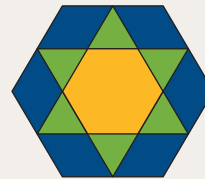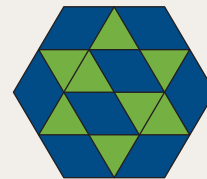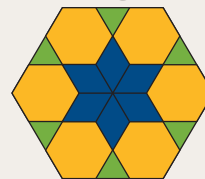Nathan makes mosaics to sell at a market. A mosaic is an arrangement of small tiles. He has three standard designs, as shown.

At the market, a customer places an order for a set of four mosaics. The customer is happy for Nathan to choose the number of designs to make up the set of four.

The cost of each mosaic depends on the color of tiles he uses. Nathan tells the customer that yellow hexagon tiles are the most expensive. The customer tells Nathan that she would like him to use some yellow hexagon tiles but does not want the set of four mosaics to be too expensive.

Design 1

Design 3

Design 2

a. Choose the number of each design Nathan should include in the set. Then figure out the number of each color tile he will need.

b. Explain how you decided the number of each design to be included in the set.

Share another real-world situation where you could use the same thinking.