Drill: Formulating good research questions

1. What is the 1994 rate of juvenile delinquency in the U.S.?

    1. Good.

    2. There are data available from law enforcement and a population census to calculate a rate of juvenile delinquency.

2. What can we do to reduce juvenile delinquency in the U.S.?

    1. Bad.

    2. This is an open ended question and cannot be answered using quantities or probabilities.

    3. One way to improve the question would be to specify a measurable factor whose data can be collected and correlated to the reduction of juvenile delinquency, such as level of education.

3. Does education play a role in reducing juvenile delinquents' return to crime?

    1. Good.

    2. There are educational records that can be correlated with recidivism rates.

4. How many customers does AT&T currently serve in Washington, DC?

    1. Good, if you're AT&T.

    2. AT&T has geographic location information for their customers.

5. What factors lead consumers to choose AT&T over other service providers?

    1. Bad.

    2. This is an open-ended and subjective question. There aren't specific measurables.

    3. Create a survey that specifies specific parameters under the influence of AT&T to change, and collect the data from customers to analyze customer preference factors..

6. How can AT&T attract more customers?

    1. Bad.

    2. This is an open-ended question.

    3. A better question is to ask whether specific, measurable actions would attract customers. Historic promotion or email offer data may provide this.

7. Why did the Challenger Shuttle explode?

    1. Good.

2. There are records indicating shuttle construction processes and maintenance, as well as physical evidence to point to root cause.

8. Which genes are associated with increased risk of breast cancer?

    1. Bad.

    2. There isn't a measurable component to this question.

    3. One way to improve this question would be to specify a gene that has existing research data or could be measured, along with identifying an appropriate population that could be followed to determine increased rates of breast cancer.

9. Is it better to read to children at night or in the morning?

    1. Bad.

    2. Measuring 'better' is subjective.

    3. This can be improved by measuring the level of some kind of activity that children perform after being read to.

10. How does Google's search algorithm work?

    1. Good.

    2. An algorithm by definition outlines the process by which it works.