

## Concept: Dependent Events

Name:

### COMPUTER COMPONENT

**Instructions:** Select the computer program *Understanding Probability* (Neufeld)  
Follow the instructions to the Main Menu.  
Select *Dependent Events* from the Main Menu.



Work through all sections of the following topics **in order**:

- *In This Topic*
- *What Are They?*
- *Examples*
- *Probability*
- *Patterns and Summary*
- *Practice Questions*



As you work through the computer exercises, make your own notes in the **SUMMARY** section of this page.

When you reach the end of the section *Practice Questions* on the computer, move on to the **OFF COMPUTER EXERCISES** below.

### SUMMARY

#### > *What Are They?*

**Recall:** When the outcome of one event has **no** effect on the outcome of another event, the events are said to be \_\_\_\_\_ events.

#### **Dependent Event:**

The outcome of event 1 \_\_\_\_\_ the outcome of event 2.

The outcome of event 2 \_\_\_\_\_ on the outcome of event 1.

#### > *Probability*

*example 1:* Three blue balls and 1 red ball are placed in a box. What is the probability of removing two blue balls, if the first ball is kept and not replaced?

*solution:*

*example 2:* A bag contains tiles with letters on them. What is the probability of pulling out a T, keeping it, then pulling out an E tile?

*solution:*

*example 3:* A gardener shows a flower box that he has planted. It contains two plants that will give yellow flowers, one plant that will give a blue flower, and six plants that will give red flowers. What is the probability that you remove two yellow flowers if you do not replace the first one?

*solution:*

> ***Patterns and Summary***

*Pattern for Dependent Events:  $P(A(B \text{ after } A \text{ removed}))$  : decrease the favorable and possible choices by 1.*

**OFF COMPUTER EXERCISES**

1. The teacher of a class that contains 12 boys and 16 girls needs to pick two volunteers. She randomly selects one student, and then another student from the class. Find the probability that ...
  - (a) she chose one boy then one girl.
  - (b) she chose one boy and then another boy.

2. A bag contains a number of coloured gum balls: 2 green, 10 orange, 5 blue, 3 yellow. Your friend Candy randomly picks a gum ball, then you do the same. What is the probability that ...
- (a) Candy selects a yellow gum ball and you select an orange gum ball?
  - (b) Candy selects an orange and you select an orange gum ball?
  - (c) Candy selects a green gum ball and you select a blue gum ball?
  - (d) You both select red gum balls?
3. What is the probability that from a normal 52 card deck, you randomly draw a 5, and then without replacement, you select the Queen of Hearts?
4. In your piggy bank, you have 15 quarters, 2 dimes, 1 nickel and 32 pennies. You tip the bank, and out rolls one, then another, then another coin. Find the probability that the coins came out as follows:
- (a) 1 penny, 1 quarter, 1 dime.
  - (b) 1 penny, 1 quarter, 1 penny.