4-2: Learning Goals

- Let's figure out unknown weights on balanced hangers.

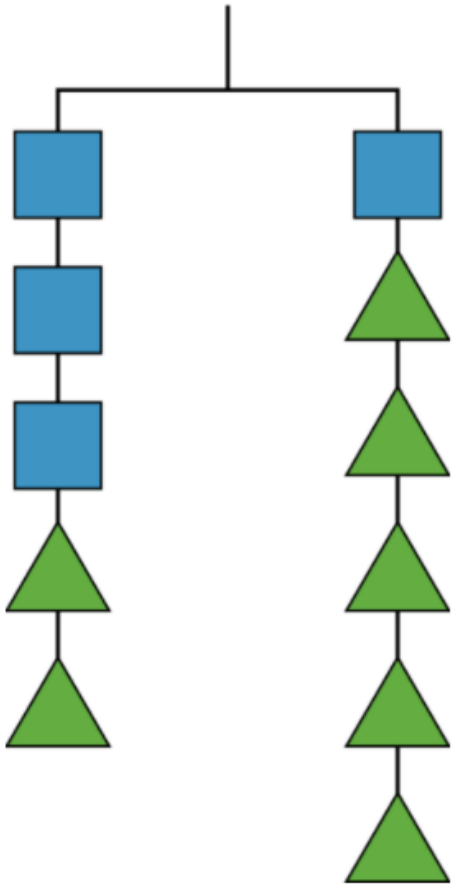
4-2-1: Hanging Socks

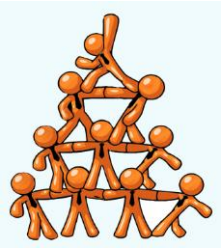
4-2-2: Hanging Blocks

This picture represents a hanger that is balanced because the weight on each side is the same.

1. Elena takes two triangles off of the left side and three triangles off of the right side. Will the hanger still be in balance, or will it tip to one side? Which side? Explain how you know.

2. If a triangle weighs 1 gram, how much does a square weigh?



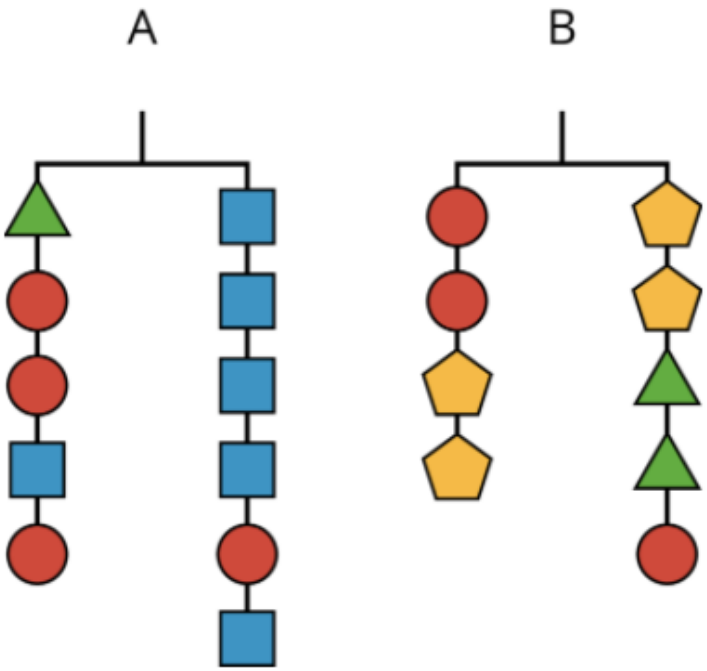


4-2-3: More Hanging Blocks

A triangle weighs 3 grams and a circle weighs 6 grams.

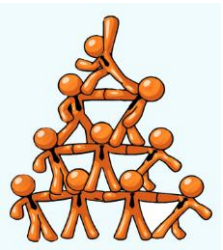
1. Find the weight of a square in Hanger A and the weight of a pentagon in Hanger B.

2. Write an equation to represent each hanger.



4-2: Lesson Synthesis

- In the warm-up we wondered why one hanger was slanted, whether there were weights in one blue sock that made it heavier than the other, whether the crooked hanger would straighten out if another sock was added to the other side (add any other pertinent things your students wondered). How would you answer these questions now?
- What is an equation? What does the equal sign in an equation tell you?
- What features do balanced hangers and equations have in common?
- You saw an example of a hanger where the unknown weight could not be determined. Can you design your own hanger like this one? How would you think about the weights needed on each side?



4-2: Learning Targets

- I can represent balanced hangers with equations.
- I can add or remove blocks from a hanger and keep the hanger balanced.

4-2-4: Changing Blocks

Here is a hanger that is in balance. We don't know how much any of its shapes weigh. How could you change the number of shapes on it, but keep it in balance? Describe in words or draw a new diagram.