

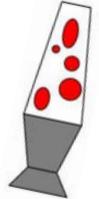
Name: \_\_\_\_\_

Section: \_\_\_\_\_

## Matter & Energy - Real-Life Scenarios

Directions: Now that we have finished discussing matter and energy, apply your understanding of these concepts to thoroughly explain the following scenarios.

1. One day in science class Tara notices a lava lamp in the back corner of the room. She asks the teacher to put it on because she never really saw one before and was curious about how it works. The teacher agrees to plug it in and after some time Tara notices the "lava" moving up and down. Explain why the "lava" behaved in this manner.



2. Jimmy does a cannonball into the swimming pool. After surfacing and floating around for a few seconds, he observes something interesting. He notices that if he takes a deep breath his body seems to float more. Also, he notices that he sinks into the water if he releases the breath. Explain why this is happening to Jimmy.



3. Sydney was lucky enough to experience a balloon ride this year at the New Jersey Festival of Ballooning. Since this was her first time, she is really curious about how the hot air balloon works. After stepping into the basket with her mother and father, she observes the pilot pulling on a cord. Once the cord is pulled, a big flame comes out of a burner pointing into the envelope (balloon) and the hot air balloon slowly begins to rise with Sydney and the others. Explain why the balloon begins to rise.



4. Eric and Stephen were preparing for the deciding match in their Wii "Punch-Out" head-to-head boxing tournament. Since it was late, Stephen was given permission to sleep over. This was especially easy since Eric had bunk beds. At the conclusion of their match, Eric told Stephen that he could sleep on the bottom bunk since Eric usually sleeps on the top. Stephen, in all of his glory, after winning the final match, tells Eric that he gets the top bunk because he won the tournament. Reluctantly, Eric agrees with Stephen and they both go to sleep. The next day, Eric and Stephen wake up and Eric says how he was so cold last night. He asks Stephen if he was cold, and Stephen informs him that he was very warm and slept like a champ. Eric looked confused since this is the first time he felt cold when sleeping in his room. Explain why Eric was cold last night while Stephen was not.

