LESSON 17
DESIGN A MAZE AND PROGRAM DASH USING ALL THE CONTROLS WITH THE GO OR BLOCKLY APPLICATION

The Go or Blockly Application will be used based on the ability of the campers in the class. This activity will challenge the campers knowledge and draw upon all the skills learned during the summer. Campers should work in groups of 2-3 and should have access to a supply of PVC pipes, elbows, couplings and tees or any other material you plan to use for their maze construction.

The design process should be followed where they will:
1. Plan their maze on paper
2. Submit plan to the teacher for approval
3. Build their maze
4. Program Dash to complete the maze using all controls of the Go or Blockly Application

This activity can be scheduled over 3 days. Campers should be able to add obstacles, scenery or other items as part of their unique design. This is what we are trying to encourage, out of the box creativity, teamwork, adaptability and critical thinking.

The campers using the Go Application should exhibit the ability to move Dash through their maze and:

1. Drive forward
2. Turn left
3. Turn right
4. Move Dash's head
5. Change the light on head
6. Change the light on chest
7. Record a message
8. Move backwards

They can execute these commands in any order they decide since it's their unique design.

Campers who use the Blockly Application should exhibit the ability to program Dash through their Maze using all the different commands that come with Blockly.

It is very important that the campers understand that they have no restrictions and they are in charge of their Maze project. The teacher should walk around the room and assist where needed. Try to ask questions to help the students arrive at the answer. In this way you encourage the critical thinking process, as well as foster teamwork. In the end, teachers can guide campers in the correct direction so they do not get frustrated. All campers MUST feel a sense of accomplishment and be proud of the work they have created. This is the stimulus that will keep them engaged, excited and asking for more.

Once the campers have completed their Maze creation and Dash programming, they need to work on a presentation they will give to the class. This process adds to their confidence and ability to be in front of a group. Their presentation should be about how they decided on their Maze design and how they programmed Dash in the order they selected.

This activity will be enhanced if there is a good supply of PVC pipe, elbows, couplings and tees or other material you have selected to use for their mazes.
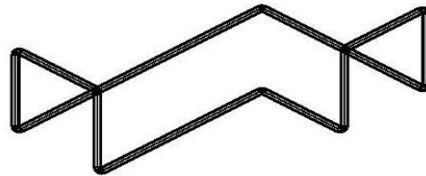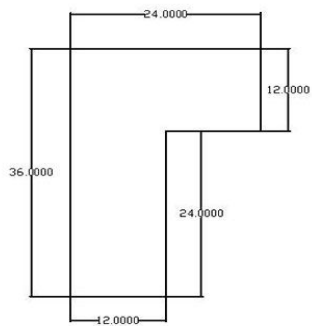
Time permitting, your campers will enjoy trying to move Dash through the other groups Mazes using the Go or Blockly Application based on their ability. Set up the room so the different groups can select or be given a maze to work on This is also an excellent way to have them test their Go or Blockly Application skills.

Top View

36.0000
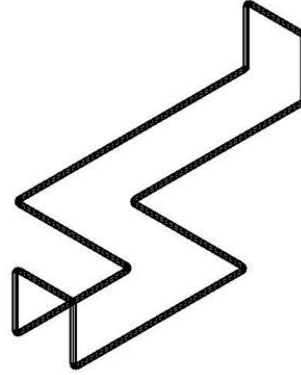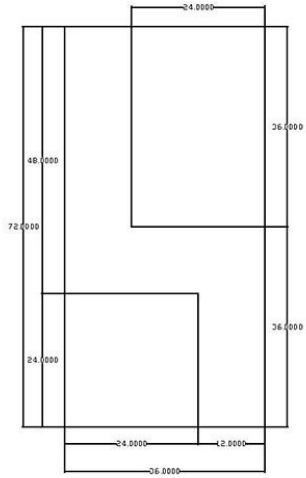
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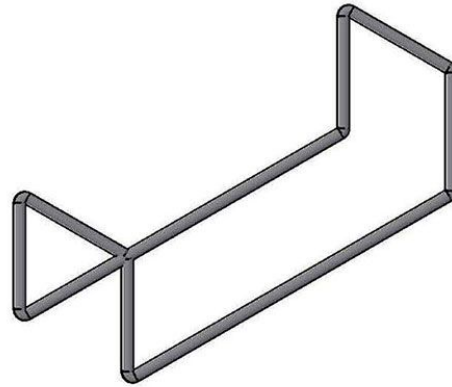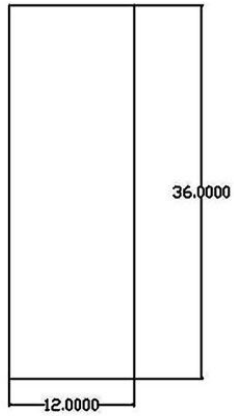
Maze 1

(4) 1 ½ foot pieces

(2) couplings

(6) 1 foot pieces

(8) elbows

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24.0000

12.0000

36.0000

24.0000

12.0000

Maze 2

(2) 1 ½ foot pieces   (10) elbows

(2) 2 foot pieces   (1) coupling

(7) 1 foot piece

Maze 3

(2) 1 ½ foot pieces   (10) elbows

(2) 2 foot pieces   (1) coupling

(7) 1 foot piece

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Maze 4

(4) 1 ½ foot pieces   (12) elbows

(6) 1 foot pieces   (3) couplings

(5) 2 foot pieces

Maze 5

(4) 1 ½ foot pieces

(5) 2 foot pieces

(12) elbows

(3) couplings

(6) 1 foot pieces