Technology: Design and Applications
Chapter 15: Modeling Solutions—Terms and Definitions

acetate: a thin plastic used in product and architectural models.

acrylic: a plastic material that comes in sheets and can be purchased at either a hardware or hobby store.

bristol board: similar to common poster board, this product can easily be curved, but is not very rigid. Usually found in sheets 1/16” thick, it is smooth and shiny on both sides.

chart: a graphic aid used to model how a set of information is arranged or highlight a series of events. Charts can also show sets of data.

chipboard: often used for backers in calendars, notepads, and packages of paper. It is gray in color and is more rigid than bristol board. The thickness ranges from 1/32” to 1/8”.

clay: a natural material used to create models.

computer model: a three-dimensional view generated by a computer screen. Some computers can actually “test” the product before it is built.

contact paper: a vinyl material that is sticky on one side. To give a model a certain look, the non-sticky side is printed with a color, pattern, or texture and applied onto another material.

corrugated cardboard: a very sturdy material ranging in sizes from 1/8” to 1/2”. It has outer sheets of heavy paper, and the inner core is made of heavy paper bent into ridges.

double sided tape: tape that is sticky on both sides and used to stick two materials on top of each other.

foam: a type of sculpting material that is sturdy, but easy to shape.

foam core board: a sturdy material that has an inner layer of foam, covered on each side with paper. It is used for final mock-ups and can be used for some prototypes.

formula: the most common type of mathematical model. Formulas help us to understand complex math, science, and technology concepts.

graph: a visual representation of data.

graphic model: a visual representation on paper. These models are used to organize and communicate information.

hardboard: made by compressing and rolling wood fibers together, it is used in a number of ways in models. It is dark brown in color, very hard, and stiff.

hot-melt glue: a type of glue used in modeling. It dries fast and clear. A glue gun is needed to heat and apply the glue. It can be used on most materials, except certain foams.

illustration board: a type of paperboard material used by designers that comes in a variety of colors.

machineable wax: a very dense material cut and shaped in milling machines and lathes. It is used for small models or parts of prototypes.

matboard: museum board. Matboard comes in many colors and a variety of textures.
**Mathematical model:** the use of symbols, along with numbers and letters, to help us understand complex math, science, and technology concepts.

**Mock-up:** an appearance model of a product. It shows how the object will look in real life, but it does not operate. A mock-up is made of easily worked materials, such as clay, wood, or cardboard.

**Model:** a three-dimensional copy of a new product.

**Mounting tape:** a thin piece of foam that is sticky on both sides.

**Paraffin wax:** a mineral wax that can be carved for small models. It can also be heated and cast into a mold.

**Physical model:** an actual three-dimensional replica of the design. These models are built so the designers and clients are able to see what the design will look like.

**Plastic cement:** a very strong adhesive used on plastic pieces. It dries clear and fast.

**Plywood:** a material made by gluing thin sheets of wood together. It is often used as a base for models and normally used in places that will not be seen.

**Polystyrene:** a foam used in construction as sheet insulation. It can be cut and shaped with everything from saws to sandpaper, but hot glue and other types of model glue will melt it.

**Polyurethane:** commonly known as urethane foam. It is often used for larger or thicker models because it breaks easier if it is thinly shaped.

**Prototype:** a working model of a product. It is made to test the design. Usually, a prototype is made from the material that will be used in the manufactured product.

**Schematic:** the use of pictures and symbols, rather than words, to show a process.

**Solid model:** the most complete three-dimensional computer model. These models are used to represent the insides and outsides of designs.

**Spray adhesive:** a type of glue applied by spraying it out of an aerosol can.

**Surface model:** a three-dimensional computer model showing how a certain design will look. It can be shown in different lights and angles, but because the inside is hollow, it cannot be used to show interior details.

**Table:** a graphic model made of rows and columns, often used to compare sets of data.

**Veneer:** a thin sheet of wood that comes in many different widths. It is used to give the appearance of a high quality wood.

**Wax:** a material that can come from several different sources (animals, vegetables, or minerals). It is used for sculpting and molding material.

**White glue:** a safe, water-based adhesive that is very easy to use. It can be used on paper products, foam, and even some wood.

**Wireframe model:** a three-dimensional model that uses lines to represent the edges of objects.

**Wood glue:** an adhesive used to glue pieces of wood. It dries quickly (in 20–30 minutes) and is easy to use.