1. Obviously you need several time point measurements for the same people
2. Things you can do with latent growth curve modeling
   1. Individual growth over time (intraindividual change)
      1. Assumptions:
         1. Continuous variable measurement for the DVs
         2. Time spacing is all the same for people
         3. Must have at least 3 time measurements per person
         4. N > 200
      2. Dual layered model
         1. Level 1 = change over time by person (akin to repeated measures)
         2. Level 2 = change over time across people (akin to between subjects)
      3. Basic notion
         1. Intercept = my starting score at time 1
         2. Slope = my increases as I go from time 1 to time 2 to time 3
         3. If this is linear, the slope will be y = Bx, but if not linear, then you have to use x2 or 1/x functions
      4. See page 306 for a picture
         1. You make the intercept and slope latent variables
         2. Please note how you fix the intercepts to 1 and the slopes to 0, 1, 2 (you are marking them time wise)
         3. You are setting the intercepts to fixed to be equal across times (it’s one regression equation)
         4. And setting the first time 1 factor to 0 = basically makes it drop out of the equation, but helps set the intercept factor and the slope interpretation
         5. If the time measurements are unequal these slope values (0,1,2) should be set to something that represents how far apart they were taken (.5, 1, 1.5)
      5. Mathwise
         1. You want to interpret the loadings of the intercepts and slopes to understand if they are significant
   2. Measuring interindividual differences in change
      1. Here you will examine the means and variances, which represent average values of change and starting point for people
      2. Look at two factor means (intercept, slope) two factor variances, 1 covariance
         1. Intercept mean = what is the population mean of math scores
         2. Slope mean = what is the population change in math scores
         3. Variance = what the variance of change across time (how wide does it vary)
         4. Covariance = correlation between two – do people who start high (intercept) also have large increases in change (slope)
3. How to
   1. Plug ins > growth curve model
   2. Enter the number of time points
   3. Things to change
      1. Undo all the equal variances (object properties > take out the label for var)
      2. Undo the labels for the latent factors setting I and S mean and variance to equal
4. Output
   1. Check out the fit statistics!
   2. Check out the modification indices
   3. Regression weights = boring since you set them to fixed
   4. Check out the means and intercepts – are they significant?
   5. Check out the covariances – are they significant?
      1. Indicate a relationship between increases in intercept and slope
      2. If you start high – is your increase at the higher or lower rate than others? (sort of interaction)
   6. Check out the variance
      1. Tells you if there are differences across people (might be able to test other factors to figure out why – like gender)
      2. See path 321 for an example