

Session 9: Perception & Design — Pen-and-Paper Pair Exercise

PSY 410 | Data Science for Psychology

Name: _____ Date: _____

No laptop today? No problem. This handout lets you practice the same skills on paper. Work with a partner who has a laptop and compare your work at the end.

The task (same as the slide exercise)

Your partner's screen shows a cluttered graph. **Rewrite it** to follow the design principles covered in today's lecture. Remove at least 5 unnecessary elements and make it tell a clear story.

Here's the cluttered code (your partner will have it on screen):

```
reaction_data |>
  ggplot(aes(x = condition, y = rt, fill = condition,
             color = condition, size = accuracy)) +
  geom_point() +
  geom_boxplot(alpha = 0.3) +
  scale_fill_manual(values = c("Control" = "red",
                              "Treatment" = "green")) +
  scale_color_manual(values = c("Control" = "red",
                              "Treatment" = "green")) +
  labs(x = "condition", y = "rt") +
  ggtitle("data") +
  theme_gray()
```

Your pen-and-paper version

Step 1: Identify the problems. Read through the code above and list every design problem you can spot. Aim for at least 5:

#	Problem	Design principle it violates
1		
2		
3		

#	Problem	Design principle it violates
4		
5		
6		
7		

Step 2: Plan your fixes. For each problem, write what you'd change:

Problem	Fix

Step 3: Rewrite the code. Write a clean version on paper. Use the space below:

```
reaction_data |>
  ggplot(aes(x = _____, y = _____, fill = _____)) +
```

Check your work

Compare your problem list and rewritten code with your partner's screen. Did you find at least 5 problems?