

# ASPECT

Assessing Students' Progress on the Energy Concept

## Aluminum Bottles Task: AP44-6

### Summary of Student Performance

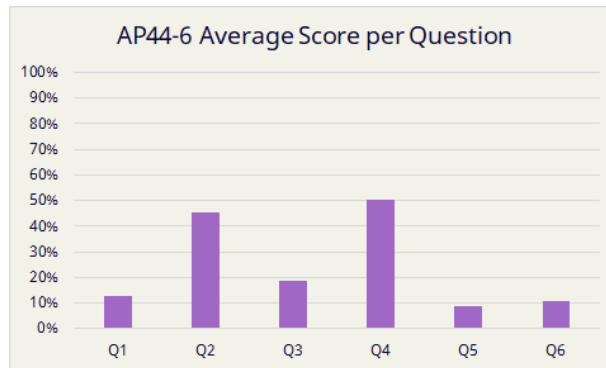
#### FIELD TEST

This task was administered to students during field tests conducted in the spring of 2021 and 2022. In 2021, over 2,300 students in grades 4 through 12 in the classrooms of 50 teachers from 27 states across the U.S. participated in the field testing. In 2022, over 1,500 students in grades 4 through 12 in the classrooms of 44 teachers from 16 states and Puerto Rico participated.

The data presented here are from the 281 students who responded to the task. Approximately 13% of the students were in elementary school, 37% were in middle school, and 49% were in high school. The graphs below present the mean percent correct for students in different categories. The percent correct was determined by summing the points earned on each question and dividing by the total possible points for the question. Students self-identified their gender and whether English was their primary language.

*The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305A180512 to BSCS Science Learning. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education.*

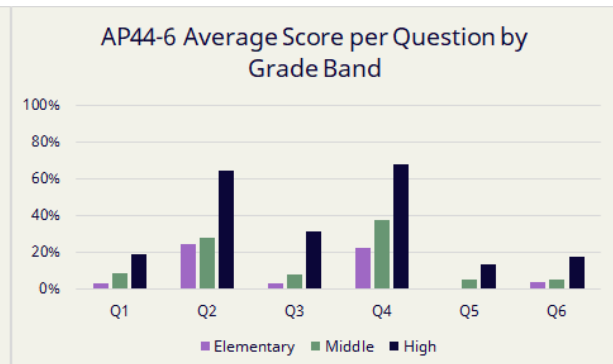
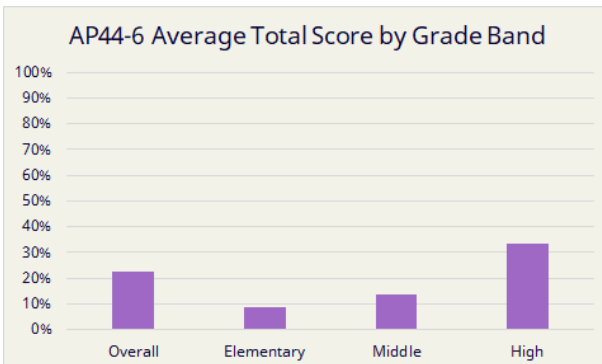
## OVERALL PERFORMANCE



Performance	# of students	Q1	Q2	Q3	Q4	Q5	Q6	Total*
Overall	281	13%	45%	19%	50%	9%	11%	23%

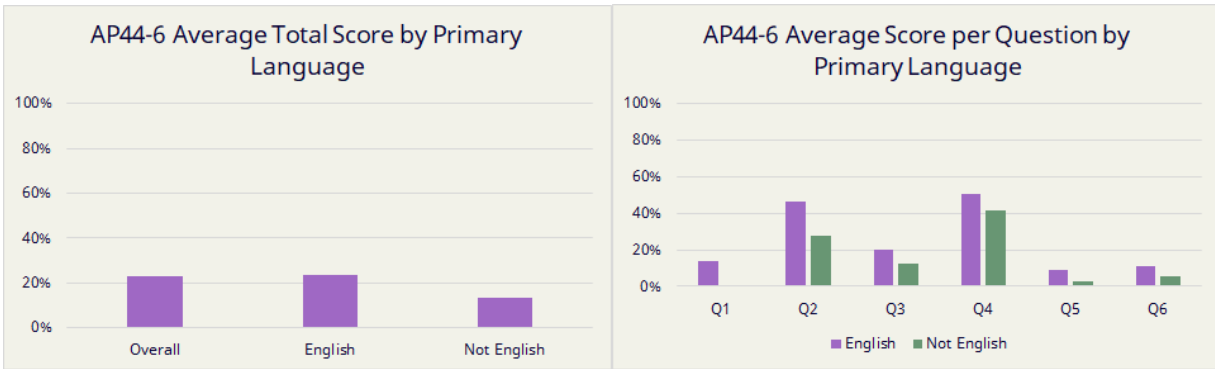
\*Total percentage was calculated by adding the number of points earned across the questions divided by the total number of points available. (Note that some questions had more points than others.)

## PERFORMANCE BY GRADE BAND



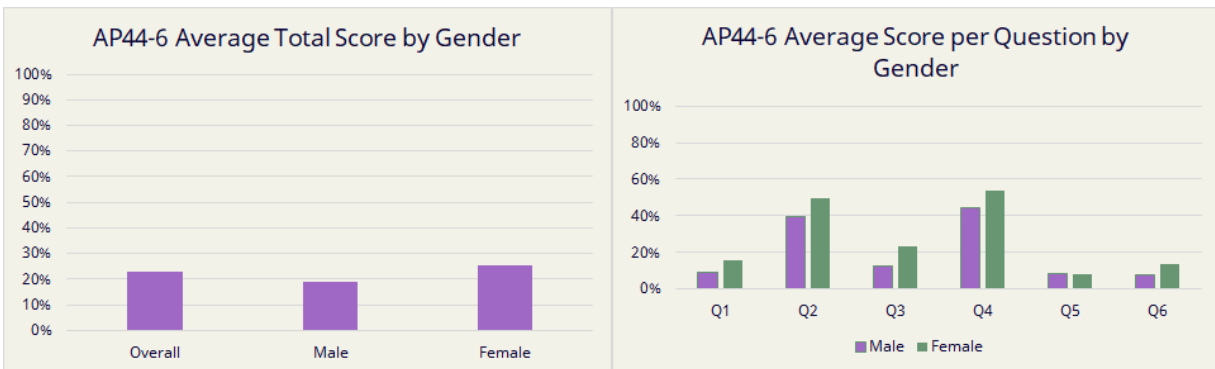
Grade Band	# of students	Q1	Q2	Q3	Q4	Q5	Q6	Total
Elementary	36	3%	24%	3%	22%	0%	4%	9%
Middle	105	9%	28%	8%	37%	5%	5%	13%
High	139	19%	64%	31%	68%	13%	17%	33%

## PERFORMANCE BY PRIMARY LANGUAGE



Primary Language	# of students	Q1	Q2	Q3	Q4	Q5	Q6	Total
English	256	14%	47%	20%	51%	9%	11%	23%
Not English	12	0%	28%	13%	42%	3%	6%	13%

## PERFORMANCE BY GENDER



Gender	# of students	Q1	Q2	Q3	Q4	Q5	Q6	Total
Male	124	9%	39%	13%	44%	9%	8%	19%
Female	127	16%	50%	24%	54%	8%	14%	25%