

BALANCE BUILDER

Swing your hips to thread the
marble through the maze



Round and
round the
marble goes!



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Take your kids back to a time before electronic games with a project to test their sense of balance and coordination. Cut a circular maze into a balance board so they can navigate a marble from the outside ring into the centre. Challenge them to beat their best time to keep the game interesting. It's so much fun you might find yourself hopping on for spin!

EASY STEPS TO MAKE YOUR BALANCE BOARD



STEP 2



STEP 3



STEP 4

Gather your supplies

Board 600 x 450 x 30mm plywood

You'll also need

Metal rule; pencil; scrap ply; nails; clamps; builder's square; jigsaw; sandpaper; drill; countersinking drill bit; router fitted with a 20mm straight cut bit; various screws; 25mm spade bit; light grey paint; painting equipment; water-based clear varnish



STEP 6



STEP 7



STEP 8

Here's how

STEP 1 On a piece of scrap plywood, place nails at points 225 and 300mm from one end, which are half the dimensions of the board. Make nails protrude a few millimetres through the other side of the scrap piece.

STEP 2 On the board, draw lines across and along the board from the middle of each side. Clamp builder's square to board so it meets these lines and the corner of the square is at the centre of the board.

STEP 3 Place nails against square so one nail is at the corner and the other on the side. Hold a pencil against the end of the plywood then move the nails along the square so they always remain in contact with it to trace the shape of the ellipse. Reposition square around the board to do all 4 quadrants of the board.

STEP 4 Use the jigsaw to cut out ellipse, following the drawn line. Sand cut edges smooth.

STEP 5 To rout circles, first make a jig out of a broad scrap of 16mm plywood. Measuring from 1 end, mark points at 45, 90, 135 and 180mm down the centreline of the plywood. Use countersinking bit to predrill and countersink holes at each point.

STEP 6 Place router on end of jig that you measured from in Step 5. Make centre of bit aligned with the centreline of the jig and the cutting blade of the bit just touching the end of the jig. Screw through holes in base plate to secure router to jig.

STEP 7 Attach jig to board by screwing through the hole farthest from the router into the centre of the board. Do not over-tighten the screw so the jig can rotate.

STEP 8 Set the depth gauge on your router so it cuts into the board a few millimetres. Start the router then plunge it into the board, rotating it anti-clockwise. After one



STEP 9



STEP 10



STEP 11



STEP 12

STEP 11 Use a 25mm spade bit to drill a hole in the centre of the board. Make the depth match the grooves.

STEP 12 Connect grooves with the router using a piece of scrap timber clamped to the board as a guide for the base plate of your router. Vary the position of the connecting slots around the board to create the maze.

STEP 13 Use sandpaper to smooth grooves to make it easy for a marble to roll around in them. Remove dust then use a mini roller to paint the top surface of the board. Let dry.

STEP 14 Apply 2 coats of water-based varnish to the board and grooves. Allow the varnish to dry after each coat.

STEP 15 Use jigsaw to cut a 100mm diameter circular block out of the plywood. Screw to the centre on the underside of the board. You can vary the thickness of the block to suit the skill level of the rider. ■



STEP 13



STEP 14



STEP 15

Stockists

Bunnings bunnings.com.au
 2250 x 600 x 30mm plywood, \$60.
 Cabothane clear varnish, \$19.10/250ml.

pass, set the cutting depth to 5mm and repeat.

STEP 9 Reposition the jig and router attaching it to the board through the next screw hole in the jig. Repeat Step 8 to rout second groove for the maze. Continue moving the jig to rout the remaining grooves. You may have to unscrew the router to get to the last hole on the jig.

STEP 10 Use a pencil as a depth gauge to compare the depth of the grooves. If necessary, re-rout the grooves so they are all the same depth.