Name _____   Period _____

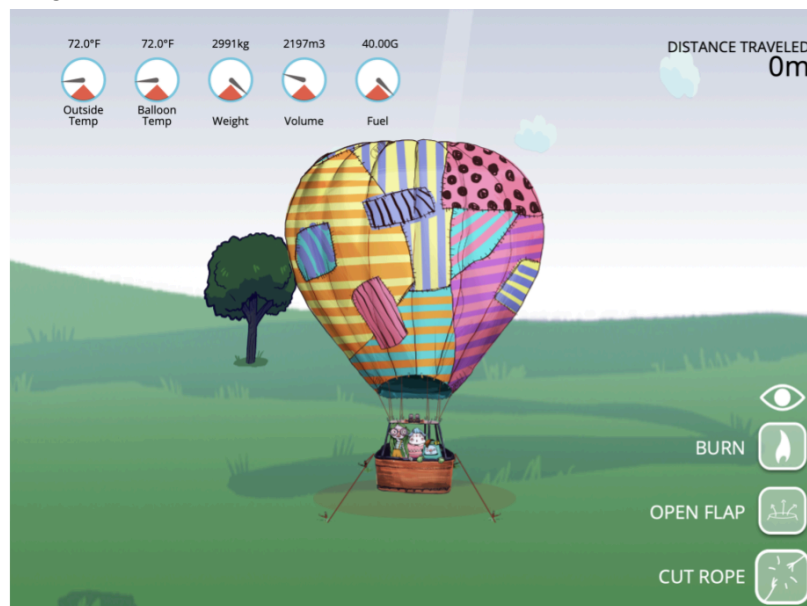**https://www.brainpop.com/games/hotairballoon/**

Research-
- **Part 1- Particles.** Open the "particles" button and follow the prompts to learn about what happens to particles in a hot air balloon.
- **Part 2- Density**. Open the "density" button and follow the prompts to learn about how density affects the balloon.

Round 1- Standard game

1) Select "standard" from the game menu
   a) Notice the gauges in the upper left corner- outside temp, balloon temp, weight,volume, and fuel

   b) Notice the "distance traveled" in the upper right corner
   c) Notice the burn, open flap, and cut rope icons in the lower right corner
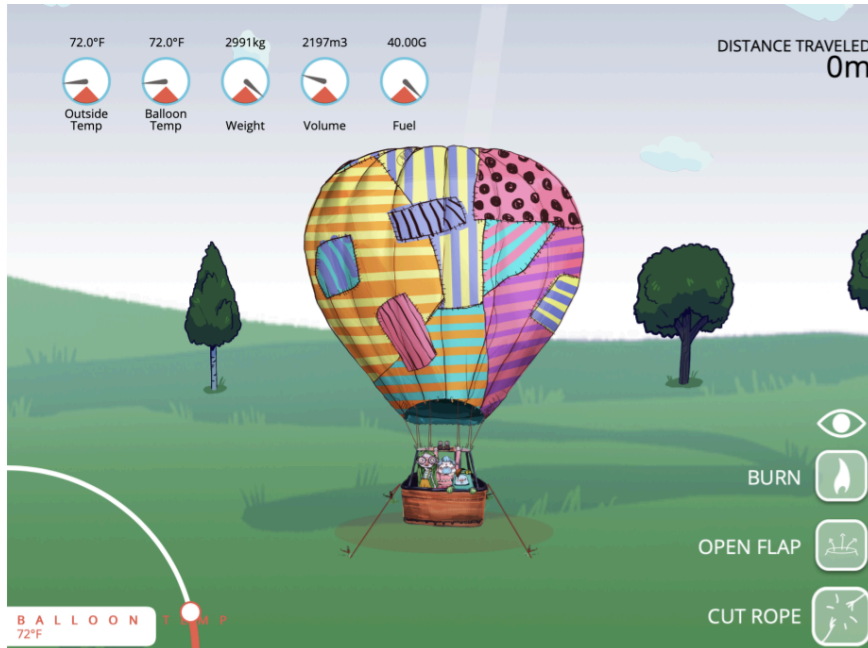
       i)   Selecting the "eye" icon will return you to the starting menu

2) As you watch the "balloon temp" gauge, hold down the "burn" icon and watch the temperature of the balloon increase
    a) Watch the "fuel" icon as it decreases during the burn

3) Select the "cut rope" icon when you are ready to lift off
    a) If lift off does not happen, continue adding more fuel. Stop adding immediately when the balloon lifts off.
    b) Add more fuel in small increments as your balloon descends toward the ground. **The goal is to keep your balloon flying the farthest distance possible**

4) Record your final score (the total meter distance you traveled) when your balloon lands on the ground
    a) **Score: _____m**

5) Select "fly again" to try again, or "back to menu" to start the next round

Round 2- Freestyle game

1) Select "free" from game menu
2) Click the screen to read through the informational prompts

a) Click the "volume" gauge to increase or decrease the size of the balloon using the gauge on the lower left of the screen
b) Click the "outside temp" gauge to increase or decrease the ambient temperature
c) Click the "ballon temp" gauge to increase or decrease the temperature of the balloon

3) As you watch the "balloon temp" gauge, hold down the "burn" icon and watch the temperature of the balloon increase
    a) Watch the "fuel" icon as it decreases during the burn
4) Select the "cut rope" icon when you are ready to lift off
    a) If lift off does not happen, continue adding more fuel. Stop adding immediately when the balloon lifts off.
    b) Add more fuel in small increments as your balloon falls to the ground

5) Once your balloon lands back on the ground, record your final distance, volume, and temperatures

    a) **Distance _____m   Volume _____ m^3**

    b) **Outside temp _____ F   Balloon temp _____ F**