**The Balancing Act Tasks**

[Adapted from: “Expanding Students’ Conceptions of the Arithmetic Mean” (1995) by R.A. Meyer, C. Browning, & D. Channell]

Materials: A meter stick, at least 5 equal weights for each group, and appropriate materials to balance the stick and to hang the weights.

Suggested for groups of 3 or 4 students

 0 10 20 30 40 **50** 60 70 80 90 100

Procedures:

1. Suspend a meter stick at its balance point of 50 cm. Hang four equal weights at 20 cm, 40 cm, 70 cm, and 90 cm, as shown on the figure above.

2. Where should the fifth weight be placed so that the stick balances at the 50-cm point?

3. Give another example to illustrate how four equal weights can be placed on a meter stick so that it will balance at 50 cm when they are suspended.

 0 10 20 30 40 **50** 60 70 80 90 100

4. Use your solution of Step 3 above and compare the sum of the distances of the weights to the left of 50 with the sum of the distances of the weights to the right of 50. What seems to be true?

 Do the same for Step 2 above. What seems to be true?

5. Use the add-and-divide method to compute the means in Steps 1, 2 and 3. Compare the means with the typical or average values that you found in the activities.