Supplemental: Game Programming

In game programing, you need a way for the computer to come up with random selections, so that it can flip a coin or roll a pair of dice or shuffle a deck of cards or tell a monster when to pounce.

C++ provides a "random number generator". To randomly "draw" a whole number with a value between 0 and 9, inclusive, use this expression, with the `%` operator explained in section 3.3's "Get the Remainder" sample:

```
rand() % 10
```

Each result is equally probable. Add 1 to the above in order to get numbers in the range 1 to 10, inclusive. Here's how to simulate the roll of a six-sided die:

```
1 + (rand() % 6)
```

Here's how to simulate the roll of two six-sided dice:

```
(1 + (rand() % 6)) + (1 + (rand() % 6))
```

Use of random numbers in C++ requires two includes: `#include <ctime>` and `#include <cstdlib>`. You also need this as the first statement in main: `srand(time(0));` , or else the sequence of random numbers will be the same every time your program runs!

Here's something you'll need to remember – if you use `srand(time(0));`, it should *not* appear anywhere else in your program except as the first statement in main, so that it is never executed more than once in a run of a program.