

## Lesson 5

### Mazes 1-5

This lesson involves the understanding of what a maze is and different components that make up a maze. Have a discussion with the boys and girls about mazes and what will be involved in navigating mazes. These mazes could be used for the Go and Blockly applications. These mazes help children practice the basic drive features of Go and the Drive folder in Blockly. These are beginner mazes and teachers/campers are encouraged to take these designs and add to them to create their own mazes. We recommend PVC pipe because it is easy to work with and very child-friendly. The children can easily put together the different pieces of the PVC with the different size lengths and the connectors in the shape of elbows, couplings, and tees. However, any materials can be used to construct these mazes.

If you decide to use PVC pipe, you can purchase it at your local Home Depot or hardware store. We recommend using 1 inch PVC pipe and 1 inch PVC elbows, couplings, and Tees to connect the different pieces that will make your mazes. All PVC should be schedule 40.

In order to properly execute these lessons, you will need all of the materials listed below. Having these materials will also be useful when completing the “camper maze design challenge” which will entail the children building mazes with the same materials. Below is the total list of all the PVC you will need with some extra for the student maze design challenges. You will need 12-10 ft lengths of 1 inch schedule 40 PVC pipe cut into these lengths and a rubber mallet to be used to take apart the pieces if they get stuck.

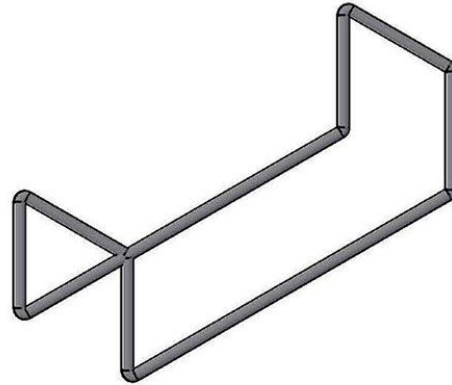
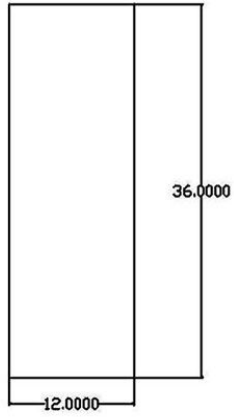
The following list of supplies are for all the material you would need in the event you were to create all 5 mazes at the same time. The diagrams indicate a width of 12 inches wide but you can make them wider by using a 1 ½ or 2 foot piece on both top rails of the arches. The wider the maze the easier it is to navigate Dash through them.

(20) 2 foot pieces	(60) elbows
(20) 1 ½ foot pieces	(20) couplings
(50) 1 foot pieces	
(20) Tees	

It is suggested that all PVC pipe be cut before your program begins. Make sure to have someone who is knowledgeable in cutting this material. Once cut, make sure all ends are smooth. If necessary, use sandpaper or file to smooth rough edges. **CAMPERS SHOULD NOT BE THE ONES TO CUT THE PVC PIPE!!!!** The material list for the maze configurations is listed below including diagrams. When assembling the PVC pipe into mazes make sure not to push into connectors too tightly. Use your rubber mallet to disconnect pieces from connectors if necessary.

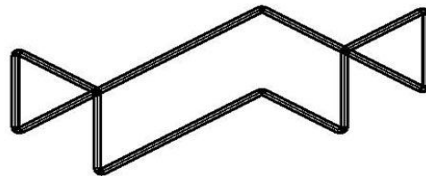
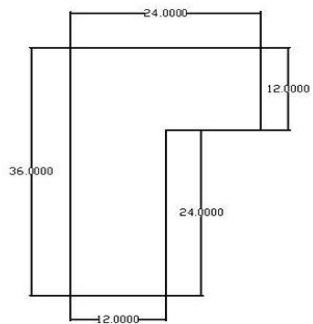
# Lesson 5

Top View



## Maze 1

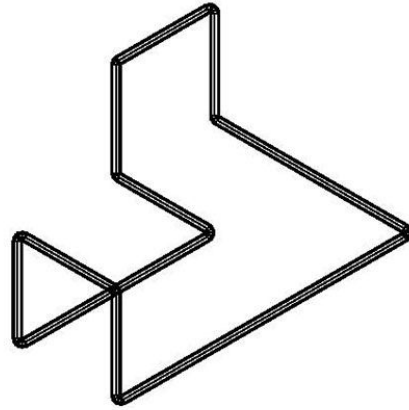
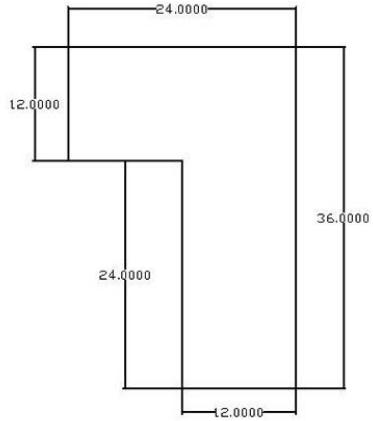
- (4) 1 ½ foot pieces
- (2) couplings
- (6) 1 foot pieces
- (8) elbows



## Maze 2

- (2) 1 ½ foot pieces
- (2) 2 foot pieces
- (7) 1 foot piece
- (10) elbows
- (1) coupling

## Lesson 5



### Maze 3

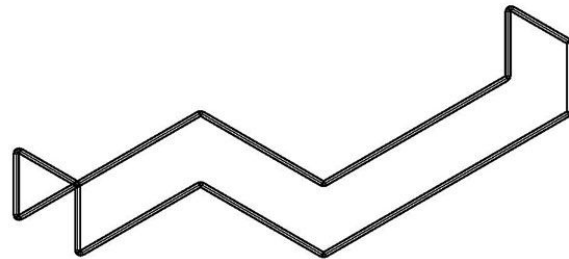
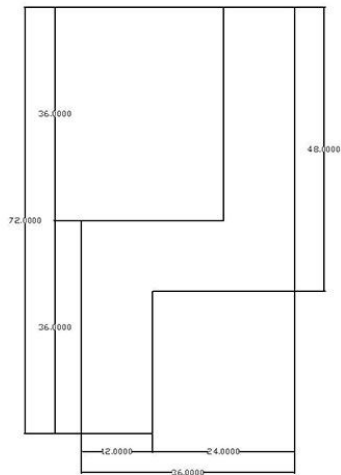
(2) 1 ½ foot pieces

(10) elbows

(2) 2 foot pieces

(1) coupling

(7) 1 foot piece



### Maze 4

(4) 1 ½ foot pieces

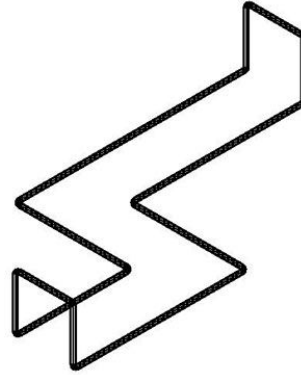
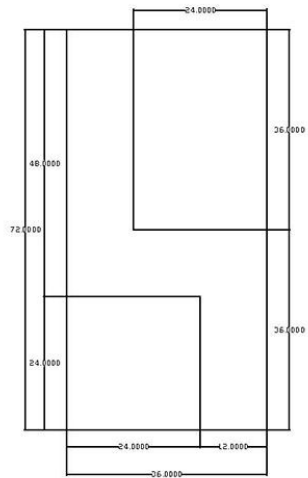
(12) elbows

(6) 1 foot pieces

(3) couplings

(5) 2 foot pieces

## Lesson 5



### Maze 5

- (4) 1 ½ foot pieces
- (5) 2 foot pieces
- (12) elbows
- (3) couplings
- (6) 1 foot pieces