

Focus
Standards
and Claim

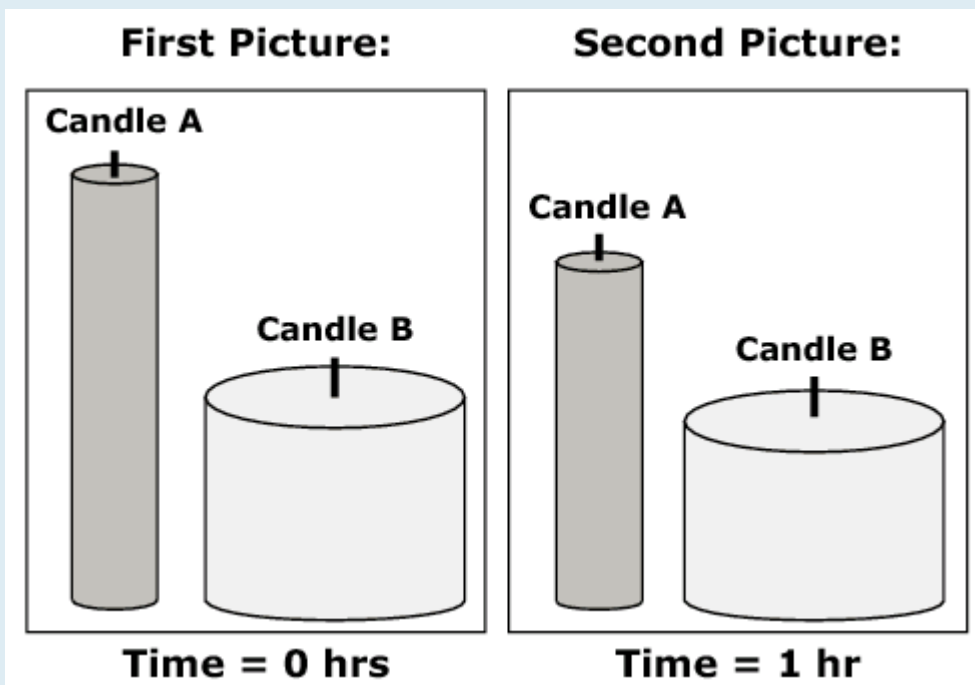
Claim 4
8.F.B

Stimulus

Lights, Candles, Action!

Your friend Abbie is making a movie. She is filming a fancy dinner scene and she has two types of candles on the table. She wants to determine how long the candles will last.

She takes a picture, lights the candles, and then lets them burn for 1 hour. She then takes a second picture. You can assume that each candle burns at its own constant rate.



Candle Type A initial height = 20 cm

Candle Type B initial height = 10 cm

Candle Type A height after burning for 1 hour = 16 cm

Candle Type B height after burning for 1 hour = 9 cm

You will use this information to help Abbie think about the candles she might use for her film.

Item Prompt

Now, choose either Candle A or Candle B to create an equation that will tell Abbie the height of the candle at t hours after it is lit.

Determine what the numerical values for k and n should be for the candle you chose.

Using these k and n values, write an equation that tells Abbie the height h of the candle, in cm, at t hours after it is lit.

Sample Responses

Sample Response A

$$h = (-1)t + 10$$

Sample Response B

$$20 = 8 + 4(3)$$

Sample Response C

$$t = \frac{-h_a + 20}{4}$$

Sample Response D

$$h_a = 20 - 4t$$

Sample Response E

$$h = 0 + 4t$$

Sample Response F

$$h = 10 - t$$

Sample
Response G

$$t = \frac{h - 10}{n}$$