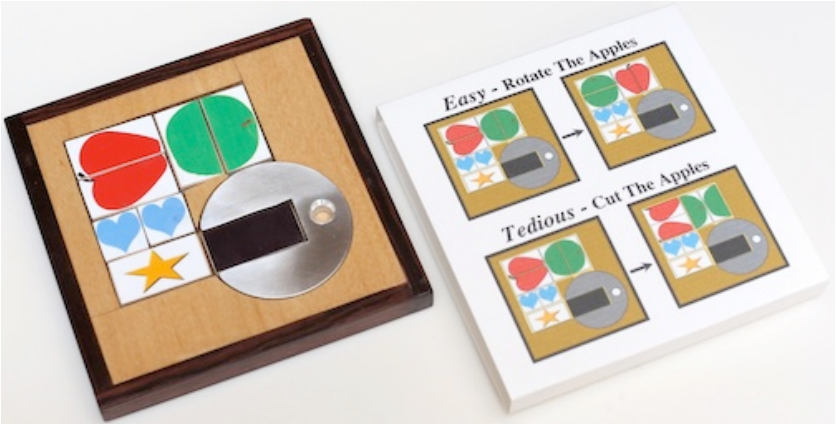
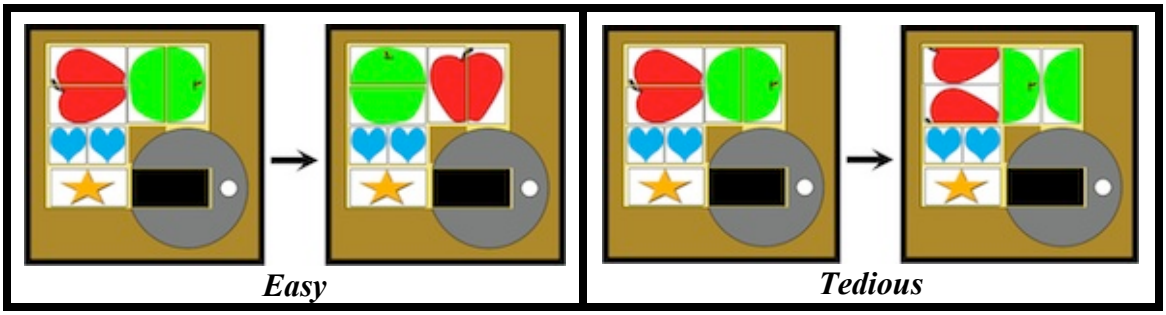
Easy



Designed by Minoru Abe circa 2000; this one made by J. A. Storer 2012.
(1/4" thick aluminum turntable and maple plywood with Kingwood trim, 4x4x1/2 inches)

Remove the black keeper. *Easy* shown on the left below is to rotate the fruit; it can be solved in 226 rectilinear moves if a single move may pass through the turntable independent of its initial orientation, 250 rectilinear moves if both entering and leaving the turntable starts a new move, and 280 rectilinear moves if repositioning the turntable requires an additional move. On the right, which we call *Tedious*, is to cut the fruit; it can be solved in 302, 334, or 374 moves respectively.



These solutions never rotate the 1 2 pieces; below are key steps from the 302 rectilinear Tedious solution that can be viewed as two initial steps, followed by moving 1 2 from one side of the puzzle to the other a number of times to allow an exchange, followed by three final steps:

Step 0:	**Step 9:**	**Step 19:**	**Step 52:**	**Step 56:**	**Step 98:**
C C Q P	1 C C	B B 2	P S C B	Q P C B	C C
B B Q P	2 B B	C C 1	P S C B	Q P C B	P P B B
1 2 $	S S $ Q	S S $ Q	Q $	S $	Q Q $ 1
S S	P P Q	P P Q	Q 1 2	S 1 2	S S 2
Step 101:	**Step 143:**	**Step 146:**	**Step 187:**	**Step 191:**	**Step 232:**
P P C C	Q B P C	B S P C	P P C C	C C S S	B P C S
B B	Q B P C	B S P C	S S	P P	B P C S
Q Q $ 1	S $	Q $	B B $ 1	B B $ 1	Q $
S S 2	S 1 2	Q 1 2	Q Q 2	Q Q 2	Q 1 2
Step 236:	**Step 277:**	**Step 281:**	**Step 286:**	**Step 293:**	**Step 302:**
Q B C S	C C S S	B B C C	B B C C	1 B B	B B P Q
Q B C S	B B	S S	1 2	2 C C	C C P Q
P $	Q Q $ 1	Q Q $ 1	S S $ P	S S $ P	1 2 $
P 1 2	P P 2	P P 2	Q Q P	Q Q P	S S

How This Version Of Easy Was Made:

1. From 1/4" thick maple plywood, cut the pieces.

2. Make the piece graphics on a computer, print on glossy photo paper, cut them out, glue onto the pieces using a glue stick, and lightly sand to blend in the edges of the paper.

3. Make the turntable piece; this one was made by roughing it out from 1/4" aluminum plate on a band saw, finishing on a lathe, drilling and beveling the hole, cutting the rectangle into it with a band saw, and then finishing the rectangle with some light sanding. Note that a hole was drilled and threaded in the center so that a screw could be inserted for the purpose of holding the turntable for turning on the lathe, and then this hole went away when the rectangle was cut.

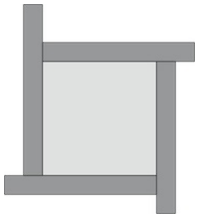
4. From 1/4" thick maple plywood, cut three rectangles to be significantly larger than the puzzle will be (e.g., 1" bigger on all sides); save rectangle 1 for the bottom of the puzzle. Cut rectangle 2 to be an L-shape for the left and top sides of the puzzle, but leaving it too thick and two long in both directions. Cut a hole in Rectangle 3 for the turntable and then cut it to be an oversize L with a partial circle positioned in the corner.

5. Trim off the ends of rectangle 1 a little bit at a time until you get a nice fit for the pieces to move around when it is pushed together with rectangle 2 (use a miter saw to make clean ends so that the two seams will no show much).

6. Using white glue, glue the L's onto the bottom piece, and let dry.

7. Trim the puzzle to be square but still oversized with a band saw, and then using a table saw, trim to leave a 1/2" border around the puzzle area.

8. From a dark wood cut 4 sticks that are 1/2" wide, 3/8" thick, and longer than the edges of the puzzle. Glue them to the edges of the puzzle in an overlapping pattern going around, leaving the excess ends sticking out:



9. After the sticks have dried, trim off the excess with a band saw. Then, on a table saw, make final passes on the edges to form a uniform 1/4" wide dark wood border.

10. Print on light cardboard stock a cover to slide over the puzzle, cut and fold to fit the puzzle so that the ends overlay about 3/4" on the back side, and use a glue stick to join the ends (for a bigger puzzle join in two places to a second piece on the back).