Name _____

A Data Recipe Analysis Activity Answer Key

Recipe Card #1: "Hire-Me Helper" - An AI for Job Applications

Which ingredients might be causing unfair results? The company's **past hiring records** and **résumés of top executives (90% male)** create a pattern that reflects past bias. The **interview notes** may also include unconscious bias from managers. These ingredients reinforce the idea that success looks like what the company has always chosen - mostly men from the same backgrounds.

What substitutions could make this data recipe fairer? Add résumés and performance data from a **diverse range of employees**, including women, people from different schools, and career paths outside the company's usual circle. Remove identifying details like names or universities to help the AI focus on skills instead of background.

What lesson does this recipe teach about bias in data? If the data used to train AI reflects unequal patterns from the past, the AI will repeat those same unfair decisions in the future. Fairness requires updating the data and removing bias before training begins.

Recipe Card #2: "Predict-o-Police" - An AI for Crime Prediction

Which ingredients might be causing unfair results? The **police reports** and **arrest records** are biased because they depend on where police have patrolled most often in the past. If certain neighborhoods were over-policed, they'll show up as higher risk, even if the actual crime rate is low. **Newspaper articles** may also reinforce stereotypes about those same areas.

What substitutions could make this data recipe fairer? Include more **current and balanced data** about community safety, such as emergency response times, 911 calls, or neighborhood surveys. Add **contextual data** (population, income, housing conditions) and input from local residents. This gives a fuller, fairer picture of community conditions.

What lesson does this recipe teach about bias in data? AI can't tell the difference between bias and fact unless people fix the data first. If biased information is fed into the system, biased predictions will come out - creating unfair cycles of over-policing.

Recipe Card #3: "Health Hero" - An AI for Diagnosing Patients

Which ingredients might be causing unfair results? The dataset is dominated by **urban hospital records**, **young patients**, and **light-skinned images**. This leaves out rural communities, older adults, people who speak other languages, and patients with darker skin tones. As a result, the AI learns a very narrow version of "normal."

What substitutions could make this data recipe fairer? Add **medical data from rural clinics**, **different age groups**, **translated health surveys**, and **diverse medical images** that show a wider range of skin tones and symptoms. The goal is to represent real-world variation in the training data.

What lesson does this recipe teach about bias in data? Even medical AI can make harmful mistakes if its data doesn't reflect everyone. Health technology must be inclusive to serve diverse populations safely and accurately.