Meringue & Cloud Formation Research Worksheet

# Section 1: Experiment Metadata

Title:
Date:
Researcher(s):
Location:

Weather API Data:
- Temperature (°C):
- Relative Humidity (%):
- Barometric Pressure (hPa):
- Dew Point (°C):
- Wind Speed & Direction:

# Section 2: Hypothesis

State the expected relationship between atmospheric conditions and structure formation.

# Section 3: Experimental Setup

|  |  |  |
| --- | --- | --- |
| Variable Type | Variable Name | Description |
| Control | Mixing Speed / Lift Rate | Constant setting across tests |
| Control | Egg White Mass / Vapor Volume | Held constant |
| Test | Ambient Humidity | Real-time weather input |
| Test | Temperature | From environment |

# Section 4: Procedure

1. Prepare materials (egg whites, sugar, mixer, or misting chamber).
2. Record current ambient weather data from the API.
3. Begin whipping or mist generation, keeping control variables constant.
4. Monitor structure formation and stability over time.
5. Record observable changes at regular intervals.
6. Repeat trials under varying weather conditions to test reproducibility.

# Section 5: Data Logging Table

Record one row per trial. Use comments for irregularities or notes.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Trial # | Time (min) | Structure Observed | Volume Increase (cm³) | Stability Duration (min) | Relative Humidity (%) | Dew Point (°C) |

# Section 6: Observations

Complete the following variables based on observations:

|  |  |
| --- | --- |
| Texture | Glossy / Matte / Soft / Crisp |
| Meringue Type | French / Swiss / Italian |
| Intended Outcome | Marshmallow / Base Foam / Finished Dessert |
| Collapse Timing | Immediate / Delayed / Not Observed |
| Foam or Cloud Layering | Homogeneous / Stratified / Mixed |

# Section 7: Results & Interpretation

Summarize trends, anomalies, correlations with weather data, and structure behaviors.

# Section 8: Conclusion

Evaluate if the hypothesis was supported.
Note any significant findings or suggested improvements.