

## Creating Relationships Between Proportional Quantities (Slides 12-20)

### **Resource Video 2**

The second half of the photo problem has students focus on the changes in the height and in the width. Students are asked to find the increase in the height of a photo given that they know the increase in the width of the photo. Students will likely use the formula they've developed in the first half of the activity to find the specific heights and subtract them to find the increase. The second question doesn't give students this option – here, students are only given the increase in width, not any specific widths themselves. They must find a way to calculate the increase in height from only the change in width. If students struggle with this problem, you may want to point them back to the prior one, when they were given actual widths. Ask students how they might have been able to find the answer there had they been given only the change in width. Giving students specific values may help them to begin to generalize.

Students should eventually begin to realize that the constant multiple between the changes in the quantities is the same as the constant multiple between the quantities themselves. Push students to explain why this is the case and why it makes sense that they should be the same. The use of the formula, table, and graph developed in the first half of the worksheet can be very useful in helping students reason about this. Again, the slides and animations on the PowerPoint may be very useful to use in a whole class discussion.

Recall that the goal of this activity is to build students conception of proportionality and tie it to constant rate of change. Be sure to keep this in mind throughout the worksheet as you hold small group and class discussions with the students.