



Lesson Summary

Lesson Summary: Scatter Plots

Learning Objective: I can identify possible relationships between two variables by looking at a scatter plot.

Why This Matters: By learning about scatter plots, you can discover hidden connections between things like video game scores and hours of practice, or even height and shoe size, helping you understand the world around you better.

Estimated Time: ~45 minutes.

Teachers Should:	Learners Should:
☐ Edit and share the Student Lesson (print or digital) with all students. ☐ Print copies of the Exit Ticket to distribute at the end of class. ☐ Spend class time supporting students as they learn.	☐ Watch the video (ilesson.co , code = qwwn) and take notes. ☐ Answer the Practice Questions with classmates. ☐ Complete an Exit Ticket before they leave class.

This lesson also includes:

- ★ A [Warm Up](#) for students to complete as they enter class.
- ★ [Additional Practice](#) for students who need more support.
- ★ An [Extension Activity](#) for students who want to go deeper.

You can support students by reviewing this [Lesson Slide Deck](#) during class.

Teaching Tips: Scatter Plots

1) Plan for Anticipated Challenges. Here are a few ways students may struggle, and how you can respond:

- **Interpreting Correlation:** If students struggle to understand what a positive, negative, or no correlation looks like on a scatter plot, then consider using real-world examples that are relatable to their lives (e.g., height vs. shoe size, time spent playing video games vs. time spent on homework) and having them physically model different correlations with their arms or bodies.
- **Understanding Variables and Axes:** If students struggle to identify which variable goes on which axis or what each point represents, then consider providing pre-made scatter plot templates with labeled axes and having them plot data points manually before using Google Sheets.
- **Using Google Sheets:** If students struggle with the mechanics of creating a scatter plot in Google Sheets (selecting data, inserting charts, adding trendlines), then consider providing step-by-step instructions with screenshots or a simplified version of the data set to practice with.

2) Modify for Multilingual Learners. To make this lesson more accessible:

- **Pre-Teach Vocabulary with Visuals:** Introduce key terms like "scatter plot," "variable," and "correlation" using pictures and diagrams before the lesson. This helps students build a foundation of understanding and reduces cognitive overload during the lesson.
- **Use Simplified Language and Slower Pace:** The teacher should speak more slowly and deliberately, avoiding slang and jargon. Simplifying sentence structure makes the content easier to process in real-time.
- **Provide Step-by-Step Visual Guides:** Create a written guide with screenshots showing each step of creating a scatter plot in Google Sheets. This allows students to follow along visually and at their own pace, reinforcing the verbal instructions.

3) Add Creative Activities. In addition to the practice contained in this lesson, here are a few things you can do to spark students' engagement and creativity. Where possible, students should complete these activities in small groups, with teacher support:

- ★ **Human Scatter Plot:** Students physically arrange themselves on a coordinate plane (marked on the floor) based on two variables (e.g., height vs. shoe size) to create a human scatter plot and discuss the observed correlation.
- ★ **Data Collection & Scatter Plot Creation:** Groups collect data on two variables (e.g., arm span vs. hand size) from their group members, create a scatter plot by hand or using technology, and analyze the relationship.
- ★ **Scatter Plot Storytelling:** Provide groups with different scatter plots (with and without correlations) and have them create a short story or scenario that explains the relationship between the two variables.

Lesson Notes

This lesson was built using [Insta-Lesson](#), and edited by the teacher to meet their learners' needs.

Warm Up

Name: _____

Date: _____

Warm Up: Scatter Plots

Consider the number of ice creams sold each day and the temperature that day.

Do you think there's a connection between these two things?
If so, how would you describe it?

What are your goals for today's class?

Name: _____

Date: _____

Warm Up: Scatter Plots

Consider the number of ice creams sold each day and the temperature that day.

Do you think there's a connection between these two things?
If so, how would you describe it?

What are your goals for today's class?



Exit Ticket

Name: _____

Date: _____

Exit Ticket: Scatter Plots

Learning Objective: I can identify possible relationships between two variables by looking at a scatter plot.

Describe the relationship between the two variables in a scatter plot where as one variable increases, the other variable also tends to increase.

Name: _____

Date: _____

Exit Ticket: Scatter Plots

Learning Objective: I can identify possible relationships between two variables by looking at a scatter plot.

Describe the relationship between the two variables in a scatter plot where as one variable increases, the other variable also tends to increase.



Additional Practice

Name: _____

Date: _____

Skill Builder: Scatter Plots

Learning Objective: I can identify possible relationships between two variables by looking at a scatter plot.

To develop your understanding, you can:

- ☐ **Rewatch the video lesson** ([ilesson.co](https://www.ck12.org/lesson/Scatter-Plots-1/lesson-co) , code = qwwn), looking for points that don't make sense. When you reach one of those points, pause and find a classmate whom you can ask for help.
- ☐ **Revisit your notes** from the first time you watched, and add any additional information that helps you understand this topic. You may want to take more notes on a separate sheet of paper.
- ☐ **Complete the additional practice questions below.** Whenever you have questions, ask your teacher or classmates for support!

Q1. Describe a scenario where you might use a scatter plot to explore the relationship between two variables. What two variables would you plot, and what kind of relationship might you expect to see?

Q2. Explain how you can tell from a scatter plot if there is a positive correlation, a negative correlation, or no correlation between two variables.

Q3. Imagine you create a scatter plot showing the relationship between the number of hours students spend playing video games each week and their test scores in math. If the scatter plot shows a negative correlation, what does this mean?

Q4. What does it mean if the points on a scatter plot are clustered closely around a straight line? What does it mean if the points are scattered widely?

Q5. A scatter plot shows the relationship between the height of a plant and the amount of sunlight it receives. The data points are: (2cm, 1 hour), (4cm, 2 hours), (6cm, 3 hours), (8cm, 4 hours), (10cm, 5 hours). Describe the relationship between plant height and sunlight exposure based on this data.



Extension Activity

Name(s): _____

Date: _____

Scatter Plot Investigators

Scatter Plot Challenge: Find the Trend!

Think about two things that you believe might be related. For example, is there a connection between hours of studying and test scores? Or between the number of leaves on a tree and the amount of sunlight it gets?

Collect some data, create a scatter plot, and see what you find! What trends, if any, does your scatter plot reveal about the possible relationship between your chosen variables? What did you learn by creating this scatter plot? Share your plot and your conclusions with the class.



Answer Key

Answer Key: Scatter Plots

Key Points (Fill In the Blanks)

1. correlation
2. linear, regression
3. R-squared

Lesson Practice

- Q1. A scatter plot shows the correlation between two quantitative variables.
- Q2. A positive correlation.
- Q3. Correlation describes the strength and direction of the relationship between two variables.
- Q4. There is no correlation between the two variables.
- Q5. It's a trend line used for making predictions based on the data's correlation.
- Q6. More studying is associated with higher test scores.
- Q7. Hours studying (x) vs. exam score (y); expect a positive correlation: more study, higher score.

Additional Practice

- Q1. Plotting study hours vs. exam scores; expect a positive correlation: more study hours, higher scores.
- Q2. Positive correlation: points increase together; negative: one increases as the other decreases; none: no trend.
- Q3. More hours playing video games each week are associated with lower math test scores.
- Q4. Clustered points indicate strong correlation. Scattered points indicate weak or no correlation.
- Q5. There is a strong positive correlation between plant height and sunlight exposure.

Exit Ticket:

There is a positive correlation between the two variables.