***DCP practice exercises***

Below are seven experiments. You job is to decide what to do with the data in each case. Experiments 1, 4 and 7 have associated data (in an excel file) so you can practice full DCP assessments. The data is by no means presented in an ideal way, but given the context you should be able to see what’s what. Questions 2, 3, 5 and 6 have no associated data, but you should describe what graphs and/or statistics would be appropriate for DCP

1 You are investigating the differences between males and females in three species of ducks. You have measured the masses (in kilograms) of 20 male and 20 female mallard ducks, 20 male and 20 female tufted ducks, and 20 male and 20 female goosanders (also a type of duck). What would you do with the data?

2 You are investigating the relationship between the height of pine trees and their distance from the edge of the forest. You have both variables measured in metres. What do you do with the data?

3 You are investigating the flower preferences of bees. You follow 10 bees from the same hive. There are 8 species of flower in the garden, and for each bee, during a 5 minute period, you record every visit it makes to a flower, and what species is visited. What do you do with the data?

4 You are measuring the effect of talking to plants on their growth. You have two categories of plants: those spoken to and those mercifully spared this silliness.

1. There are 10 plants of the same species in each category, and their heights have been measured after 10 weeks growth. What do you do with the data?
2. There are 10 plants of the same species in each category, and their heights have been measured every week for 10 weeks. What do you do with the data?

5 You are investigating the amount of mercury in the tissues of organisms in a food chain, in mg mercury per kilogram of tissue. You have 10 readings from producers, 10 from primary consumers, 10 from secondary consumers and 10 from tertiary consumers. What do you do with the data?

6 You are investigating the effect of salt on the survival of yeast cells. You have measured the concentration of cells (i.e. numbers per mm3) at 8 different salt concentrations (grams per litre). What do you do with the data?

7. a) You are measuring feeding rates of caterpillars at different temperatures. You have recorded the time it takes for a group of 8 cabbage white caterpillars to eat a 5g leaf, at 6 different temperatures. What do you do with the data?

b) You are measuring feeding rates of caterpillars on different species of plant. You have recorded the time it takes for a group of 8 cabbage white caterpillars to eat a 5g leaf of 6 different species of plant. What do you do with the data?