

Teacher Guide for the Lesson on **dependent event**

Standard:

7.6(I)

Content Objective:

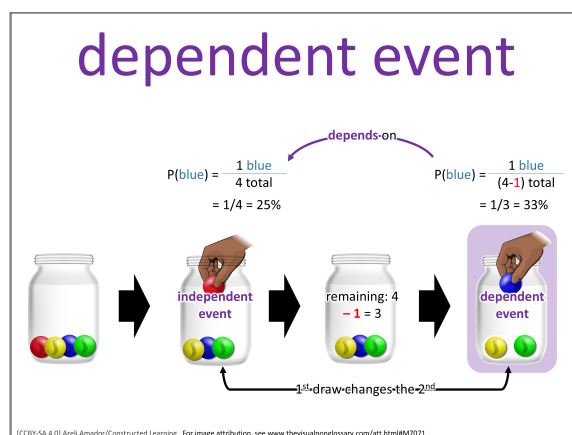
We can explain how a **dependent event** changes what **outcomes** are possible and how likely they are.

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

Why do you think putting the marble back makes the **event** no longer **dependent**?

*I think putting the marble back makes the **event** no longer **dependent** because...*

Other key vocabularies: [compound probability](#), [event](#), [dependent](#)



By studying this visual, students might:

Notice	Wonder
The number of marbles changes after one is removed	Why does the probability change after removing a marble?
The probability changes from 1 out of 4 to 1 out of 3	What would happen if the marble was put back?
The first event affects what happens in the second event	How do we know if an event is dependent or independent?
The marble is not replaced	Does the first event always affect the second event?

• The total number of items decreases after the first draw	• How can we calculate probabilities for multiple events?
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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 dependent event? A dependent event is...	How is a dependent event related to compound probability? A dependent event is related to compound probability because...	Why do you think putting the marble back makes the event no longer dependent? I think putting the marble back makes the event no longer dependent because...

Example Student Responses to the Observational Question

Low-Level	High-Level
A dependent event is when what happens first changes what happens next.	A dependent event is when the outcome of one event changes the probability of the next event .

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 analyze how the first event affects the probability of the second event in a dependent event situation.	• The first event and what is removed • How the total number of items changes • How the probability changes from first to second event • Clues that show the events are connected • Examples where the first event affects the second event	How does the first marker chosen change the probability of choosing the green marker next, and why does this make the situation a dependent event? The first marker chosen changes the probability of choosing the green marker next because... This makes the situation a dependent event because...

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.