**Sharing Pencils**



Sarah and Michelle are working on a project and they are using colored pencils.

The ratio of Sarah’s colored pencils to Michelle’s colored pencils is 7 to 3.

Sarah gives Michelle 14 pencils so that they have the same number of colored pencils.

How many pencils do Sarah and Michelle each have now?

* **Be sure to show a visual model of your thinking**
* **Try to show at least TWO different strategies**
* **Be prepared to explain and defend your work to your classmates**
* **Don’t give up!**

One possible solution strategy:

**(this is a visual representation of the 7:3 ratio)**

Sarah’s pencils:

Michelle’s pencils:

**Then…some of the boxes move to show that they now have the SAME number of pencils…**

Sarah’s pencils:

Michelle’s pencils:

AND…we know that Sarah gave Michelle 14 pencils, so that means that each of the red boxes must represent 7 pencils. This further means that EACH of the boxes must represent 7 pencils, since the original diagram showed the boxes representing the ratio of Sarah’s pencils to Michelle’s pencils.

Sarah’s pencils:

Michelle’s pencils:

7

7

7

7

7

Therefore, Sarah and Michelle must now have 35 pencils each.

To check, let’s see if it works to plug “7” into the original diagram:

Sarah’s pencils:

= 49 pencils

7

7

7

7

7

7

7

Michelle’s pencils:

= 21 pencils

7

7

7

If Sarah gives Michelle 14 pencils, then 49 – 14 = 35. Michelle would now have 21 + 14, or 35 pencils ☺\_