

Manual how to build a 'spinning disc' for 'solar art'

The solar spinning disc is a great promotion and very fun activity! Kids as well as adults enjoy themselves with this toy.

It is a kind of 'record player' which works directly from a solar panel (no battery). We attach a sheet of paper to the disc and let it spin. The kids can paint on the rotating paper using either feltpens or liquid color and brushes. Let them wear an apron to protect their cloth and be ready to get some paint yourself... The kids can adjust the speed of the disc playing with the angle of the solar panel or shading part of a cell.



At the World Scout Jamboree.



At the KISC.



A young artist in Mexico.

Materials list:

A 12V solar panel, 10 – 20W (it worked ok with 15W)

A motor – find a motor which is strong but slow, 12V

Wires

A switch

An old gramophone record

A wire connector with screws (size: the axle of the motor must fit inside)

A Screw that fits into the wire connector

Nuts and Washers

A base and attachment material (can be a wooden box)

4 clips (office paper clips or pegs/clothpins)

Waterpaint and brushes or feltpens

Paper (optional: print your logo on it)

Optional: 3-4 tiny wheels to support the disc

Optional: a disc of plywood of the same size as the record

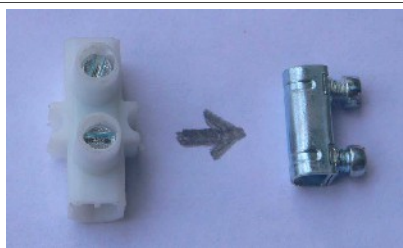
Optional: Apron, cloth protection, 'beret'



Let's build it:

The more 'tricky' part is attaching the disc (record) to the motor. Attach a screw in the whole in the centre of the disc. You might add glue to fix it. The disc should not turn on the screw.

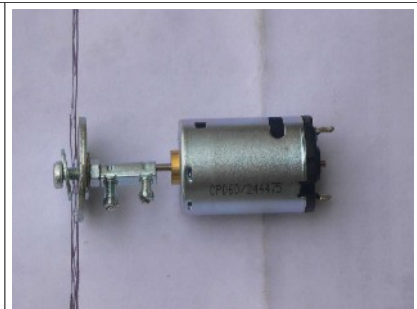
Dismantle the wire connector from plastic parts. We only use the metal part inside with the two screws. Now you can just connect one end to the disc screw, the other end to the motor axle.



Take the plastic off the wire connector.



Plus screw, washers, nuts.



The record will be in between the two washers.

Fix the motor on a base, this might be a box. The little wheels are fixed in a way that the disc can turn on them without wobbling.

Ideally, the panel can be adjusted to the sun's angle.

Pictures of our different ways to build the box / base:



The first box is built at the KISC..



.. and later used at the 23rd WSJ...



The second version at KISC.



This box from Mexico can store all items...



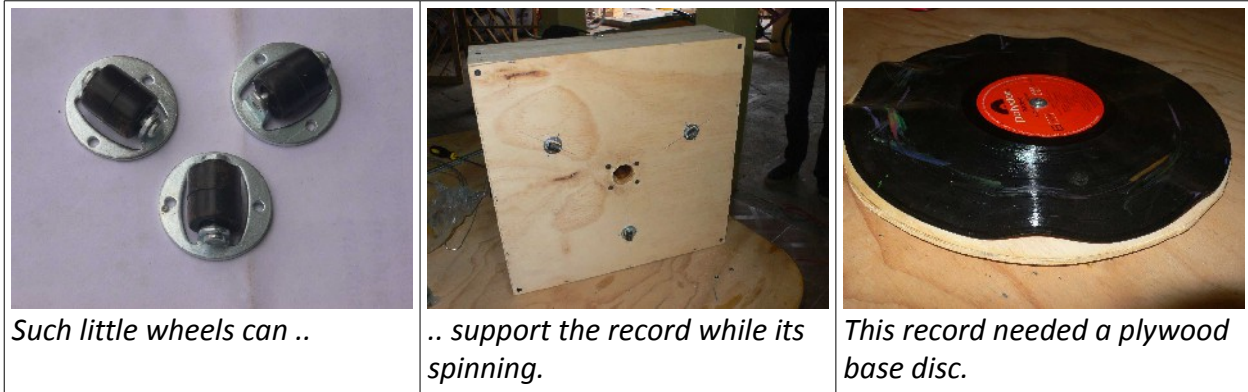
... inside!



Ready with installed record.



More details:



Experiences:

- ◆ It's cooler if you make some fuzz about being an artist. Give them a 'beret' to feel like a French painter.
- ◆ You can print or stamp a 'scouts go solar' logo and website information on every paper before painting on it, the kids will take their painting home...
- ◆ If you leave the panel just laying around on the table, the kids can learn how to get more or less power moving it or they have to send away those kids who shade the panel → the best learning effect!
- ◆ Very young kids tend to force a lot on the brush and stop the record...
- ◆ Not all records are alike, some melt very easily... We had to double them with a plywood disc in Mexico.
- ◆ The base of the 'record player' can be a box in which all little parts (paint, apron, beret, motor, record, ...) and the solar panel fit.

