**Mass vs. Weight Exploration**

**Directions:** Circle the correct word to be used in each of the sentences below.

The commander of the space shuttle was awoken by loud alarms sounding, “Brace for impact!” The shuttle had gone horribly off course and was about to crash land on a previously undiscovered planet. The ship’s mission was to travel the galaxy to investigate the difference between mass and weight and the commander was determined to make the best out of this terrible turn of events. While the rest of the crew strapped themselves into their safety harnesses, the commander took a deep breath and stood on the shuttle’s bathroom scale. “On our home planet this device measures **(1. mass / weight)**. Back home my **(2. mass / weight)** is 150 pounds. I wonder if it will change on this new planet,” the commander thought as he prepared for impact. Crash! The shuttle made a hard landing. As the dust from the crash settled the commander looked down at the scale which showed his **(3. mass / weight)** to be 80 pounds. “Aha!” cried the commander. “I now understand the difference between mass and weight. This other planet may have changed my **(4. mass / weight)** but it will never change my **(5. mass / weight)**.”

The commander summarized the conclusions of his experiments to the rest of the scientists back on Earth. His report stated that every time he visited another planet his **(6. mass / weight)** changed. And while traveling between planets in his space shuttle his **(7. mass / weight)** was zero and he experienced the feeling of **(8.mass**lessness / **weight**lessness). During these times he was able to float around the shuttle. However, even when he was floating around the space shuttle with zero **(9. mass / weight)** he still had his normal amount of **(10. mass / weight).** During all of the experiments and all of the traveling the commander’s **(11. mass / weight)** never changed since his body was always made of the same amount of matter.