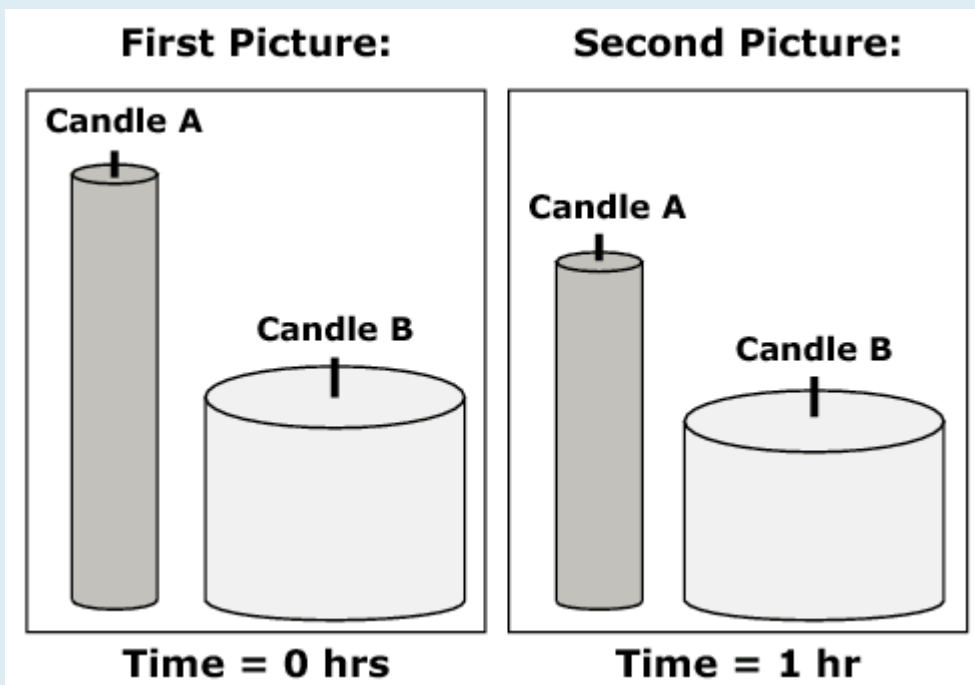| Focus Standards and Claim	Claim 4 FLE.B.5

| 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.

First Picture: Candle A, Candle B — Time = 0 hrs

Second Picture: Candle A, Candle B — Time = 1 hr

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.

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Item Prompt	For her next film, Abbie wants candles that will burn for exactly 8 hours. You want to give her a choice by designing two different candles (Type C and Type D).

Using the equation $h = k + nt$, determine two different pairs of values for k and n that will meet the requirement to burn down to a height of 0 cm in exactly 8 hours.

Complete the table to show two possible sets of values for **k** and **n** for your new candle designs.

	k	n
Candle Type C		
Candle Type D		

Sample Responses

Sample Response A		k	n
	Candle Type C	24	-3
	Candle Type D	16	-2

Sample Response B		k	n
	Candle Type C	-9	1
	Candle Type D	-16	2

Sample Response C		k	n
	Candle Type C	2	1
	Candle Type D	4	.5

Sample Response D		k	n
	Candle Type C	8	-1
	Candle Type D	8	1

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Sample Response E

	k	n
Candle Type C	8	-1
Candle Type D	16	-2

Sample Response F

	k	n
Candle Type C	2	16
Candle Type D	4	32

Sample Response G

	k	n
Candle Type C	40	5
Candle Type D	8	-1

Sample Response H

	k	n
Candle Type C	8	-1
Candle Type D	10	-1.25

Sample Response I

	k	n
Candle Type C	24	3
Candle Type D	40	5