Instructions for Learning Gain Scores

You must calculate a learning gain score for each individual student. When an individual student has scored higher on their post-test than they did on their pre-test (which is the common case), you must use the first formula given below to determine their individual gain score. When a student scores lower on their post-test than they did on their pre-test, you must use the second formula given below to calculate their individual gain score. Once you have figured every students' gain score, you must calculate the average gain scores for the class.

Formula for positive gain (i.e., when an individual student scores higher on their post-test than on their pre-test):

$$\frac{\text{(Post-assessment - Pre-assessment)}}{\text{(100\% - Pre-assessment)}}$$

Where: pre-assessment is the **percent correct** on pre-unit assessment
post-assessment is the **percent correct** on the post unit assessment

Ex. for student #1 below: $\frac{70 - 45}{100 - 45} = \frac{25}{55} = .45$ Student #1 demonstrated a gain of 25 percentage points out of a potential 55 percentage points that they could have gained. Thus, they gained .45 (or 45%) of the possible percentage points they could have gained from pre to post assessment.

Formula for negative gain (i.e., when an individual student scores higher on their pre-test than on the post test):

Ex for student #2 below: $\frac{50 - 75}{100 - 75} = \frac{-25}{25} = -1.00$ Student #2 could have gained up to 25 percentage points, but instead lost 25 percentage points (or 100% of what they could have gained.)

(note: student scores below are in percentage correct)

Student #	Pre Assessment Score	Post Assessment Score	Student Gain Score
1	45%	70%	.45
2	75%	50%	-1.00
3	60%	80%	.50
4	40%	40%	.00
5	65%	70%	.14
6	90%	95%	.50
7	53%	59%	.13
8	60%	90%	.75
9	40%	95%	.92
10	42%	45%	.05
11	58%	88%	.71
12	24%	30%	.08
13	45%	89%	.80
TOTAL AVERAGE GAIN SCORE			.31 (OR 31% learning gain for entire class on average)