explain everything you did and why you think your answer is correct.

On Sunday, a dog buries three bones in its back yard. On Monday, it buries three more bones. By Tuesday, the dog had buried nine bones. If this trend continues, how many bones will the dog bury by Saturday?

Answer: By Saturday, the dog will bury _____ bones.

Part A:

Make a table using words and numbers to prove your answer.

I know this table is correct because _____

Part B: Make a pictograph proving your answer is correct.

2. A dog buried a total of 24 bones. He took eight days to bury all of his bones. He buried the same number of bones each day. How many bones did he bury each day? He buried _____ bones each day.

I know my answer is correct because _____

3. A dog buried 3 bones each day for 9 days. How many bones did he bury in all? Use unifix cubes to prove your answer.
The dog buried _____ bones in all.

I know my answer is correct because _____
