

# Dependent Events

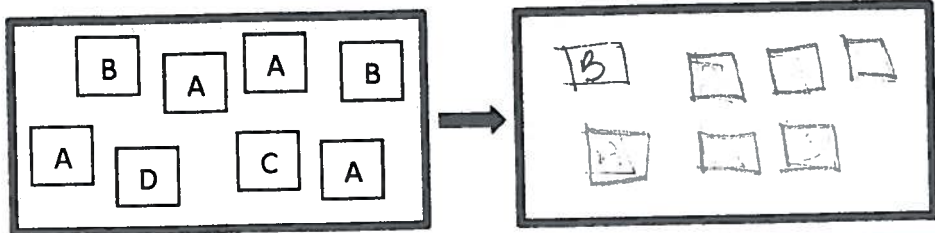
Take out  
+ leave  
out

- \* Two Events
- \* First event changes what is possible (sample space) in the second event.
- \* Do not put back

$$P(A \text{ and } B) = P(A) \cdot P(B \text{ after } A)$$

P(A and D)

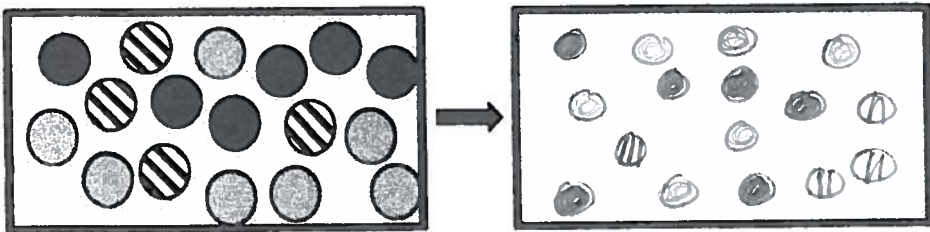
Not replace  
Keep out



$$P(A) = 4/8$$

$$P(D \text{ after } A) = 1/7$$

Not replaced  
Keep out



P(Grey and striped)

$$P(\text{Grey}) = 7/17$$

$$P(\text{Striped after grey}) = 4/16$$

$$\frac{7}{17} \cdot \frac{4}{16} = \frac{7}{17} \cdot \frac{1}{4} = \frac{7}{68}$$