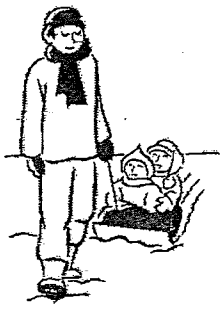
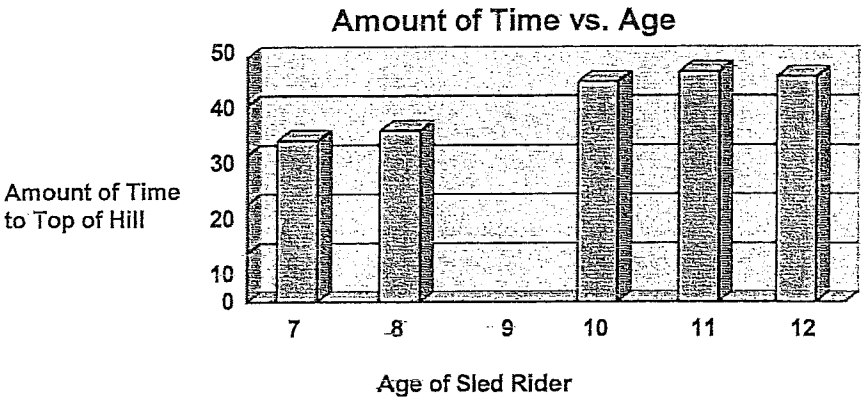
SLEDDING

CER: Analyze and explain how Newton's Laws describe changes in an object's motion.

Essential Question How does Newton's second law affect the motion of an object?





A student comes up with an idea to make some extra money during a snow day. All the neighborhood kids are outside sledding. The student offers to pull the students to the top of the hill for one dollar per ride. The student notices that it was taking more time to pull some student to the top then it was other students even though he was pulling with the same force. He decides to start timing how long it takes to pull each kid and see if there was a pattern based on their age.

Explain why some kids took longer to pull to the top of the hill then other kids despite pulling with the same force. In your response, be sure to include:

- the pattern of the data including any exceptions to the trend.
- the role of Newton's second law in it taking longer to pull some kids.
- a prediction of how long it would take to pull the ten and twelve year olds if they were on the same sled.

Be sure to consider the completeness of your response, supporting details, and accurate use of terms. (claim, evidence, reasoning)