**MCQ1 – Model Answer**

1. What does this symbol (<-) indicate in R? *That the data (to the right) are being stored in the variable (to the left). It doesn't tell us anything about what the data are. It could be a vector, a table, or a single number.*
2. In R what kind of data are stored in a vector? *A single row or column of values. A single value is typically known as a SCALAR and vectors can be used to store any kind of data (numeric or text).*
3. Which of the following fits the criteria for an ideal variable name in R? *TyrannosaurBodyMasses. Names with spaces (Tyrannosaur body masses) are not allowed, and names comprising multiple words without some visual separation (camel or snake case) are hard to read (tyrannosaurbodymasses). Finally, names that provide no useful information about the contents of the variable (x) are unhelpful for a human to read.*
4. What is the syntax for accessing only part of a variable in R? *Square brackets, []. Curly braces, {} are used when writing functions or loops (things we won't really cover on this course). Parentheses, (), are used by functions to contain any data or options and greater than/less than symbols, <>, are used in other languages such as HTML and XML.*
5. Which of the following is a function in R? *unique. This returns the unique values (removes any duplicates) from whatever data is handed to it. The other three (TyrannosaurBodyMasses, VolcanoData, x) are all names we gave to variables in the practical.*
6. What will the colnames() function tell you about a table in R? *The names of the columns, if present. Vector names are given using "names()", row names using "rownames()", and colour names are usually provided to the "col" option inside of a plotting function (e.g., col = "Black").*
7. What is the "c()" function's name short for in R? *Combine (you may also sometimes see it referred to as concatenate).*
8. What kind of plot does the "plot()" function generate? *A scatter plot. A histogram is "hist()", a box plot "boxplot()", and a bar plot "barplot()".*
9. *Relative to other tyrannosaurs we found T. rex to be anomalously large (the sole outlier on the box plot). The average was under 1000 Kg, no values were anomalously small (there were no outliers at the bottom of the box plot), and the middle 50% of values were much smaller than T. rex.*
10. What kind of volcanoes did we find to most typically have a negative elevation? *Submarine volcanoes. This shouldn't surprise us!*