DIY SPECTROSCOPE: DETAILED INSTRUCTIONAL DOCUMENT

PURPOSE & SCOPE

This DIY activity is envisioned to be set up as a booth at a University event, such as the Engineering Discovery Days, OR as a take-home kit for self-assembly with adult supervision. The target audience is elementary school students, with the purpose of introducing instrumentation and the properties of light. All materials required are easily found at craft stores or online retailers. To facilitate the high traffic of students coming to the booth, it is recommended that volunteers prepare the spectroscope materials ahead of time, particularly the cut cardboard. A student's experience at the booth would be to grab one of the pre-cut, unfolded cardboard, assemble, and decorate the spectroscope. Volunteers would then explain how to use it and guide experimenting and making observations. Students would then be able to take their DIY spectroscope home.

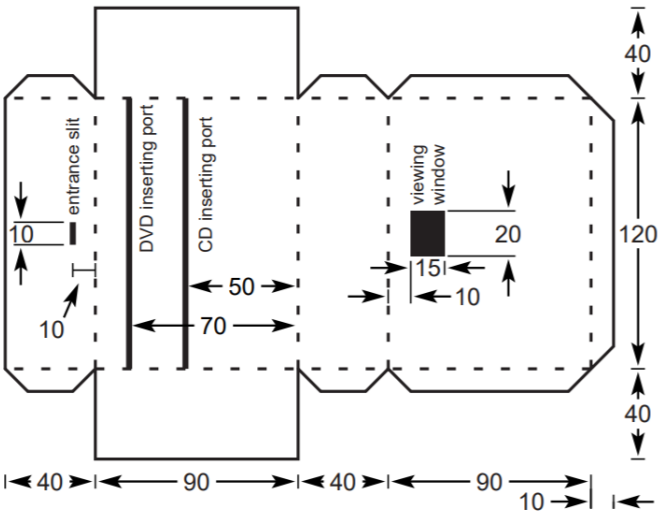
REQUIRED MATERIALS

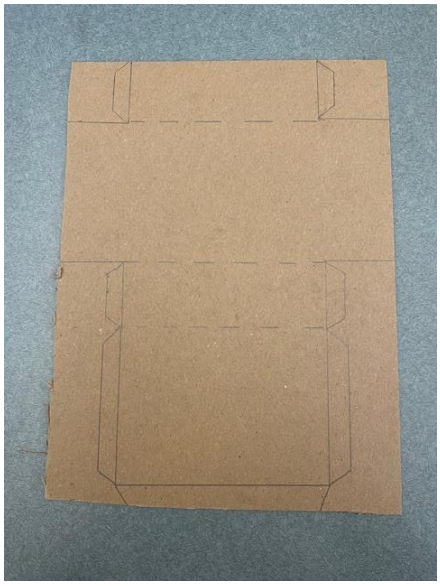
- Thin cardboard sheet (12 x 12 in)
- Ruler
- Scissors or X-Acto knife
- Pencil
- Tape
- DVD
- Light source
- Decorations (markers, stickers, etc.)

PREPARATION OF MATERIALS

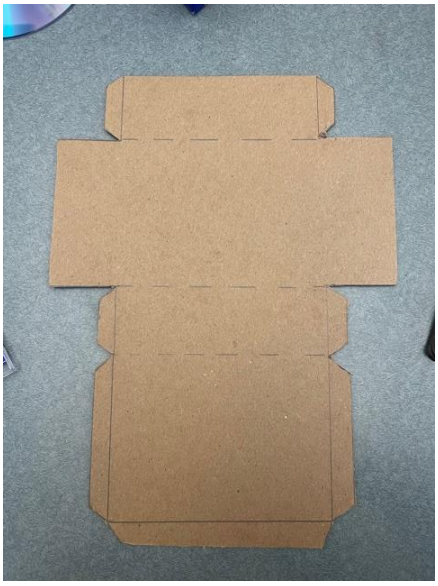
STEP 1

Using the template and a ruler, trace the outline of the spectroscope on the cardboard sheet. The dimensions in the template are shown in mm.

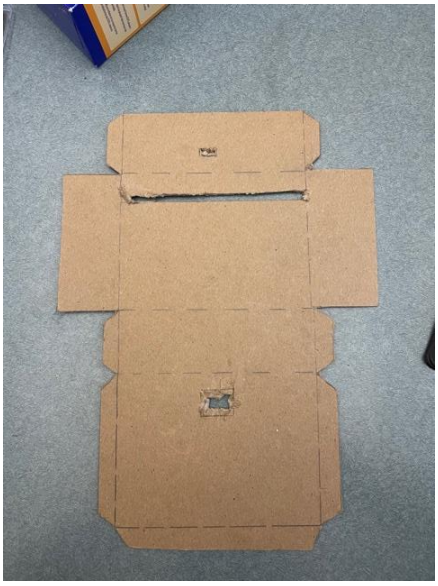




STEP 2
Using scissors or an X-Acto knife, cut the cardboard along the black lines.



STEP 3
Using scissors or an X-Acto knife, cut out the light entrance slit, DVD insertion slit, and viewing port.



STUDENT ASSEMBLY & USE

STEP 1

Fold spectroscope along dotted lines.

STEP 2

Tape the edges of the spectroscope to hold it together as a box.

STEP 3
Insert the DVD into the spectroscope at a 60-degree angle.


STEP 4
Decorate the spectroscope.


STEP 5
Hold the spectroscope up to the sun and look through the viewing port.