



**EXTREME STEAM SCIENCE KIDS  
ROBOTICS PROGRAM  
FOR CODE & GO**

**ACTIVITY – 16**

***This class will cover the following topics***

Advanced maze design  
Engineering process  
Assembling of PVC pipes and connectors

***Materials needed***

All PVC pipes and connectors

Now that the boys and girls have had experience designing a maze it's time to create a more complex one using the PVC pipes and connectors. Demonstrate how to use a tee connector in line with the PVC pipe which gives an opening to attach to. Explain that the mazes they will design must have a second rail on both sides of their maze at some point in addition to at least 2 archways that connect one side to the other. These archways will create an opening for their robot mouse to go under.

Once their maze has been completed they must program their mouse robot to navigate their maze. Let each team program their mouse robot on all of the other team's mazes.

In addition to the advanced maze design this week can be dedicated to designing any structure out of PVC pipe. This activity is excellent for building stronger critical thinking

and collaborative teamwork skills. Have the teams configure their structures into a challenge course for their mouse robot to travel through. All teams should be challenged by all of the other team's mazes.

Have the class combine all of the structures from the class and make one big challenge course. Feel free to use all of the materials from previous lessons to add breadth and scope to this lesson. Next have each team program their mouse robot to navigate the entire course. Place the structures in different configurations on the floor to challenge all the team's ability to program their mouse robot.