

Teacher Guide for the Lesson on **correlation strength**

Standard:

8.11(A)

Content Objective:

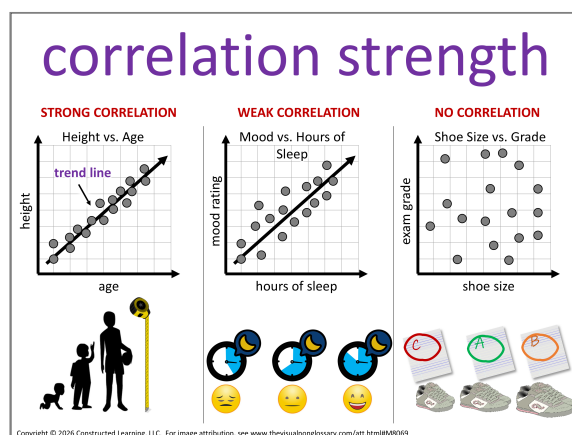
We can describe the **correlation strength** of a scatterplot as strong, weak, or having no **correlation** based on how closely the data follows a **trend line**.

Language Objective: Answer the following question in complete sentences using the sentence stem and the key vocabulary of the lesson:

How do you think the **strength** of the **correlation** helps us see the pattern between **variables**?

*I think the **strength** of the **correlation** helps us see the pattern between **variables** by...*

Other key vocabularies: [trend line](#), [strength](#), [correlation](#), [variables](#)



By studying this visual, students might:

Notice	Wonder
There are three different graphs.	Why don't some dots follow the line?
There is a line labeled "trend line."	How do you know if it's weak or strong?
Some dots are close together, some are spread out.	Why does the shoe size graph have no pattern?
One graph has dots all over the place.	Does a trend line have to be straight?
There are pictures of clocks, shoes, and grades.	Can things be related but have no correlation?

EXTENDING THE DISCUSSION

- After randomly calling on students, if there is anything from this list that was not mentioned, then ask the class, "Did anyone notice...?"
- After students have shared what they notice, ask the class, "Did anyone wonder...?" using the suggestions above or anything else you might think is interesting or relevant to the lesson.

Structured Conversation Prompts

OBSERVATIONAL	RELATIONAL	INFERENTIAL
What is a correlation strength ? Correlation strength is...	How is correlation strength related to a trend line ? Correlation strength is related to a trend line because...	How do you think the strength of the correlation helps us see the pattern between variables ? I think the strength of the correlation helps us see the pattern between variables by...

Example Student Responses to the Observational Question

Low-Level	High-Level
Correlation strength is how close the dots are to the line. If they are close, it is strong. If they are spread out, it is weak.	Correlation strength is how close the dots on a graph are to the trend line . If the dots stay close to the line, the correlation strength is strong. If the dots are spread far apart, the correlation strength is weak.

RESPONDING TO RESPONSES

Emphasize and celebrate each student's use of the key vocabulary to support a culture of "no wrong answers."

STRUCTURING STUDENT CONVERSATIONS

Have students list observations from the visual as a warm-up, then use the Q-SSS-A process to guide small-group conversations. In the slide decks, brackets can be moved to prepare the structured conversation. In the example to the right, students will be instructed: [Q-SSS-A](#).

- To put a thumb up, then lower their hand when they are ready to answer the question
- To share with their elbow/shoulder partner, and that the student with the darkest shoe will share first
- That they will be randomly called on after the conversation



[Here is an example](#) of structuring a conversation with Q-SSS-A.

Note: the inferential question is the same as the language objective. It is recommended that students answer the inferential question in a small-group discussion before answering it individually as the closure or exit ticket of the lesson.

Structured Reading

READING PURPOSE	PAT LIST	POST-READING DISCUSSION
The purpose for reading is to learn about correlation strength and what it can tell you about a relationship between two variables .	• How close the dots are to the trend line • Whether the pattern is strong, weak, or missing • Whether the correlation strength could help make a prediction	Based on the free throw graph, what can you infer about the correlation strength between practice time and shots made? <i>Based on the free throw graph, I can infer that the correlation strength between practice time and shots made is...</i>

STRUCTURING THE READING

Communicate the purpose of reading to the students and instruct them to make a note every time they see something on the PAT ("Pay Attention To") list. How you have students note items on the PAT list is up to you. This could include:

- Putting an asterisk in the margin

- Underlining text that supports the PAT list
- Putting a comment in the margin

Follow the reading with the post-reading discussion. Structure this discussion using the Q-SSS-A process just like the structured conversations in this lesson.

Note: you might find the relational question is better discussed before or after the reading. This depends on whether the relational question is directly related to the reading or might make connections across units.

DIFFERENTIATING THE READING

You will notice that three different reading passages are provided with this lesson. Look at the shapes in the top-left of each passage to determine the grade level.

BELOW GRADE LEVEL	ON GRADE LEVEL	ABOVE GRADE LEVEL
 <i>Triangle is bottom-left</i>	 <i>Square is bottom-left</i>	 <i>Circle is bottom-left</i>

In a class with students at diverse reading level proficiencies, you can give the appropriate reading passage to different students, while having all students follow the same PAT list and post-reading discussion.