

## Chapter Seven: Sprites

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### Teaching Notes

In this chapter, the student will learn about Sprites. A Sprite is a graphical object on the screen that we can move and manipulate with our code. Sprites can be simple, inanimate, immovable objects or complicated, animated, movable, objects that can interact and collide with one another. Sprites are a big part of game programming. This chapter will introduce the Sprite library, which defines a Sprite properties and the functions that we will use to manage our Sprites for the remainder of the course.

### Lesson One: Sprite Concepts

Lesson One will cover the basic concepts of Sprites. The student will learn about positioning sprites on the screen and specifying their size. We will begin reviewing the properties and functions available in the Sprite Library.

After this lesson, the student should understand the following:

- A sprite is a graphics object on the screen that you can move and manipulate with code.
- Sprites can be simple objects or complicated animated and interactive objects.
- A single game can have many different sprites.
- The Sprite Library is a collection of functions and variables that are common to all sprites.
- Each Sprite will have an upper-left point stored in the **UpperLeft** property.
- Each Sprite will have a size stored in the **Size** property.
- To set or get the center of a Sprite, use the **SetCenter()** or **GetCenter()** functions.

### Lesson Two: Introducing Bubble Blaster

Lesson Two will introduce the student to the game Bubble Blaster. This game is similar to the Asteroids game, which was very popular game in the late 1970s and 1980s. Bubble Blaster involves a spaceship (shaped like a triangle) and a group of 'bubbles' (circles) that float around the screen in random directions. The object of the game is to pop all of the bubbles before they hit the spaceship. The game starts out with a spaceship and three large 'bubbles'. When a large 'bubbles' is shot, it will immediately turn into two medium-sized 'bubbles'. When a medium 'bubble' is shot, it will immediately turn into two small-sized 'bubbles'. The small 'bubbles' just disappear when they are shot. The game is over when all the bubbles are gone.