1. **Title** of your project

Does My Cat's Mouth Have More Bacteria Than My Four-Year-Old Sister?

Who would you let lick you?

2. Question:How does the amount of bacteria in my Siamese cat's mouth compare to the bacteria in my four-year-old sister's mouth?

3. Variables:

- **Independent variables**: Mouth source: 1 Siamese cat vs. my 4-year-old sister
- **Dependent variables**:Amount of bacteria growth in the Petri dishes
- **Control**:
  - Same type of Q-tips
  - Same type of bacteria dishes
  - Same sampling time (7:00 PM)
  - Same room temperature for the dishes (73°F / 23°C)
  - Same method for swabbing

- **4. Hypothesis:** If I compare the bacteria in my sister's mouth and my Siamese cat's mouths, then my sister will have more bacteria, because sugary foods, drinks, and not flossing can increase bacteria growth, while my cats eat mostly dry food and have fewer sugary snacks.

5. Purpose of my Experiment: The purpose of my experiment is if I compare the bacteria in my sister's mouth and my Siamese cat's mouth, then my sister will have more bacteria, because sugary foods, drinks, and not flossing can increase bacteria growth, while my cats eat mostly dry food

and have fewer sugary snacks. Also, both could potentially lick you, so wouldn't you want to know what's in their mouths?

6. Materials used:

- 6 sterile Q-tips
- 6 sterile bacteria dishes (Petri dishes with growth medium)
- 1 Siamese cat
- 1 four-year-old sister
- 1 adult to help supervise
- 1 researcher (me)
- Marker (to label dishes)
- Notebook and pencil (for observations)
- Gloves (optional, for hygiene)

7. Procedures:

Wash your hands and put gloves on if you have them.

Label each Petri dish: Cat 1,Sister 1–3 (or however many samples).

Swab each mouth:

- Gently rub a Q-tip on the inside of the cat's mouth (with adult help).
- Gently rub a Q-tip inside my sister's mouth.

Transfer the Q-tip to a Petri dish by rubbing it on the growth medium. Close the lid immediately.

Seal the dishes with tape or Parafilm to prevent contamination.

Place dishes in a safe, warm area (room temperature, ~73°F).

Observe the dishes daily for 3–5 days. Record:

- Amount of bacteria (none, small spots, medium, large growth)
- Color or appearance of colonies
- Take photos if possible

Compare growth between the cat's dishes and your sister's dishes.

Clean up: Wash hands and safely dispose of Q-tips. Keep dishes sealed; do not open them after bacteria grow.

9. Closing: In my experiment I compared the bacteria in my cat's mouth and my 4 year old sister's mouth. My hypothesis was that my 4 year old sister would have more bacteria than my cat. My data and observations told me that my cat had some striking and unexpected bacteria and much more than what my sister had. My hypothesis was valid because I was able to test my hypothesis and gather data, but I was wrong in guessing that my sister would have more bacteria. I learned that even though my sister doesn't brush her teeth well and eats a bunch of snacks, she still doesn't have as much bacteria growing as my cat. I also learned that bacteria can look very unusual and colors can be concerning! I would like to know from an expert, what the different types of bacteria colonies mean and should I be worried about my cat having the purple spots in only one sample?

10**. Reflection**: My thoughts on how my experiment turned out were very unexpected. It was very fun as well as very interesting to see the different bacteria grow. I thought my experiment went well, but what I think surprised me was when I found out that my cat had purple spots on the

dish and we might have to take her to the vet! Next time I would buy the petri dishes already ready with the agar. My experiment could benefit the world because many people have both cats and 4 year olds, and it could also help us understand how to better take care of our mouth's health.