These questions are to accompany the GeoGebra Applet "Fraction Gadget: Common Denominators".

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Given:

- This gadget has to do with finding common denominators, which is especially helpful for comparing, adding, and subtracting fractions.
- The top green bar is a representation of all proper fractions whose denominator is [whatever value you set for Denominator1]. By changing the value of Denominator1, you can break the bar into equal parts of another size.
- The top blue bar does the same, but depends on the value you set for Denominator2.
- The second green bar shows the same thing as the first, but you can subdivide each part into smaller pieces. How many? You choose this via Subdivisions1.
- The second blue bar behaves similarly.

Questions:

1. Let's consider two fractions: 2/3, and 5/8. It may not be immediately obvious which is the larger. Let's use the bars above to get some insight. Please use the Denominator sliders to represent thirds in green and eighths in blue. Find 2/3 and 5/8 on the top two bars. How do they compare?

   Maybe you can see which one is larger, but that may not help you convince someone else who can't see your screen. Also, when it's just you and your brain (no GeoGebra Applet!), you've got a similar problem. In order to make the comparison easier to verbalize, it helps if we have the same size pieces.

2. Please use the Subdivisions sliders to make all the dividers line up on the bottom pair of bars. (Can you do this in more than one way?) Note whatever strategies you use. Please fill in the blanks below:

   "The green bar is broken into three big parts. Each of these big parts is broken into _____ little pieces. Taking all this into account, the green bar consists of _____ little pieces. Each of these little pieces is called one _____ of the whole green bar. The fraction 2/3 consists of _____ of these pieces, and is therefore equivalent to the fraction _____."

   "The blue bar is broken into _____ big parts. Each of these big parts is broken into _____ little pieces. Taking all this into account, the blue bar consists of _____ little pieces. Each of these little pieces is called one _____ of the whole blue bar. The fraction 5/8 consists of _____ of these pieces, and is therefore equivalent to the fraction _____."

3. Can we now compare 2/3 and 5/8 verbally?