

# Let's Make a Marble Run using Inclined Planes

An inclined plane is a flat supporting surface tilted at an angle, with one end higher than the other, used as an aid for raising or lowering a load. The steeper the slope the faster an object can roll down it, but the harder it is to push something up it.



## Gather Materials

Duct Tape, scissors  
toilet paper and paper towel rolls  
Some kind of board - wood, cardboard,  
or plastic  
marbles  
cup



Once you have designed your marble run - how many chutes, what angles you want to set them at, and the length of the chutes, it is time to bring it to life.

Cut your tubes in half (lengthwise), each tube will make two chutes, you may also cut chutes to make them shorter or tape them together to make them longer.

Start at the top of your board and tape one side of the tube to your board with duct tape at the angle you want it to be. Make sure the distance between each chute is not so big that the marble falls off.

Continue down the board, right to left, left to right, until you reach the bottom. Add a cup under the last chute to catch the marbles.



Time your marbles as they run down the chute.  
Change the pitch of your inclined planes.

Time your marbles again. Did they speed up or slow down? Why?

Brainstorm/ draw your plan.



## Alternative plan

Make racing marble runs. Create two boards with different pitched chutes, race your marbles, and see which plan was better. Challenge your buddies to an inclined plane race.



Simple Machine:: Inclined Plane

Race Times:

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