**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_ Per: \_\_\_\_\_\_**

**Fingerprint Identification Lab**

**Problem: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Introduction: (6 - 8 sentences of Background Information on fingerprints and genetics) *Define what fingerprints are, how they are inherited (polygenic inheritance), patterns, uses of fingerprints, and other interesting information***

……………………………………………………………………………………………………………................................

**\*Fingerprints are a physical trait caused by a combination of genes, environment, and random developmental events.** The most common fingerprint patterns include **whorls**, **arches** and **loops**, although some people show double loops and other combinations. In the general population, about 65% of all fingerprints are loops; 30% are whorls; and only 5% are arches.

**Hypothesis: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Materials:**

**Procedure**:

1. Rub pencil on scrap paper until there is a dark smudge of graphite/lead.
2.
3.
4.
5.
6.
7.
8.

**Data:**

 **\*Include your observations**

**Table 1: Individual fingerprints**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Finger** | **Thumb** | **Index** | **Middle** | **Ring** | **Pinky** |
| **Pattern****RIGHT** |  |  |  |  |  |
| **Pattern****LEFT** |  |  |  |  |  |

**Table 2: Class Data**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Loop** | **Arch** | **Whorl** | **Total** |
| Total number of each type of print |  |  |  |  |
| %  |  |  |  | 100% |

\*\*\*\*\*Make a bar graph on your Google Docs

**Questions: (Data Analysis) – USE COMPLETE SENTENCES TO ANSWER**

1. Which pattern was dominant on your fingers? Which is the most common type of fingerprint in your class?
2. Did you have the same fingerprint pattern on all of your fingers? If no, explain.
3. Are all loop, whorl, and arch patterns the same? How do you know? (Remember how fingerprint patterns are inherited)
4. What were the percentages of each type of print in the class? How does our class data compare to the general population (expected percentages found in background information above)?
5. Are skin cells produced by mitosis or meiosis? Explain

**Error Analysis:**

**Conclusion:**