

Activity 1: POE (Predict-Observe-Explain) with PASCO Laboratory

Here is the set-up! Watch this!

Situation 1: The carts have equal masses; the blue cart is at rest while the red cart is moving towards the blue cart.

Situation 2: The red cart is more massive than the blue cart; the blue cart is at rest while the red cart is moving towards the blue cart.

Situation 3: The blue cart is more massive than the red cart; the blue cart is at rest while the red cart is moving towards the blue cart.

Compare the forces which will be experienced by the carts in the following situations. Will the first cart experience (greater/lesser/same) amount of force than the second cart? Write your prediction in the 2nd column of the table.

POE Table

| Situation | Prediction <i>Choices: greater, lesser, same</i> | Result <i>Choices: greater, lesser, same</i> | Explanation |
|---|---|---|------------------------------------|
| 1. A cart of mass m hits another cart (m) at rest. | | | Write the reason in your notebook. |
| 2. A cart of mass ($2m$) hits another cart (m) at rest. | | | |
| 3. A cart of mass (m) hits another cart ($2m$) at rest. | | | |

