Data, Metadata & Extracting Information

Name: _____ Period: ____ Date: _____

Objectives

- Describe what information can be extracted from data (DAT-2.A).
- Describe what information can be extracted from metadata (DAT-2.B).
- Identify the challenges associated with processing data (DAT-2.C).

Directions: Answer each section. Be precise about the difference between *data* and *information*.

Section 1: From Data to Information

1. What is **information**, and how is it different from raw data?

2. Give two things people can do with data once patterns are found.

3. A study finds that ice-cream sales and sunburns both rise in the same months. Does this *correlation* prove that ice cream causes sunburns? Explain.

4. Why might you need to **combine data from several sources** to answer a question?

Section 2: Metadata

5. Define **metadata** and give one example for a photo file.

6. If you change or delete a photo's metadata (like its creation date), does the image itself change? Explain.

7. Give two ways metadata make data more useful.

 CC BY-NC 4.0

Section 3: Challenges of Processing Data

8. A survey lets people type their state in an open text field. You get `TX`, `Texas`, `texas`, and `Tx`. What problem is this, and what process fixes it?

---

9. List three challenges that can make a data set hard to process.

---

10. A team worries their results are biased. A member says, "Let's just collect more data — that will remove the bias." Is that correct? Explain.

---

11. Why can very large data sets require **parallel** systems rather than a single computer?

CC BY-NC 4.0