# Grade 8: Candle Burning

**8.SP.A.3** - Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.

A candle has been burning for several hours. The length of the candle was measured four times. The measurements are shown on the scatter plot.

Dominick uses the function

$L = 12.55 - 2.275t$

to model the relationship between candle length, $L$, in inches and elapsed time $t$, in hours.

**Length of a Burning Candle Over Time**

$y = 12.55 - 2.275x$

Length (Inches) vs Elapsed Time (Hours)
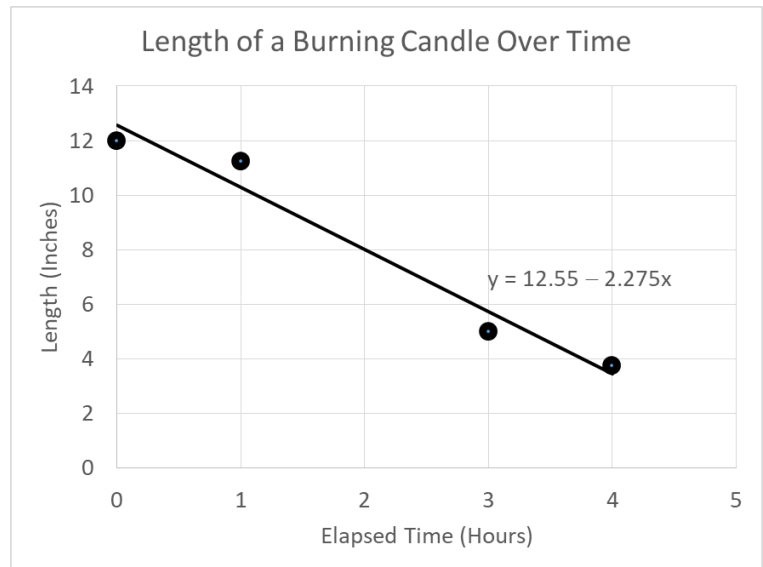
Write a number that makes an accurate statement about Dominick's model.

**According to the model, the length of the candle decreases by _____ inches every hour.**

Answer: ☐

## Solution

Correct if student writes 2.275.

In the function L = 12.55 – 2.275t, the coefficient -2.275 tells that an increase in time of 1 hour corresponds to a decrease in length of 2.275 inches. So according to the model, the length of the candle decreases by 2.275 inches every hour.

In the observed data, the length of the candle decreases at a varying rate—sometimes faster, sometimes slower. But in the model, the candle decreases at a constant rate. The model is an idealization of the observed data.

## Learn More

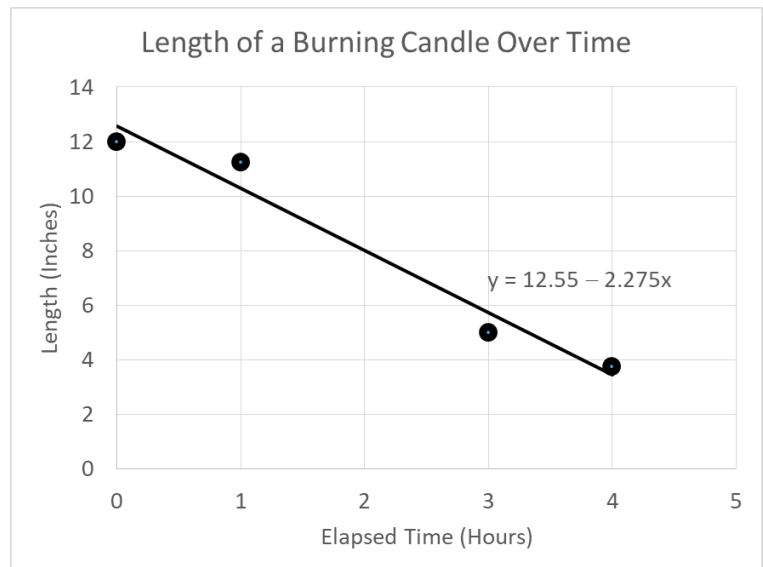See a digital version of this task at Learning Heroes' Readiness Check:
https://bealearninghero.org/readiness-check

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