Instructions for Students: Performing and Discussing an Experiment

The gist 📌

In this lesson, you will perform an experiment to try to answer the question, “Does Color-Coding Improve Our Memory’s Performance?” You will work in groups of 4-5. Your group will then discuss your results in a Kialo discussion.

Activity instructions

Part A: Performing the experiment 🧪
In this part of the lesson, you will test the main hypothesis: *Color-coding improves our memory’s performance*. You will create a presentation with 20 words written in different colors and see how many words each participant can remember. You will also create an identical presentation, but *without* color-coding, and test whether a different group of participants achieves better memory performance with the colorless presentation.

Follow these steps to perform the experiment:

1. Create two presentations, named **Control Presentation** and **Experimental Presentation.** The presentations can be digital (for example, on Google Slides) or written manually on sheets of printer paper:

    - For the **Control Presentation:** write 20 words (for example: shoe, walrus, five…), with one word per slide or card. All words should be written in black.

    - For the **Experimental Presentation**: copy the same 20 words from the **Control Presentation**. This time, write the words using the colors red, blue, pink and green. For example, the 5 first words of your presentation are colored red, the next 5 are colored in blue, and so on.

2. Find subjects to test:

    - When both presentations are ready, think about who your participants will be and how you will run the experiment with them.
        - Decide how the words will be presented to the subjects. For example: *Will the presenter say each word out loud as they appear?*

What will be the pace of the presentation of words? Will the presenter run the presentation more than once?
    - Fill out the Experimental Design Graphic Organizer to help you prepare.

- Find 20 participants to test their memory performance. Use the **Experimental Presentation** on 10 of them and the **Control Presentation** on the other 10.

- When each participant is ready, let them know that you will present 20 words to them. Afterwards, they will need to try to recall as many words from the presentation as possible.

- One of your team members should record how many words were recalled correctly using the data recording sheet.

> **TIP**: How you present the words is likely to create differences in the results your team obtains. So, **make sure your performance is the same for each participant.**

Part B: Discussing your results in a Kialo discussion 🗣️

In this part of the lesson, your group will discuss the results of your experiment in a Kialo discussion. Each group will have its own discussion. Model yours after the example discussion your teacher shows you.

1. Create a **pro claim** for each reason that you think *supports* the thesis statement, "Our experiment confirms that color-coding improves our memory's performance." If possible, support that pro claim with additional pros underneath. Try to refute the first pro claim with cons.

2. Create a **con claim** for each reason you think *refutes* the thesis statement. If possible, support that con claim with pros underneath. Try to refute the first con claim with other cons.

3. Each group should create a minimum of 10 claims in the discussion.