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| **Activity 2 – A Thought Exercise on the** **Origin of Species** |

**Please write the answers to the following questions:**

1. A mutation occurs in the reproductive cell (sperm or egg) of a single individual. This mutation has the potential to create a new species. But how can this happen, since a species must begin with at least two individuals, male and female, who produce enough offspring to create a sustainable new species?

2. Bacteria were around for a billion years or more before "higher" organisms appeared. Why did it take so long for higher forms to appear?

3. Why is sexual reproduction important to populations arising that create a new species?

4. If a population beings to develop new characteristics, can these characteristics be passed on genetically to future generations? Give an example where this cannot happen and another where it can.

5. If a population stopped reproducing sexually, but still reproduced asexually, how would its genetic variation be affected over time? Could speciation occur in this situation?