Fish Catch Interactive

Goal:
To observe patterns in a collision between a little fish and a big fish and to develop a *rule* for predicting the post-collision velocity of the two objects.

Background:
The collisions depicted in this Interactive have the following characteristic:

> Before the collision, only one object is moving. All the momentum of *the system* resides in a single object before the collision. After the collision, both objects move together at the same speed as if they were a *single object*.

In this activity, you will attempt to develop a mathematical rule for predicting the post-collision velocity for any collision that possesses this characteristic. You will attempt to develop the rule in the form of an equation that states the post-collision velocity (v') as a function of the pre-collision velocity (v) and the masses of the moving (m_1) and the stationary (m_2) objects.

Data:

	Little Fish Mass (grams)	Big Fish Mass (grams)	Initial Speed of Little Fish (cm/s)	Final Speed of Both Fish (cm/s)
a.				
b.				
c.				
d.				
e.				
f.				
g.				
h.				
i				

Conclusion:
Use the collected data to develop a conclusion for this study. What is the equation that expresses the post-collision velocity (v') as a function of the pre-collision velocity (v) and the masses of the moving (m_1) and the stationary (m_2) objects? Make a claim and then support your claim with evidence and reasoning. Your evidence should make some specific references to trials of data in the Data Table (notice that the trials are labeled with a letter a., b., c., etc.); explain your reasoning as to why the data support the claim that you have made.