

ArtStraw[™] Architecture

Paper Straws reach all new heights!

Prior to the 19th century, tall buildings were a rarity. The invention of the passenger elevator in the 1850s and the mass-production of steel used for framework opened the door for modern architecture, and the race was on to build higher and higher. As the skyscraper evolved, architects discovered ways to increase the sufficiency of a steel frame so that the outside of a building — the windows and walls — could be light and open, like a "skin" covering the load-bearing frame.

Students can construct their own high-rise buildings (or low-rise designs) that are extremely light and open, with paper straws. Corrugated plastic panels can be cut with scissors, scored, bent and bonded to make joints that position to virtually any angle. The ends of the straws insert into the channels of the plastic (no glue required) and the imagination grows with the construction — higher and higher!

GRADES 5-12 *Note: instructions and materials are based upon a class size of 25 students. Adjust as needed.*

Materials

ArtStraws[™], box of 1,800 (60903-1004); share one among class

Corrugated Plastic Panels, White 20" x 30" (13215-1043); share two sheets among class

Scotch[®] #924 Transfer Tape, 3/4" x 36-yd (23020-1000); share three rolls among class

Westcott[®] All-Purpose Preferred[®] Line Scissors, 7" (57608-4877); share between two students

Optional Materials:

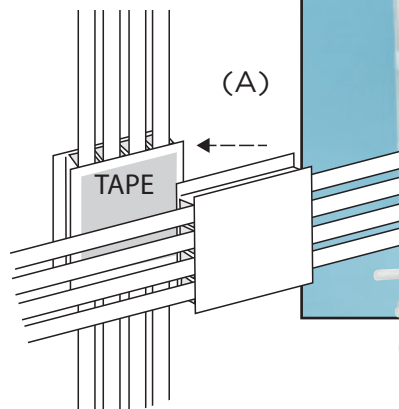
Blick[®] Sculpture Wire, 12 gauge, 350-ft coil (33401-1014)

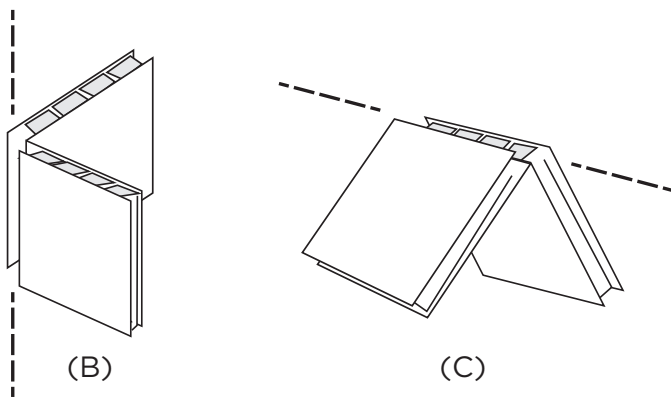
Scotch[®] Double-Coated Foam Tape, 1/2" x 36-yds (23003-1536)

Process

1. Begin with a photo or sketch of a structure. If time permits, use graph paper to create a "blueprint" design to scale. The more planning that is done prior to construction, the easier it is to determine materials needed, sizes to cut the straws, and other aspects of the project.
2. Cut the corrugated plastic sheet down into smaller, more manageable sizes — 1" pieces and strips are very useful.
3. Gently pinch the very end of an ArtStraw and insert it into the channel of a piece of corrugated plastic. It will fit into the channel snugly and stay — no glue or tape is required to hold it in place. Leave the plastic piece on the end of the straw, or thread the straw through the channel to position the plastic somewhere in the middle of the straw. Make a straw "beam" from multiple straws placed side by side in the channels.
4. Some hints for making joints with straws:

Joining Straw Beams: attach two or more beams together with a piece of permanent double-stick transfer tape on the plastic joint, see (A). For large scale pieces, where a strong bond is needed, use Foam Tape.





Process, continued

Creating Angled Joints: if the angle is parallel with the channels, use scissors to cut through just one side of the channel, see (B). If the angle is perpendicular to the channels, use a ruler and an art knife to carefully cut halfway through the plastic channels, see (C).

5. If a straw accidentally bends, simply bend it back into shape and continue to use it. The surrounding straws will support the weight in that area.
6. For large-scale (more than 5-ft tall) and heavier pieces, cut pieces of aluminum wire to reinforce the straws in key weight-bearing areas.

National Standards for Visual Arts Education

Content Standard #1 — Understanding and applying media, techniques and processes.

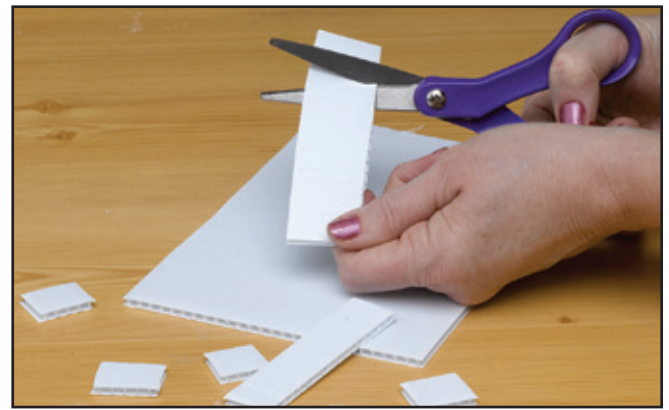
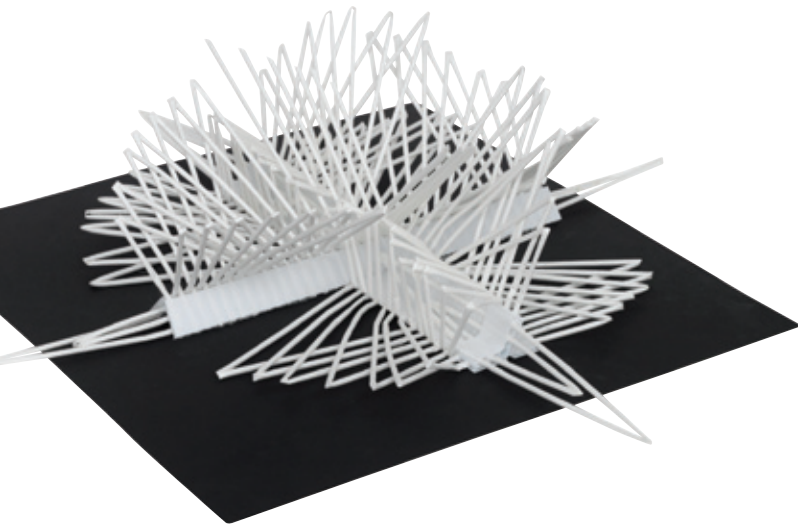
5-8 Students intentionally take advantage of the qualities and characteristics of art media, techniques, and processes to enhance communication of their experiences and ideas.

9-12 Students apply media, techniques, and processes with sufficient skill, confidence, and sensitivity that their intentions are carried out in their artworks.

Content Standard #2 Using knowledge of structures and functions.

5-8 Students select and use the qualities of structures and functions of art to improve communication of their ideas.

9-12 Students demonstrate the ability to form and defend judgments about the characteristics and structures to accomplish commercial, personal, communal, or other purposes of art.



Step 1: Cut corrugated plastic sheets into smaller pieces, using a paper trimmer or scissors.



Step 2: Pinch one end of the ArtStraw and insert into channel. Repeat for all straws.



Step 3: Join corrugated plastic joints together using double-sided tape.

