



LESSON 3: ANALYZING THE RESULTS



Activity 3A: Data and Bar Graphs



Graphs are commonly used by scientists to analyze data collected during an investigation. Graphs provide opportunities to compare and even predict trends in data. Two common types of graphs are line and bar graphs. Line and bar graphs display different types of data. Line graphs are typically used to demonstrate a change in a variable over a certain amount of time. It can also show data trends. Bar graphs are used to show comparisons within the data.

Line and bar graphs should include a title, key/legend, and labels for the x and y axis. The independent variable is represented on the x-axis and the dependent variable is represented on the y-axis. Always include units for the x and y axis.

In the transformation, participants provided information about how many cigarettes they each smoked in one day. This is called the baseline CPD (cigarettes per day).

Table 1 – Baseline: Cigarettes per Day (CPD)

Extended (Intervention Group)		Standard (Control Group)	
Male	Female	Male	Female
21.4	21.4	23.6	19.4

Materials: Map Colors, crayons, or markers

Instructions: Using the above data, construct a bar graph that compares the cigarettes per day usage between males and females in the extended and standard group.

Independent Variable:

Groups: Extended Group (men and women) and Standard Group (men and women)

Dependent Variable:

Cigarettes per Day

Explain why a bar graph is used instead of a line graph:

The data is a snapshot comparison between groups and does not show changes over time.



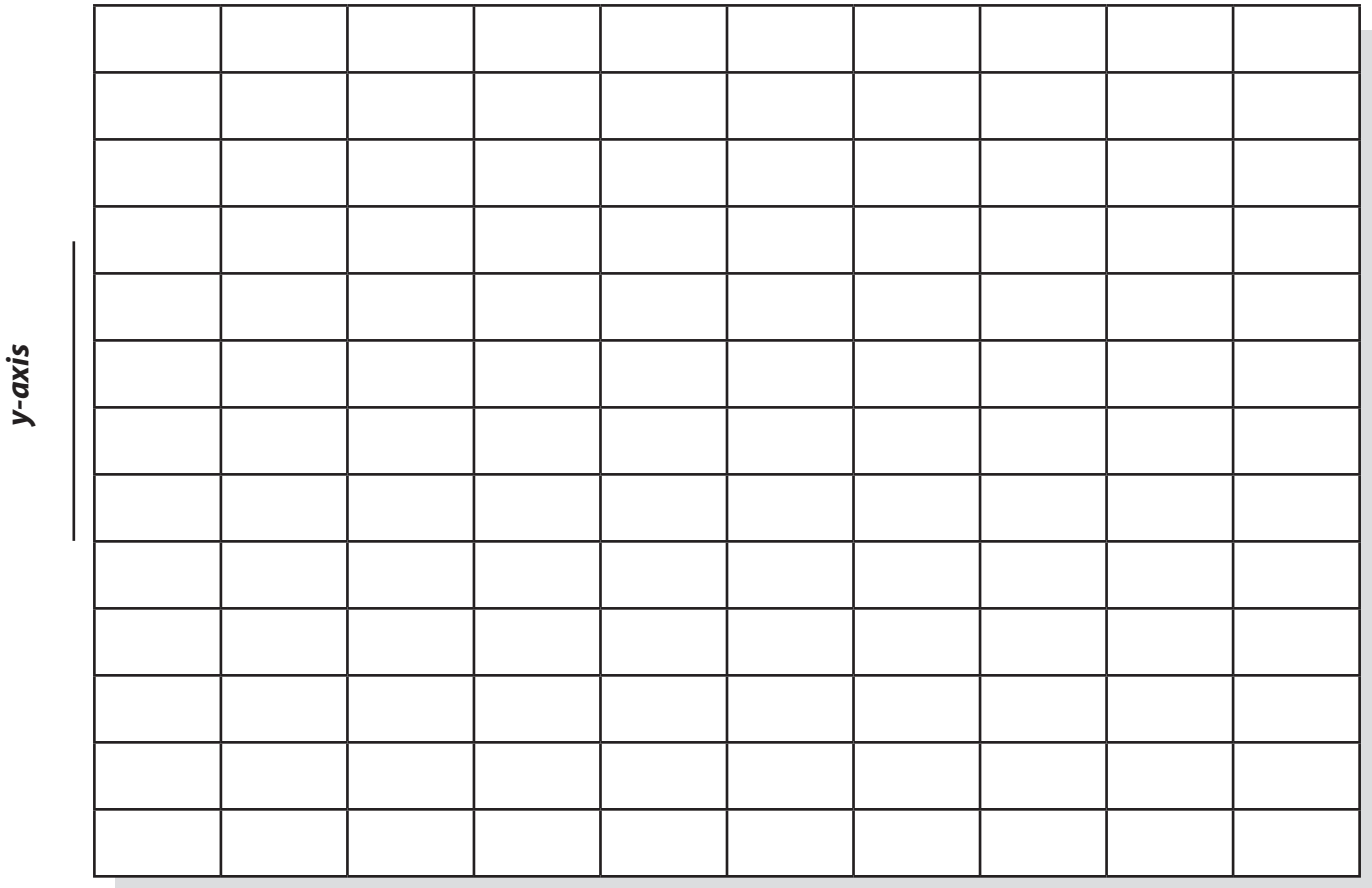


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 **Graph 1 Title:** _____



x-axis

Key/Legend





Processing Out

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1. According to your graph, which group smoked the least amount of cigarettes in one day?

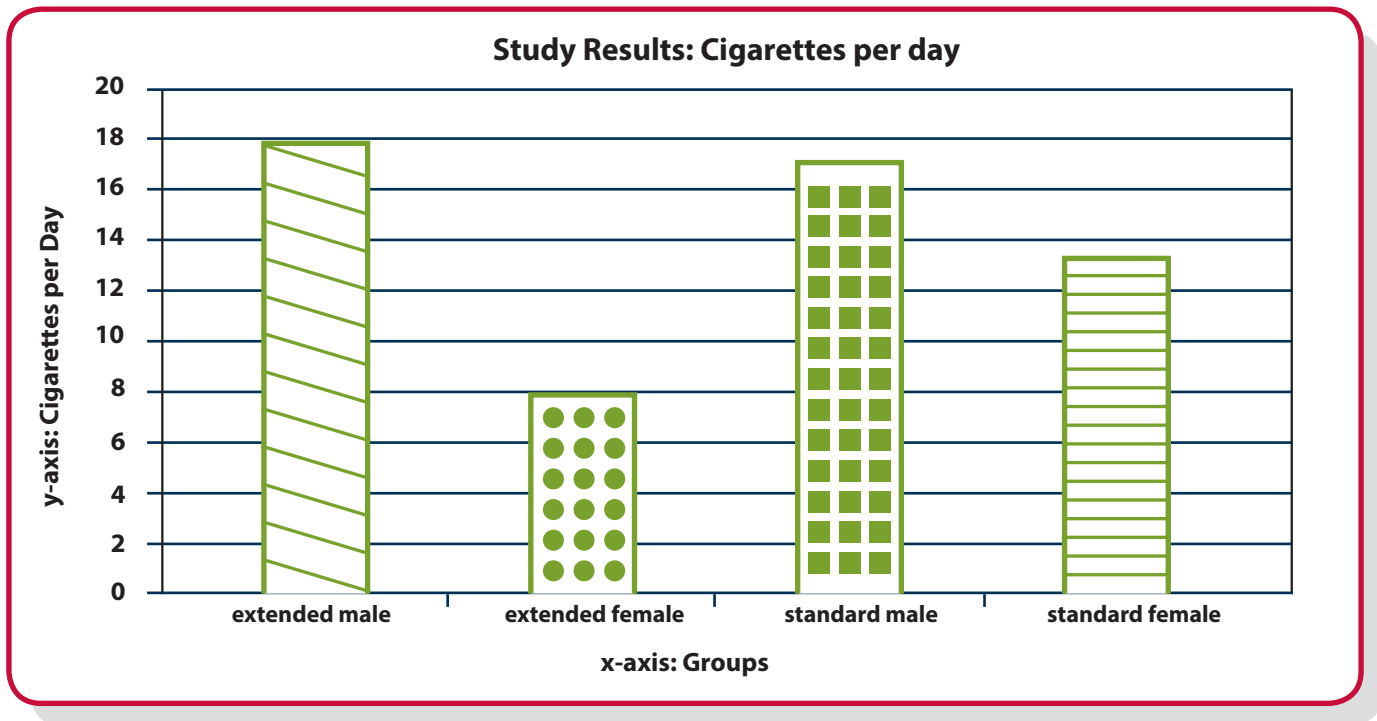
Answer: The group that smoked the least amount of cigarettes in one day is the female standard (control) group.

2. What is the difference between the extended and standard group?

The extended group is the intervention or experimental group. The standard group is the control group. The extended group received the varenicline for a longer period of time (4 weeks). The standard group received a placebo for 3 weeks and varenicline for one week (the regularly prescribed dose).

Graph Comparison: Use the graph below to answer the following questions.

Graph 2: Study Result, Cigarettes per Day



*Graph is an estimation based data in the transformation





Processing Out

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1. Graph 2 shows the end results of the study. Which group showed the most reduction of cigarettes per day? (Hint: compare Graph 1 and Graph 2)

The females in the extended group (intervention group).

2. Describe the difference between the successes of the females versus the males in the reduction of cigarettes per day.

The females in both groups were more successful than both groups of males in reducing the number of cigarettes per day.

3. What data do you need to create a line graph from this information?

To create a line graph, data would need to be collected during the study, not just the baseline and final CPD.

4. Compare and contrast your graph (*graph 1*) and the results of graph 2.

Answers will vary.

