MATERIALS FOR SCENIC CONSTRUCTION

WOOD

- Lumber (Stock Lumber)
  - Has several characteristics to consider when using
  - Species (soft woods)
    - **Pine** – or "white pine" depending on region, inexpensive, lightweight, easy to work and strong, typically used for lightweight construction such as flat frames, bracing
    - **Fir** – or "Douglas fir", heavier and stronger than pine, typically 1/2 to 1/3 the cost, used for heavier construction, weight bearing structures, platform frames and legs
  - Grade
    - **Common** (Non-stress Graded Lumber)
      - Graded for serviceability as well as appearance**,** descending order No. 1 – 5, often use #2 or Better
      - No. 1 (Construction) – moderate sized knots, paints well
      - No. 2 (Standard) – larger, more numerous knots
      - No. 3-5 – knotholes and splits, doesn't paint well
    - **Select** (Appearance Graded Lumber)
      - Graded A-D, used for furniture, trim, siding, paneling
      - A Select – no knots, splits or visible defects
      - B Select – few, small defects but nearly perfect
      - C Select – small tight knots
      - D Select – numerous pin knots and small blemishes
    - **Dimension** (Stress Graded Lumber)
      - Includes most 2x softwood, used for structural members
      - STD&BTR (Standard & Better) – for 2x4
      - UTIL&BTR (Utility & Better)
      - STUD (10' Max) – for wall construction

- Nominal Sizing
  - The Department of Agriculture sets standards for the thickness, width, and length of all stock lumber
  - Sizing is done on rough boards before they are milled to a smooth surface causing the difference between **actual dimension** and **nominal dimension**
  - Nominal to Actual Sizing – ≤ 1" subtract 1/4"
    1" < 8" subtract 1/2"
    8"+ subtract 3/4"
  - Example – 2x4 = 1-1/2" x 3-1/2"
    1x12 = 3/4" x 11-1/4

- Molding and Trim
  - Decorative lumber manufactured from pine
  - Used for architectural trim on door and window casings, baseboards, chair rails, cornices and wall panel

- Sheet Goods (Sheet Stock)
  - Plywood
    - Made by laminating (gluing) several thin layers of wood together, grain alternates at 90° angle to increase strength
    - Manufactured in interior and exterior grades based on the glue used, exterior uses waterproof glue, interior water soluble glue
    - Typically has three or five layers, though expensive plywood can have 7 or 9
    - Listed by actual thickness (3/4" common) and cut into 4'x8' sheets, can get specialty sizes for doors (3'x7') and ping-pong tables (5'x9')
    - Graded based on appearance of the plywood faces
      - AA – smooth sanded on both sides, free from knots, plugs and grain irregularities
      - AD – one face (A) is as above, the other face (D) is not
      - CD – rough sanded both sides, each face may have knots, plugs and irregularities, may be slightly warped
      - CDX – as above but the interior layers can be even worse grade than D

  - **Luan** – or Mahogany overlay, 1/8" plywood used as door skin and used to cover TV flats, flexible
  - Furniture plywood is manufactured with higher quality filler layers, usually AA or AD and can be made from hardwoods such as mahogany, birch, oak or walnut
  - **Bender Board** – plywood made with the grains running in the same direction, able to bend into extreme curves
- Particle Board
  - Wood chips and sawdust mixed with glue and compressed into 4'x8' sheets, 3/8, 1/2, 5/8, 3/4" thick
  - Cheaper than ply, but heavier and not as strong
  - Used for subflooring and cabinet shelves
- OSB (Oriented Strand Board) or Wafer Board
  - Composed of larger chips of wood, glued together
  - As strong a ply, lighter and cheaper, doesn't look as good
- Masonite
  - Made from compressed wood pulp, available in **untempered** (light brown, soft surface) and **tempered** (dark brown, extremely hard surface)
  - Used for stage flooring, easily painted
- MDF (Medium Density Fiberboard)
  - Fine grain version of particle board
  - Edge machines well, routing; smooth surface, paints well
  - heavy