**Inductive vs Deductive Reasoning**

**Question 1:** Do the townspeople take an inductive or deductive approach to determine whether the woman in question is a witch? What are some of the different sources of knowledge they rely on?

The predominant approach villagers used to determine whether the woman is a witch was deductive. There was a path of information they knew and tried to use that to justify how that made the woman a witch. For example, they said because wood burns and witches burn, that witches must be made of wood. This led to a long list of other deductions that, while were correct, did not lead them to making a logical decision about why the woman was a witch.

They also used thoughts like if she’s made of would, she should float. But there are other things that float like ducks. Their final determination was that if she weighs the same as a duck, she must be made of wood because they both float and if she’s made out of wood she burns and since witches burn because they’re made out of wood, then she’s a witch.

**Question 2:** Think about how you could approach a study of the relationship between gender and driving under the speed limit. How could you learn about this relationship using an inductive approach? What would a study of the same relationship look like if examined using a deductive approach?

The study could conduct a survey of people who drive and ask them to indicate their gender and their tendency to drive below, at or above the speed limit. Based on the results, an inductive determination could be made on whether more people of a certain gender indicated they drove below the speed limit.

A deductive approach might look like reviewing whether more people of a certain gender received speeding tickets. Based on who received more, a deductive determination could be made that whichever gender had fewer tickets must drive more slowly and therefore must be more likely to drive below the speed limit.

**Question 3:** Pick a business topic of your choice. How might you study the topic inductively? Deductively?

If someone wanted to inductively study how salaries compare between two careers such as Data Analytics and School Counselor, they might start by collecting salary data on an assortment of people who are currently working in the field. Based on the information collected, a determination could be made of the average salary someone could expect working in one field or the other.

If someone were interested in looking at how salaries compared deductively, they could look at the cost of obtaining the degrees or training needed to be hired for that position. Additionally, they could look at the years of education needed and the financial power of the institutions that would hire those individuals to make a determination on which position might earn a higher salary.