It's Only Words (BeeGees reference for those under 50)

Question: Why are science lecturers often hard to follow even when they are spoken in English and seem to make perfect sense right until the lecture is over??

Answer: Many ordinary words in the English language have specific technical meanings and if you don't know those meanings, you are fooled into thinking you understand what you are being told even though you do not.

Example: Let's look at why your chances of understanding   Lecture 1 on the scientific method are far poorer than your ability to actually use the scientific method.

Assignment: Please perform the following matching exercise for words and their definitions from today's lecture material.

probability	application of a series of specific statements to draw a general conclusion
sample	a systematic distortion of a statistic
valid	so constructed that if the premises are jointly asserted, the conclusion cannot be denied without contradiction
precise	a numerical fact or datum computed from a sample
hypothesis	exact in measuring, recording
logic	application of a generalization to make a specific conclusion
inductive	aggregation of items subject to a statistical study
necessary	the science that investigates the principles governing correct or reliable inference
statistic	a falsifiable statement
sufficient	the relative frequency with which an event occurs or is likely to occur
true	Deviating within acceptable limits from a standard
random	a condition such that its existence leads to the occurrence of a given event
accurate	being in accordance with the actual state or conditions
population	a subset of a population
deductive	following in a systematic pattern without any apparent defect in logic
bias	a proposition such that a denial of it involves a self-contradiction
sound	a process of selection in which each item of a set has an equal probability of being chosen

Answer Key: (Answers are in parentheses after the definition)

probability	application of a series of specific statements to draw a general conclusion (induction)
sample	a systematic distortion of a statistic (bias)
valid	so constructed that if the premises are jointly asserted, the conclusion cannot be denied without contradiction (valid)
precise	a numerical fact or datum computed from a sample (statistic)
hypothesis	exact in measuring, recording (precise)
logic	application of a generalization to make a specific conclusion (deduction)
inductive	aggregation of items subject to a statistical study (population)
necessary	the science that investigates the principles governing correct or reliable inference (logic)
statistic	a falsifiable statement (hypothesis)
sufficient	the relative frequency with which an event occurs or is likely to occur (probability)
true	Deviating within acceptable limits from a standard (accurate)
random	a condition such that its existence leads to the occurrence of a given event (sufficient)
accurate	being in accordance with the actual state or conditions (true)
population	a subset of a population (sample)
deductive	following in a systematic pattern without any apparent defect in logic (sound)
bias	a proposition such that a denial of it involves a self-contradiction (necessary)
sound	a process of selection in which each item of a set has an equal probability of being chosen (random)