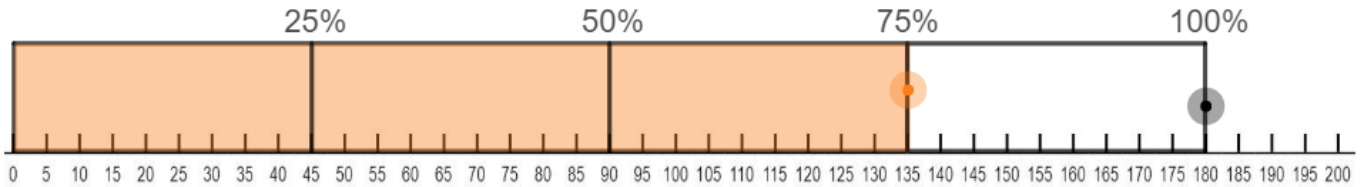


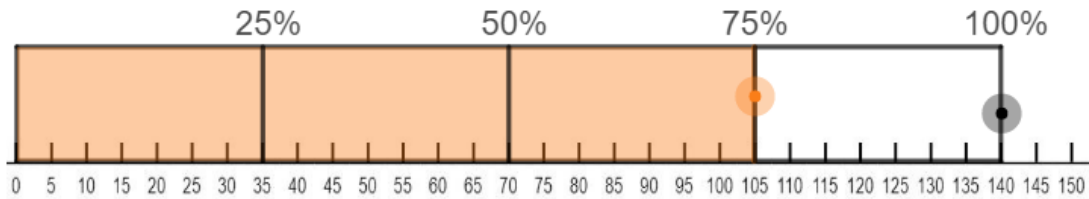
6. If 180 people were surveyed and 135 of them said they watch more than 3 hours of tv a day, what percent of people said they watch more than 3 hours of tv a day?

Try modeling this on the flexible model. If you set the whole to 180 and the shaded part to 135, you can see that 135 is 75% of 180.



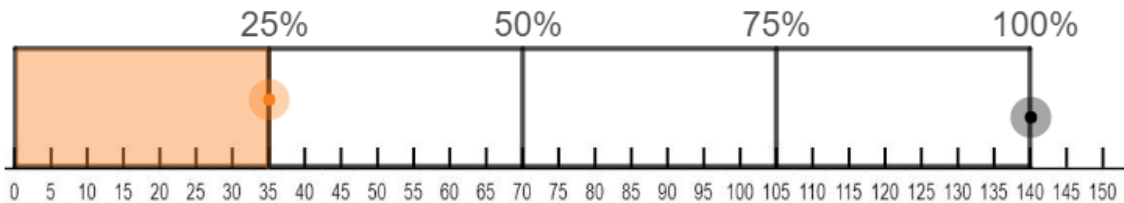
7. Imagine you want to buy something that costs \$140 and you have a coupon for 25% off. Can you use the model to figure out how much you will pay? (Hint: Try making the whole \$140 and moving the orange dot to 100%, then go back by 25%.)

The model shows that when you take 25% off \$140, you get \$105. (Can you see that taking 25% off leaves 75%?)



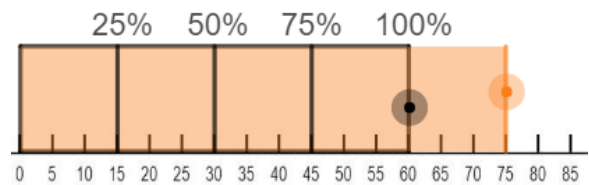
8. What if the store is having a clearance sale and the thing that cost \$140 is 75% off (but you can't use your coupon)? How much will it cost then?

When you take 75% off \$140, 25% is left. The item will cost \$35.



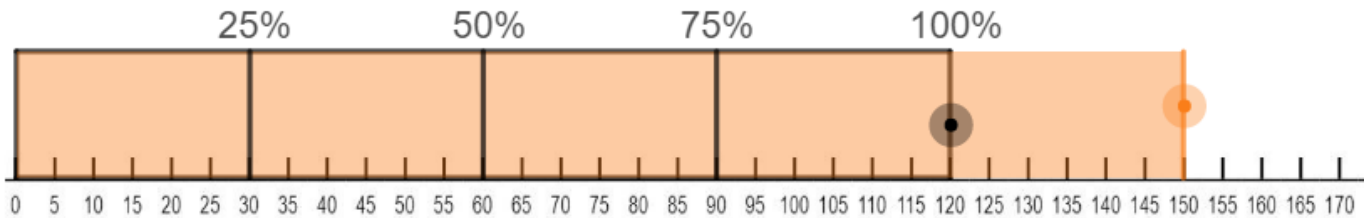
9. Imagine you own a store and you want to raise the prices by 25%. If something costs \$60 now, how much will it cost after you raise the price?

In this model, the whole is \$60 because that's the original price of the item. Look at 25%. It's \$15. Raising the price by 25% means raising it by \$15. Notice that the piece that's added on is the same size as each of the four blocks. The item will cost \$75.



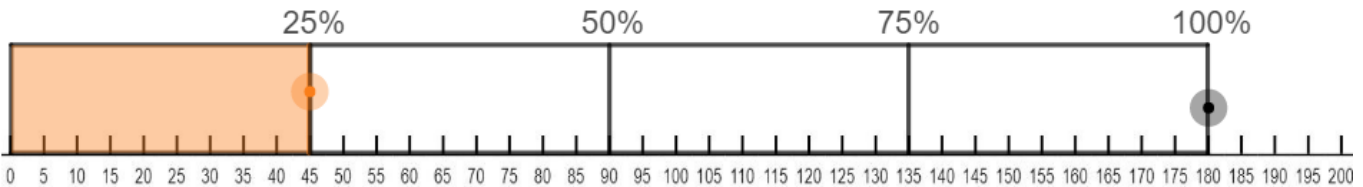
**10. If the price of something is \$150 after it has been increased by 25%, what was the price before it was increased?**

Look at the model below. The shaded part is set to \$150. Putting the whole at \$120 makes the extra shaded part the same size as the other four blocks, so the original cost was \$120. You can check by looking at 25% of \$120 and adding it on to \$120.

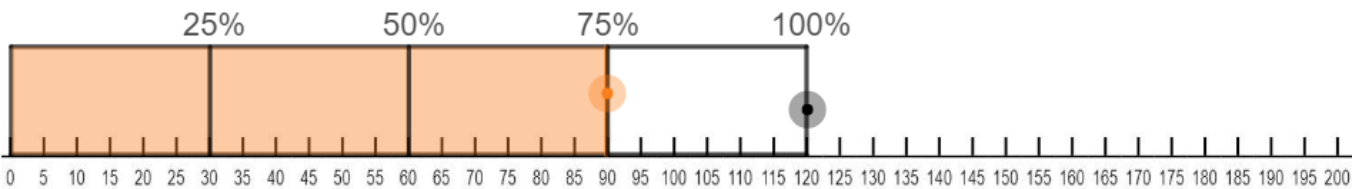


**11. Which is more: 25% of 180 or 75% of 120? Try to guess first and then use the model to see if you were right.**

This model shows 25% of 180 which is 45:



This model shows 75% of 120 which is 90:



75% of 120 is bigger.

**Estimation challenges:** (You might have estimated differently. If your answers are close to these, you did fine!)

**12. About how much is 25% of 143?** You might think of 143 as being close to 140. Half of 140 is 70 and half of 70 is 35. So 25% of 143 is about 35. Since 143 is a little bigger than 140, 25% of it is a little bigger than 35.

**13. About how much is 75% of 175?** 175 is a little less than 180. To find 75% of 180, you could find 25% of it and then multiply it by 3. 25% of 180 is 45, so 75% of 180 is 135. 75% of 175 is a little less than 135.

**14. If 14 out of 20 people in a room are wearing glasses, what percent is that close to? Is it more or less than that percent?** 15 out of 20 is 75%, so 14 is a little less than 75% of 20.

**15. If 23% of a number is 15, about how big is the number?** 23% is a little less than 25%. If 25% is 15, then the whole is 60. If 23% of the number is 15, then the number is a little bigger than 60.