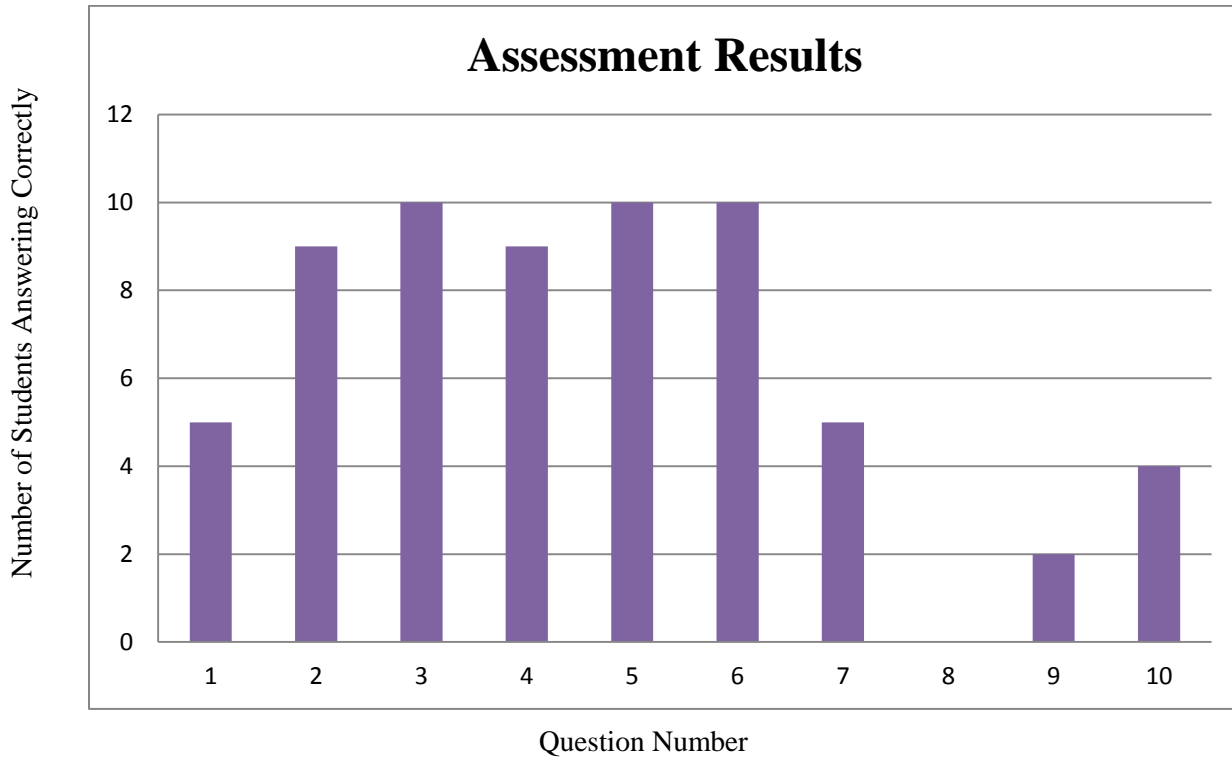


Assessment Assignment

Rachael Sloan

SMART Goal: 80% of my students will score at least 80% (8 out of 10 correct) on the first grade ten-question verbal response assessment about force, motion, and energy at the end of the unit.



This assessment was written for a force, motion, and energy unit (SOL 1.2) in first grade. The assessment was designed to be orally administered using a toy car, paper clips, and a rubber band in various parts of the assessment, as shown on the question sheet and answer record sheet. The answer record is intended to judge whether students used the appropriate vocabulary, which is used throughout the unit, to describe the force, motion, and energy concepts that were taught.

The assessment was administered to ten college students between the ages of 19 and 21. Four males and six females took the assessment. One of the male students is African American; the other nine students are Caucasian.

Unfortunately, my students did not meet the SMART goal, although that was not very surprising, considering that they did not know what vocabulary I expected them to use in order to receive points. Only 3 students (30%) received a score of 8 out of 10, or 80%, on the assessment. The median score was 7; the mean score was 6.7. The lowest score was 4, and the highest score was 8. One student received a 40%, and three students each received 60%, 70%, and 80% on the assessment.

The assessment is divided into three parts, which correspond with parts a, b, and c on SOL 1.2. In the first part, the questions involve the use of the toy car and elicit student responses using the vocabulary words force, push, and pull, as well as demonstrating understanding of measuring distance in non-standard units. Half of my students missed the first question because they did not use the word force in describing how far the car would travel; this made me think that this question should probably be re-written. However, most or all students answered questions two through six correctly, so I think they were fairly straightforward.

In the second section, students were given an example of an object and asked to tell what direction of motion it had. The SOL specifies that students should know the three directions of motion, including back-and-forth, straight, and circular. Eight of my students answered number seven correctly; it asked about the direction of motion of a swing, and the answer was “back-and-forth.” However, only five of the students used the words, “back-and-forth;” the other three said, “forward and backward,” but I decided to give them credit for that, even though it was not the exact vocabulary word. The students who missed that question answered, “pendulum” and “left and right.” Question eight asked for the direction of motion of the toy car used in the earlier problems, and the answer was “straight.” However, none of my students answered it correctly. Some of their answers, which were recorded for the purposes of this analysis, included, “forward,” “forward and backward,” “left and right,” and “back-and-forth.” The third question in this section asked for the direction of motion of hands on a clock; the answer is “circular.” Only two students answered this question correctly, although one said “a circle” and I decided to accept it. The other eight students gave answers including “right,” “clockwise,” “forward,” and “around and

around.” Five of the students said, “clockwise,” but I think this error cannot be generalized to all test-takers, since I would be surprised if my first grade students used that work in describing the motion, especially if I have not taught it.

The last section consisted of one question about sound and vibration. As I stretched and plucked a rubber band, I asked the student about its movement and why it made a sound. Four students included the vocabulary word “vibration” (or a form of that word) in their answer; however, the other six students gave answers about the rubber band moving and hitting the air, and one student stated that sound is not caused by vibrations, which is contrary to the curriculum framework’s essential knowledge, which states that “vibrations may cause sounds.” I believe that more students would have answered this question correctly if they had been exposed to the topic more through the unit, since I specifically wanted them to say the word “vibration.”

As I gave this assessment, I thought about whether or not it was truly valid. I do think it is useful to assess whether or not students are able to use the vocabulary from the unit; however, I am not sure that it is truly measuring the students’ learning, especially since I have such a high percentage of English language learners in my class. Their ability to use the correct vocabulary words is important, but I think it is more important to assess whether the students understand the motions and reasons behind the actions. In addition, I realized that using a ten-question assessment, in which each part of the SOL is only addressed in one or two questions, is probably not a fair way to assess the students’ learning. It might be better to have more tasks in order to truly gauge student learning. For these reasons, I may decide to change the assessment before using it in my student teaching placement. Nevertheless, this assignment was a valuable experience in understanding the writing and administration of assessments and their use and analysis.

Force, Motion, and Energy Pre-Assessment/Post-Assessment Student Question Sheet

Part One: Toy Car

- 1) How far do you think this car will go if we push it just a little? What if we push it harder? Why?
- 2) (Push softly) How did I make the car move? What is the name of that action?
- 3) (Push harder) Did the car move more or less than last time?
- 4) What was different about this push?
- 5) (Pull softly) How did I make the car move? What was the name of that action?
- 6) (Give paper clips to student) I want you to use the clips to measure how far the car travels. Ready? (Place first clip next to toy car, then push car softly) How far did it move?

Part Two: Directions of Movement

- 7) Think about a swing. What direction of motion does it have?
- 8) Think about the car we just pushed. What direction of motion did it have?
- 9) Think about the hands on a clock. What direction of motion do they have?

Part Three: Vibration

- 10) (Pluck rubber band) What happens when I pluck the rubber band? (if further prompting needed) Did you hear anything? What? Why did it make a sound?
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Student Answer Record

Student name: _____

Part One: Toy Car

- 1) Student uses the word *force* in describing the distance the car travels
- 2) Student uses the word *push* in describing movement
- 3) Student correctly identifies the car as moving *more* or *farther*
- 4) Student identifies reason as because there was *more force* or because the car was *pushed harder*
- 5) Student uses the word *pull* in describing movement
- 6) Student correctly measures distance of car's movement *within one paperclip length*

Part Two: Directions of Movement

- 7) Student uses the words *back-and-forth*
- 8) Student uses the word *straight*
- 9) Student uses the word *circular*

Part Three: Vibration

- 10) Student correctly identifies rubber band's movement as a *vibration*; (if student says *back-and-forth*, ask student for specific name of very fast back-and-forth motion)