

Lights! Camera! Proportion!

Desha L. Williams

In DreamWorks’s movie *Monster vs Aliens*, Susan is hit by a meteorite that causes her to grow to monstrous heights. In the movie, she and her fellow monsters defend the United States against aliens that are trying to take over Earth. Clips from this movie can motivate students to think about scale factor, proportionality, rate of change, and percent of increase.

PROBLEMS

1. Assume that Susan and the General (another character in the movie) have the same proportions. The General is 6 feet tall, and his head is 8 $\frac{1}{2}$ inches tall. Susan’s head is 36 $\frac{3}{4}$ inches tall. How tall is Susan? Round to the nearest foot.
2. What scale factor would you use to multiply by Susan’s height to find the General’s height, if we did not already know it?
3. a. Do you think Susan or the Empire State Building is taller? Explain your reasoning.

b. Calculate how many times taller the Empire State Building is than Susan.
4. Susan was originally 5 ft. 5 in. tall. What is the percent of increase of her new monstrous height?
5. Susan’s growth occurred in 2 minutes. What is the rate of change for Susan’s height in feet per minute?

Edited by **Erik Tillema**, etillema@iupui.edu, who teaches at Indiana University in Indianapolis. Readers are encouraged to submit manuscripts through <http://mtms.msubmit.net>.



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