1. (1 pt) Fill in the blanks to place the concepts in the correct order. Note: Reproductive isolation refers to the reduced fitness that can occur in hybrids when crossing between genetically divergent populations, not geographical isolation.

Concepts: speciation, genetic incompatibility, reproductive isolation

\_\_*Genetic incompatibility*\_ leads to \_\_*reproductive isolation*\_\_ which can then result in \_\_*speciation* \_\_.

1. (2 pts) Choose the correct answer for each attribute
   1. Are present in plants and animals
      1. Nuclear genome
      2. Mitochondrial genome
      3. Chloroplast genome
      4. *Nuclear and mitochondrial genomes*
      5. Nuclear and chloroplast genomes
      6. Nuclear, chloroplast, and mitochondrial genomes
   2. Are present only in plants
      1. Mitochondrial genome
      2. *Chloroplast genome*
      3. Nuclear and chloroplast genomes
      4. Mitochondrial and chloroplast genomes
   3. Contain circular, prokaryotic like genomes
      1. Nuclear genome
      2. Mitochondrial genome
      3. Chloroplast genome
      4. *Mitochondrial and chloroplast genomes*
   4. Are typically maternally inherited
      1. Nuclear genome
      2. Mitochondrial genome
      3. Chloroplast genome
      4. *Mitochondrial and chloroplast genomes*
   5. Encode proteins used in photosynthesis
      1. Nuclear genome
      2. Mitochondrial genome
      3. Chloroplast genome
      4. *Nuclear and chloroplast genomes*
      5. Mitochondrial and chloroplast genomes
   6. Contains four “parts”, including a pair of inverted repeats
      1. Nuclear genome
      2. Mitochondrial genome
      3. *Chloroplast genome*
      4. Mitochondrial and chloroplast genomes
2. (0.5 pts) Do the data support the hypothesis that structural variation in the chloroplast genome contributes to genetic incompatibility in Campanula americana? State yes or no and briefly explain.

The graphs we made combining data across groups at the end of the lab module generally led to a positive slope/relationship between number of structural variants on the x-axis and strength of genetic incompatibility on the y-axis. Thus, students were expected to state that yes, the data support the hypothesis due to the positive relationship between number of structural variants and the strength of genetic incompatibility.

1. (0.5 pts) Can we conclude that structural variation causes genetic incompatibility in this system? Why or why not? (answer in one sentence or bullet point).

No, causation does not equal correlation.

1. (1 pt) Explain what you think are the takeaways from this module in 2-4 sentences.

No wrong answers here, as long as students put in sufficient effort.