Patterning with Deci-Blocks™

1. Make the following pattern with your blocks:

   - **red, red, blue, green, red, red, blue, green,...**

   When there are 14 blue blocks, how many green blocks will there be?

   How many red blocks?

   Organize your work so that you can explain your solution to the rest of the class.

   When there are 30 red blocks, how many blue blocks will there be?

   When there are 12 green blocks, how many blocks will there be altogether?

2. Make a pattern with red, blue and green blocks that obeys all of the following rules:

   - **the pattern repeats after 5 blocks;**
   - **when there are 15 blocks there are 3 red blocks;**
   - **when there are 9 red blocks there are 18 blue blocks.**

3. Line up the following pattern blocks:

   - **1 yellow hexagon, 1 blue rhombus, 1 red trapezoid, 1 green triangle.**

   How many ways are there to line up these 4 pattern blocks?

   Rearrange the 4 blocks and record the new arrangement.

   Find all possible "color orders" for these 4 blocks.

   How can you be sure that you have found all possible ways?

   If you add the orange square, how many ways would you predict there are to order 5 different blocks?