

# Knowledge Card Display Fabrication

This article covers *How To* procedures on printing & mounting [Knowledge Cards](#) for “Coffee Table” display & discussion.

**Canon Pixma MX472 Inkjet Printer:** My sole printer is over a decade old, known for being bulky (8”×17”×13” or 20×43×33 cm) & expensive to operate. A relative received this printer / scanner / fax machine “free” with an Apple computer purchase a while back & passed it on to me. The printer was around \$100 on the market @ the time.



However, one gets what one pays for!!!

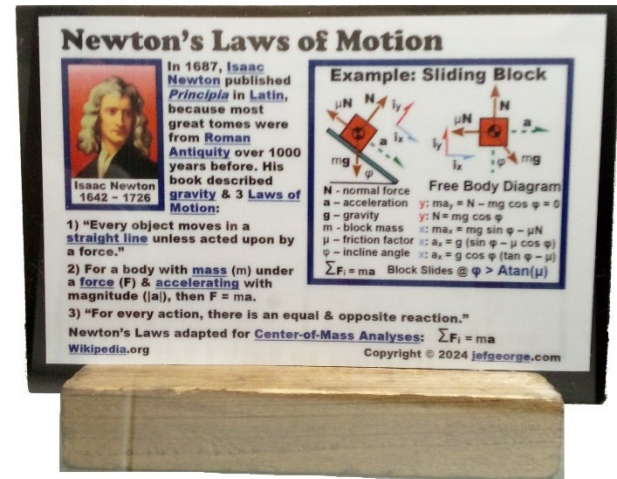
This printer has a dual black & 3-color cartridge set with current replacement cost of around \$50. Up until a couple of years ago, 3<sup>rd</sup> party cartridges did not function well. However, with proper software & ink cartridges, the printer has performed almost flawlessly on (4”× 6” or 10×15 cm) index cards producing high resolution with crisp detailed colors.









Hewlett-Packard inkjet printers are less expensive to operate, even allowing their cartridges to be refilled by the user with kits purchased online. Epson also has cheaper inkjet operational costs, known for large ink reservoirs in its home-use printers.

## Required Equipment & Supplies

The following table gives on-line sources which allow one to purchase the required tools & supplies to mount the knowledge cards for display. Other US suppliers are accessed through a link @ the picture.

	Chalkboard Wood Décor 15×11 cm	Check the base, the chalk board may not be glued square into the slot cut into the wood stand. Allocate 2 knowledge cards per stand.	Hobby Lobby# <a href="#">81032865</a>	Under \$5
	Cricut Waterproof Sticker Paper Letter Size (8½”×11” or 22×28 cm), 5 sheet pair Vinyl (Printable & Laminate).	One package will print 15 Knowledge Cards (3 cards per sheet pair)	Amazon# <a href="#">B0CF6RBHJW</a>	Under \$15



	<p>Oxford Blank Index Cards, 4"× 6" (10×15 cm), White, 100 Per Pack.</p>	<p>Heavier weight paper stock is available. "Ruled" cards with horizontal lines &amp; cards in colors other than "blank-white" are not advised.</p>	<p>Amazon# <a href="#">B001NYAB1U</a></p>	<p>Under \$10</p>
	<p>Aleene's Clear Gel Tacky Glue 4oz.</p>	<p>Recommended for labels that don't adhere to the display; different bottle sizes are available. The dry-clear feature hides mistakes well.</p>	<p>Amazon# <a href="#">B000BY6THS</a></p>	<p>Under \$5</p>
	<p>Cricut Weeder Tool</p>	<p>This tool is used to separate backing from vinyl sheet. The tool has an extremely pointed hook, like a sewing needle or pin.</p>	<p>Amazon# <a href="#">B07SRDNCLN</a></p>	<p>Under \$10</p>
	<p>EXPO Low Odor Dry Erase Markers, Black, Ultra-Fine Tip, 4 Count</p>	<p>Any <b>non-permanent</b> pens can be used marking guides on the clear laminate, then wiped clean.</p>	<p>Amazon# <a href="#">B00I8OBAKE</a></p>	<p>Under \$8</p>
	<p>Westcott Stainless Steel Office Ruler Standard/Metric, 12" (30 cm) Long.</p>	<p>Any measurement device plus straight edge will suffice. 12-inch (30 cm) measures are the max required.</p>	<p>Amazon# <a href="#">B00BX9O1ZC</a></p>	<p>Under \$10</p>
	<p>Westcott 8-inch Stainless Steel Scissors</p>	<p>Any functional scissors of reasonable length (8 inch or 20 cm). See <b>Warning</b> below.</p>	<p>Amazon# <a href="#">B00VJ3MXCU</a></p>	<p>Under \$8</p>
	<p>Westcott 12" Carbo-Titanium Wide Body Paper Trimmer</p>	<p>Several brands of paper cutters can be chosen from. The 1 foot (30 cm) cutting width is needed.</p>	<p>Amazon# <a href="#">B072RSM5NM</a></p>	<p>Under \$35</p>
	<p>FloraCraft Smooth FōM Polystyrene (1×11.9×11.9 in) or (1.5×30.2×30.2 cm)</p>	<p>The square foam is cut to 6 4"×6" (10×15 cm) pieces to place between each finished display to store or ship.</p>	<p>Amazon# <a href="#">B0019IG8HG</a></p>	<p>Under \$15</p>

### 3 Knowledge Cards per Letter-Size Sheet

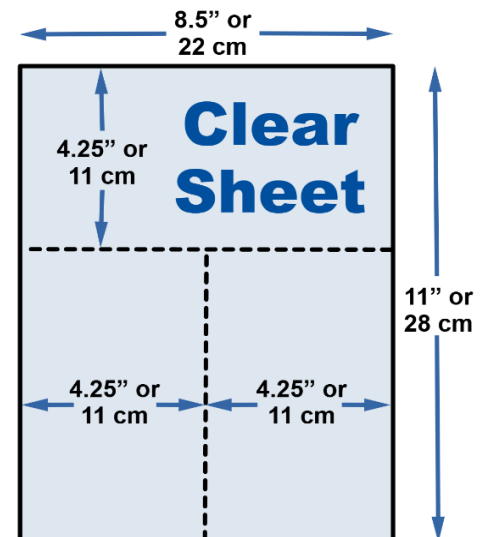
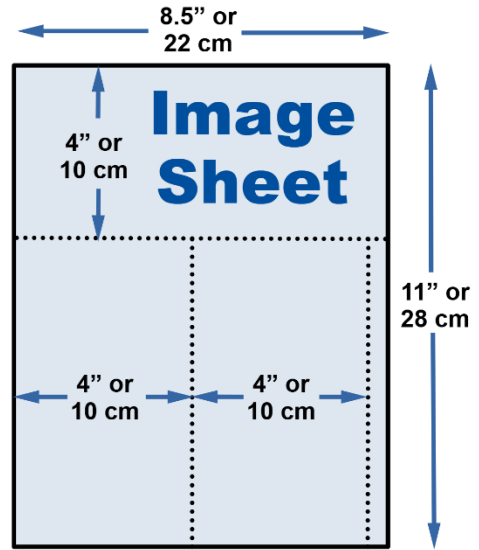
**Image Sheet Preparation:** The letter-size sheet of material is the primary size vinyl from which knowledge cards are printed. Up to 3 cards can be printed from a standard-size vinyl sheet (8½"×11" or 22×28 cm) as shown in the *Image Sheet* diagram to the right.

The 4" (10 cm) width strip is the principal strip dimension fed into the inkjet printer. The vinyl surface to print on is usually placed face down. Paper 4"×6" (10×15 cm) index cards can be placed beneath the vinyl cards to improve the sheet feeder function of the printer. The length of the strip can vary & is trimmed to the required dimension **after** the clear laminate is applied to the printed image. **All** internal edges (dotted) shown in the diagram should be cut by the paper cutter to have straight edges.

**Clear Sheet Preparation:** To get 3 knowledge cards on a laminate sheet, draw (do **not** cut) internal (dashed) lines with **dry erase** ink on the non-sticky side of the laminate letter-sized sheet **before** its backing is removed. These dimensions are shown in the *Clear Sheet* diagram to the right. The markings will be erased after the backing is removed; vinyl cards are placed & the 2-ply sheet cut to final dimensions. The dashed lines are offset from the vinyl cut dimensions to allow manual placement of the pre-cut & printed image cards.

### Procedure

1. Select the knowledge card to print.
2. In a pdf viewer, select that the printer will be printing to 4"×6" (10×15 cm) cards.
3. Test print knowledge cards on same-size paper index cards to find best settings.
4. Cut the printable vinyl to a 4" (10 cm) wide strip per the *Image Sheet* diagram.
5. Place the strip 4" (10 cm) side into the printer.
6. Print the card & allow the ink to dry.
7. Mark the clear laminate per the above *Clear Sheet* diagram with **dry erase** ink
8. Remove the sticky back from the clear laminate sheet.
9. Place the clear laminate with marking guides sticky side up on a flat surface.
10. Use the top 8.5" (22 cm) area of the laminate for the initial vinyl image position.
11. Put one 4" (10 cm) edge of the vinyl strip on a laminate edge, graphic down.
12. Bend the vinyl strip into a convex shape & roll the vinyl on to the clear sheet.



13. With scissors, trim each 2-ply sheet to rough dimensions. Do **not** over-trim!
14. With the paper cutter, trim the 2-ply sheet to final straight-edge dimensions.
15. Peel off backing of the 2-ply card & center it on the display stand.
16. Add tacky glue under card edges as required.
17. Wipe away all dry-erase markings on the laminate where visible with linen.



**Warning:** Use sharp scissors only under adult supervision. Pointed scissors should be used only by children over age 6.

For the (Hobby Lobby) chalkboard stand cited here, using a 4"×6" (10×15 cm) card, I cut ¼" (½ cm) off each side leading to a 3½"×5½" (9×14 cm) card vinyl graphic area.

**Variations in the Procedure:** Deviate from the well-trodden path! Experiment & share your results. The above procedure can be modified in other ways:

- Hobby Lobby & Amazon products as on-line orders are cited in this *How To* document. However, you can shop local (e.g. [Hobby Lobby](#) & [Michael's](#)) to support local business. You can get ideas & return unused / incorrect items to local stores easier, also.
- Cheaper sticky-backed paper can be used in an inkjet printer instead of vinyl.
- Vinyl sheets/rolls for printing & laminate can both be purchased separately.
- A clear laminate does not need to be applied over the knowledge card graphics.
- A crude weeder tool may be fabricated from a sewing needle, tape & dowel.
- The wood in the display base is unfinished wood that can be painted or stained.
- Other display stands (like chalkboards) await @ craft & office supply stores.
- Displays stands can be built using wood & glue purchased from craft stores.
- These Physics [Knowledge Cards](#) were designed through on-line accessible clip art & freeware ([1stFreeware.pdf](#)). Design other index cards with topics from Science / Technology / Engineering / Mathematics (STEM) subject matter.

## Conclusion

The purpose of these "Coffee Table" displays is to get more people into STEM careers. When one chooses a STEM major over that of the liberal arts, he or she still may be unemployed for periods of time. However, the starving artist **still** wants to die rich & the starving STEM educated will **still** try to leave a better world!!!

Everett George 16 April 2024  
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