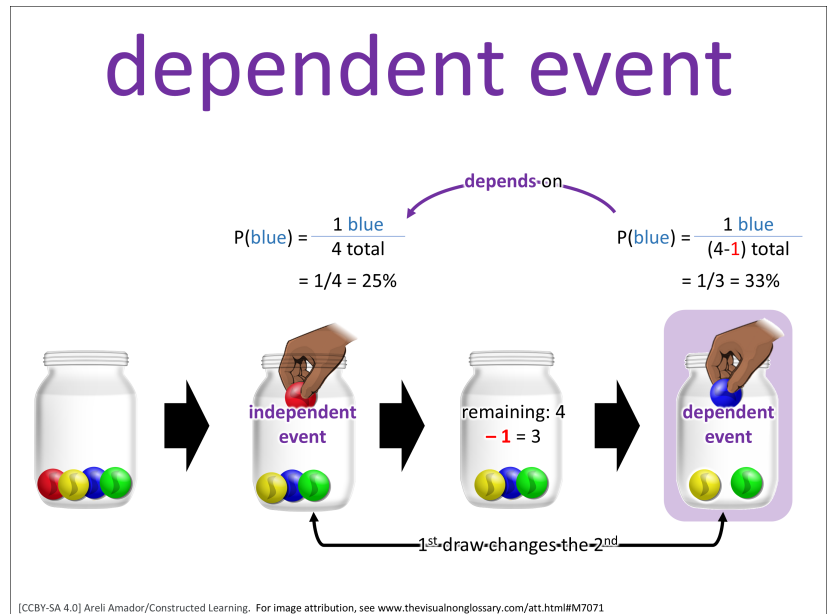


One Choice Changes the Next

The purpose for reading is to analyze how the first event affects the probability of the second event in a dependent event situation.

Look Out For:

- 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



A student looks into a clear jar with 4 marbles: red, yellow, blue, and green. The student picks the red marble first and does not put it back. Now there are only 3 marbles left. The student wants to pick the blue marble next. At first, the chance of blue is 1 out of 4. After the red marble is gone, the chance of blue becomes 1 out of 3. The first choice changed what can happen next. This shows a **dependent event** because the **outcome** of the first draw changes the chance of the second draw.

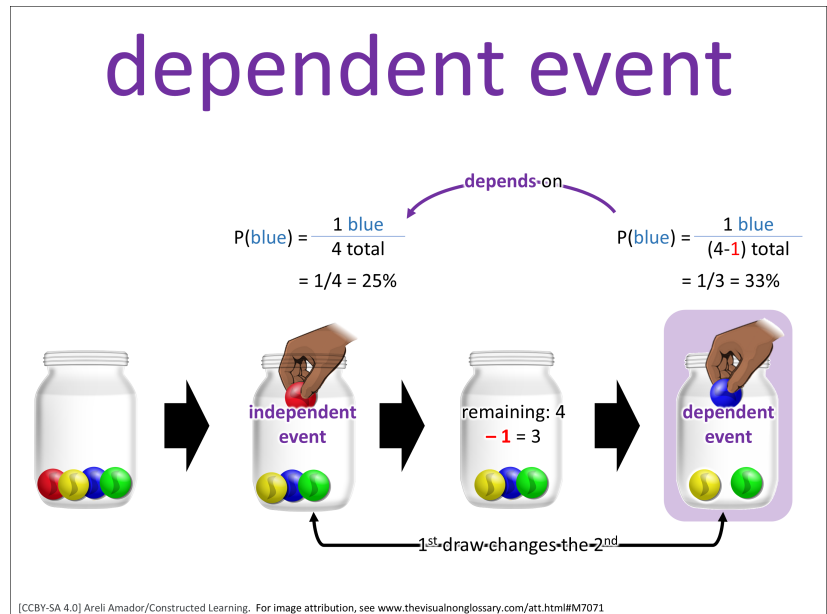
Next, a student picks markers from a cup. The cup has red, black, green, and purple markers. The student takes one marker and keeps it. Then the student wants to pick the green marker. At first, the chance of green is 1 out of 4. After one marker is taken, there are only 3 left. The first choice changes what can happen next. This is also a **dependent event** because the first pick changes the **outcome** of the second pick.

One Choice Changes the Next

The purpose for reading is to analyze how the first event affects the probability of the second event in a dependent event situation.

Look Out For:

- 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



A student looks into a clear jar that holds 4 marbles: 1 red, 1 yellow, 1 blue, and 1 green. The student reaches in and pulls out the red marble first. The marble is not put back into the jar. Now there are only 3 marbles left: yellow, blue, and green. When the student reaches in again, they want to pick the blue marble. At the beginning, the chance of picking blue was 1 out of 4. After the red marble is removed, the chance of picking blue becomes 1 out of 3. The first choice changed what could happen next. This situation shows a **dependent event** because the **outcome** of the first draw changes the probability of what can happen in the second draw.

Later, a student is choosing markers from a cup for a project. The cup has 1 red marker, 1 black marker, 1 green marker, and 1 purple marker. The student picks one marker and keeps it instead of putting it back. Then the student reaches in again and wants to pick the green marker. At the start, the chance of picking the green marker is 1 out of 4. After the first marker is taken out, there are only 3 markers left, so the chance of picking the green marker changes to 1 out of 3 if the green marker was not

already chosen. The first choice changes the probability of what can happen next. This situation also shows a **dependent event** because the result of the first pick changes the probability of the second pick.

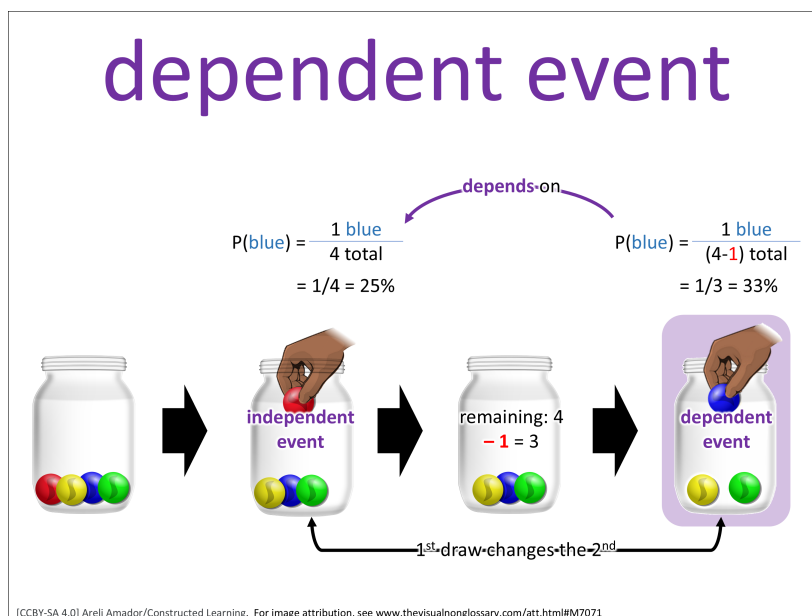


One Choice Changes the Next

The purpose for reading is to analyze how the first event affects the probability of the second event in a dependent event situation.

Look Out For:

- 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



A student examines a clear jar containing 4 marbles: red, yellow, blue, and green. The student draws the red marble first and does not replace it. As a result, only 3 marbles remain in the jar. When the student prepares to draw again, they want to select the blue marble. Initially, the probability of selecting blue is 1 out of 4. After the red marble is removed, the probability of selecting blue increases to 1 out of 3. This change occurs because the first draw alters the total number of possible results. This situation represents a **dependent event** because the **outcome** of the first draw directly changes the probability of the second draw.

In another situation, a student selects markers from a cup containing red, black, green, and purple markers. The student removes one marker and does not return it before making a second selection. At the beginning, the probability of choosing the green marker is 1 out of 4. After one marker is removed, only 3 markers remain, so the probability of selecting green becomes 1 out of 3 if it was not chosen first. The first selection changes the total number of possible results and therefore changes the

probability of the next selection. This is another example of a **dependent event**, where the initial **outcome** influences the probability of what follows.

