Name: _____ **Date:** _____

Answer Key: Are Your Findings Fact or Friction? 4th Grade Data Sleuth Quiz

Imagine you're a city planner deciding on a new park location—these challenges require you to weigh conflicting evidence and spot bias in complex datasets.

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1. A wildlife biologist wants to prove that local wolf populations are growing. She only counts the wolves in one small forest where they are common, ignoring the surrounding fields. What is wrong with her data collection?

Answer: B) The sample is biased and not representative

To get a true picture of a population, data must be collected from many different areas, not just the place where the subject is most likely to be found.

2. When you look at a graph and decide what the numbers actually mean for a real-world problem, you are performing data _____.

Answer: C) Interpretation

Interpretation is the process of translating raw data into meaningful information and conclusions.

3. True or False: If two graphs show the exact same numbers but use different scales on the side, they can lead people to two different conclusions.

Answer: A) True

Manipulating the scale (y-axis) of a graph can make a small change look huge or a big change look tiny, which is a key skill in evaluating data visualization.

4. You find a website claiming that '90% of kids hate broccoli,' but the survey was funded by a company that sells chocolate. Why should you be skeptical?

Answer: B) The source has a conflict of interest

A conflict of interest occurs when the person or company providing the data has a reason to want a specific result, which may lead to biased reporting.

5. A library wants to protect its digital records from being stolen by hackers. The best way to manage this data safely is through _____.

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Answer: C) Encryption

Encryption scrambles data into a secret code so that only authorized users with a key can read it, making it essential for data management.

6. Two weather apps show different forecasts for tomorrow. One uses data from five years ago, and the other uses data from the last hour. Which is more reliable?

Answer: C) The one-hour-old data because it is more current

In many fields, especially meteorology, the 'recency' of data is a critical factor in its accuracy and relevance.

7. True or False: Using 'Metadata' (data about data) like the date a photo was taken can help you determine if an image is being used to spread misinformation.

Answer: A) True

Metadata provides context, such as time and location, which is vital for verifying the authenticity of digital files.

8. An oceanographer collects thousands of temperature readings from the Atlantic Ocean. To find a pattern over 10 years, which method would be most effective?

Answer: B) Using a data visualization tool to create a trend line

Visualizing large datasets helps humans identify long-term trends and patterns that are impossible to see in a list of individual numbers.

9. If a researcher only shares the data that supports their idea and hides the data that proves them wrong, they are guilty of _____.

Answer: B) Cherry-picking

Cherry-picking is an unethical practice where only the 'best' or most favorable data is presented, leading to an unfair conclusion.

10. True or False: Information found on a government (.gov) or university (.edu) website is generally considered more credible than a social media post.

Answer: A) True

Organizations like universities and government agencies usually have strict standards for accuracy and peer review that social media users do not.