**Testing Balanced and Unbalanced Forces**

Procedures:

1. Cut and paste this link: <https://phet.colorado.edu/sims/html/forces-and-motion-basics/latest/forces-and-motion-basics_en.html>
2. Click on “net forces”
3. In the upper right hand corner of the screen, put a check in the boxes for both “sum of forces” and “values” before having each tug-of-war challenge. Make sure to record your answers in the table.

|  |  |  |  |
| --- | --- | --- | --- |
| **Left Force (blue emos)** | **Right force (red emos)** | **Sum of the forces** | **Type of force:**  **Balanced or unbalanced?** |
| 1 large blue | 1 large red |  |  |
| 1 large blue + 1 small blue | 2 small reds |  |  |
| 1 medium blue | 2 small reds |  |  |
| 1large blue + 1 med. blue | 2 small reds + 1 med. red |  |  |

**Questions:**

* + 1. If Mr. Kusibab pushes on a chair with a force of 10 N and Mr. Ragaller pushes the chair in the opposite direction with a force of 3 N, then which direction will the chair move?
    2. Why did you choose the chair to move in that direction?
    3. If Mr. Glennon and Mr. Ragaller push a car in the same direction, **each** with force of 6 N, and Mr. Kusibab pushes the chair in the opposite direction with a force of 10 N, which way will the car move?
    4. Why did you choose the car to move in that direction?
    5. Answer the purpose question for Inquiry 6.2. *(How does an unbalanced force act differently from a balanced force?) ­*