Heart Muscle Challenge (Game - STEM)

Purpose: Students learn the work of the heart from a very visual and active challenge. This is a great activity to use math skills.

Discussion: There is about 1.2 – 1.5 gallons of blood in an adult – about 7% of their total weight. The human heart moves about 1/4 cup of blood through the body with each beat. The heart beats about 72 times in one minute. This means that in one minute the heart will move a little more than 1 gallon of blood.

How to do the math: 72 x 1/4 = 18 cups. There are 16 cups in one gallon
18 / 16 = 1.125 or 1 and 1/8 gallon

Lesson: Pour one gallon of water from a milk jug into one dishpan for the group and discuss this is how much blood their heart pumps in one minute. See if students can move 1 gallon of water in 1 minute with a 1/4 cup.

Supplies: 2 Dish pans or buckets Empty Milk gallon for water 1/4 cup
Timer – Phone or watch Paper towels

Questions:

What surprised you the most about this demonstration game?

If the heart pumps 1 gallon in one minute, how many gallons are pumped in 1 hour? In one day? In one year?

1 gallon x 60 min/h = 60 gallons in an hour

60 gal/hour x 24 h/day = 86,400 gallons a day

86,400 gal/day x 365 days/year = 31,536,000 gallons in a year