Life History Theory
For many organisms growth rate (i.e., the increase in biomass per unit time) and development rate (i.e., the rate at which an organism progresses through ontogenetic stages [e.g., the instars of an insect, or the stage classes of a perennial plant]) are often considered to be interchangeable. It is true that growth rate and development rate under many circumstances are positively correlated, meaning that a faster growth rate is often associated with a faster development rate. However, this positive association does not mean that they are the same thing. In fact, negative repercussions in overall fitness can sometimes result from this positive association between the two.

For this question:
1. Sketch out a life history model for a generalized organism where growth rate and development rate are both important to the life history of the organism, and explain the linkages between these rates and various fitness components within and between life stages. No math is needed here, but diagrams of linkages, rates and fitness components may be useful in developing your verbal and pictorial model.
2. Using a few concrete examples taken from the literature, explain how the positive association between growth rate and development rate is often beneficial to the organism but how in some circumstances this association is detrimental. Do so using the model framework you laid out in the first part of the question.