| **Set Design & Construction**  ***Unit 3: Design***  ***Timeline: 4 weeks*** | | | | | |
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| **Targeted Standards** (Write the overall NJSLS standards that are most applicable to this unit.).  **Creating**  Anchor Standard 1: Generate and conceptualize artistic ideas and work.  Anchor Standard 2: Organize and develop artistic ideas and work  Anchor Standard 3: Refine and complete artistic work.  **Performing**  Anchor Standard 4: Select, analyze, and interpret artistic work for presentation  Anchor Standard 5: Develop and refine artistic techniques and work for presentation.  **Connecting**  Anchor Standard 10: Synthesize and relate knowledge and personal experience to make art.  Anchor Standard 11: Relate artistic ideas and works with societal, cultural, and historical context to deepen understanding. | | | | | |
| **Rationale and Transfer Goals** : *This section addresses how students will use what they learned for some useful accomplishment.* *Use a short narrative form to explain what students are learning and learning to do in this unit as a whole experience. Transfer of knowledge should 1) be based on mastery, not just rote knowledge; 2) be connected to real world contexts and/or study of other subjects (How will this help me in life, K-12 school, college, or career?); and 3) offer opportunities to develop 21st century skills and habits of mind. You may wish to include overarching questions or beliefs that guide the whole year’s work, such as “We are learning to read and write with thought and purpose.”*  Design is a fundamental tool to all theatrical elements. Students should become familiar with the design process for all technical elements and the application of those plans for temporary buildings, technology and construction. | | | | | |
| **Enduring Understandings:** What are the most essential conclusions that students should be guided towards throughout this unit?  Theatre artists rely on intuition, curiosity, and critical inquiry  Theatre artists work to discover different ways of communicating meaning.  Theatre artists refine their work and practice their craft through rehearsal.  Theatre artists make strong choices to effectively convey meaning.  Theatre artists develop personal processes and skills for a performance or design.  Theatre artists allow awareness of interrelationships between self and others to influence and inform their work.  Theatre artists understand and can communicate their creative process as they analyze the way the world may be understood.  Theatre artists critically inquire into the ways others have thought about and created drama processes and productions to inform their own work. | | | | | |
| **Essential Questions**: What are the questions that will guide critical thinking about the content of this unit? Essential questions should, in part, be thought-starters toward the enduring understandings.  What happens when theatre artists use their imaginations and/or learned theatre skills while engaging in creative explorations and inquiry?  How, when, and why do theatre artists’ choices change?  How do theatre artists transform and edit their initial ideas?  Why are strong choices essential to interpreting a drama or theatre piece?  What can I do to fully prepare a performance or technical design?  What happens when theatre artists foster understanding between self and others through critical awareness, social responsibility, and the exploration of empathy/  What happens when theatre artists allow an understanding of themselves and the world to inform perceptions about theatre and the purpose of their work?  In what ways can research into theatre histories, theories, literature, and performance alter the way a drama proceeds or production is understood? | | | | | |
| **Content/Objectives** | | | **Instructional Actions** | | |
| **Content**  ***What students will know*** | **Skills**  ***What students will be able to do*** | | **Activities/Strategies**  ***How we teach content and skills*** | | **Evidence (Assessments)**  ***How we know students have learned*** |
| When and what to read a play and locate sound, light, prop, and scene change cues.    How to explain and defend choices for cues and other theatrical elements based on context of the script.    How to select, read, and analyze a play for its scenic design needs?    How to research styles and designs as appropriate to the play.    Concepts and technical needs of the play from a directorial viewpoint and make design choices appropriately.  Use scenery design and construction vocabulary.    How to design scenery which incorporates all physical and aesthetic requirements described in the script or by the playwright/director/stage manager.    How to construct a scale model set that includes floor plan and renderings accompanied by a narrative, and a critique.    How to construct Theatrical Design plots (lights, sound, costumes, etc.) and renderings accompanied by a narrative, and a critique.    When to designate an appropriate scale for the project while executing accurate and timely conversions from feet and inches to the desired scale.  What a Floor/Ground Plan and Technical Plots are.    How to demonstrate proficient use of standard measuring devices and architect rulers as they apply to scale model set construction. | Read a play and locate sound, light, prop, and scene change cues.  Explain and defend choices for cues and other theatrical elements based on context of the script.  Select, read, and analyze a play for its scenic design needs.  Research styles and designs as appropriate to the play.  Discuss the concept and technical needs of the play from a directorial viewpoint and make design choices appropriately.  Use scenery design and construction vocabulary.  Design scenery which incorporates all physical and aesthetic requirements described in the script or by the playwright/director/stage manager.  Construct a scale model set that includes floor plan and renderings accompanied by a narrative, and a critique.  Construct Theatrical Design plots (lights, sound, costumes, etc.) and renderings accompanied by a narrative, and a critique.  Designate an appropriate scale for the project while executing accurate and timely conversions from feet and inches to the desired scale.  Understand Floor/Ground Plans and Technical Plots.  Demonstrate proficient use of standard measuring devices and architect rulers as they apply to scale model set construction. | | Teacher Lead instruction, followed by student demonstrations.  Hands-on experiences using different materials and media to design.  Research  Group and individual work. | | Teacher observation  Peer critiques  Self analysis and evaluation |
| **Spiraling for Mastery**  **Where does this unit spiral back to other units from this or previous years**  **in order to ensure that students retain mastery of what they’ve learned?** | | | | | |
| **Content or Skill for this Unit** | | **Spiral Focus from Previous Unit** | | **Instructional Activity** | |
| Demonstrate proper use of design and planning techniques.  Understand how to work cooperatively with others to accomplish a task  Identify and apply various construction techniques.  Use technology in various situations. | | **Set Design & Construction**  **Unit 2** | | Teacher demonstrations  Hands on experiences | |
| **Career Readiness, Life Literacies, and Key Skills:**  9.3.12.AR.3 Analyze the lifestyle implications and physical demands required in the arts, audio/visual technology and communications workplace.  9.4.12.CI.3: Investigate new challenges and opportunities for personal growth, advancement, and transition.  9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice.  9.4.12.TL.3: Analyze the effectiveness of the process and quality of collaborative environments. | | | | | |
| **Key resources:**  Chosen script/show for Play and Musical.  Theatre: Art in Action, National Textbook Company/Contemporary Publishing Group, Inc. 1999 | | | | | |
| **Interdisciplinary Connections:**  ELA: NJSLSA.R2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas  Physical Education: 2.2.12.MSC.3: Design, lead and critique rhythmic and physical activity that includes variations in time, space, force, flow, and relationships  Social Studies: 6.1.12.HistoryCC.3.a: Evaluate the role of religion, music, literature, and media in shaping contemporary American culture over different time periods.  6.1.12.HistoryCA.14.c: Determine the influence of multicultural beliefs, products (i.e., art, food, music, and literature), and practices in shaping contemporary American culture. | | | | | |
| **Intersections of History:** Looking at design through history, from earliest theatre to now. How has technology allowed the design to change?  **Black:** Marcus Doshi  **Hispanic:** Jorge Arroyo  **Women:** Dahlia Al-Habieli,  **LGBTQ:** David Korins | | | | | |
| **Important Vocabulary:**  Adhesive (wood glue)  A substance for sticking two materials together by surface attachment. PVA, gripfill, contact adhesive for example  Allen key  A hexagon and L shaped key, available in metric or imperial sizes. Used for tightening 'Allen' screws/nuts bolts  Chuck (Drill)  The chuck will hold a drill bit or router cutter that will be spinning in the tool. Two examples are lathe & drill chucks.  Circular Saw  Is a portable handheld powered saw great for everything from cutting intricate cabinetry work, ripping down timber, cross cutting and even cutting a whole roof!  Combination Square  A combination square is a hand tool used for setting out and marking the work-piece. A square with an adjustable ruler that can mark both 90 and 45 degree angles (see also 'square').  Compass  An adjustable setting out tool used for drawing circles and Scribing timber to irregular surfaces. Consisting of two legs joined at a pivot hinge, one has a point the other holds a pencil.  Countersink bit  A drill bit that bores a pointed hole allowing a screw head to sit flush inside the face of the material, or below the surface so it can be plugged with filler or a wooden pellet and decorated over. Helps to avoid splitting the timber when fixing.  Cross Cut  A cut which runs across the grain of the timber.  Dowel  A straight round wooden peg used to align and hold timber together in a mortice and tenon joint, 'drawer dowels'. Used commonly on staircase to hold newel posts to stair strings.  Epoxy Glue or resin  A really strong glue often consisting of two parts that glues practically anything!  Estimating  Calculating how much materials are required, cost and pricing up work is called estimating.  Face  Surface of finished timber that will be most visible, you tend to work and set out measurements from the face.  Fence  Adjustable straight guide used on table saw or router table for example to push the material against in order to maintain a parallel cut to the blade or cutter.  Filler  Substance used to fill nail holes or irregularities in the surface of material before applying a finishing coat.  Finger Joint  Tapered square fingers used to join material length ways, often used in manufacturing moulding to join short lengths together and minimise waste.  Flush  Difference between flush, shy and proud  When two adjoining surfaces are joined perfectly flat to each other they are flush. Otherwise one is 'proud' and the other 'shy'.  Fret Saw  A saw machine with a very fine blade used for delicate cuts, in thin material.  Grain  The fibres of the wood and their direction are known as the grain. Some common terms you'll hear that refer to the grain and its direction are:  'Crosscut' - Cutting across the grain  'ripsaw' - Cuts in line with the grain  'Against the grain' - For a smooth finish and to prevent tearing always plane or pare (chisel) in the same direction as the grain, its the same principle as shaving.  Grit  If you hear the term 'grit' it could be in relation to either sandpaper or a sharpening oil stone. Typically the more 'grit' the finer the abrasiveness. 40 grit sandpaper is very rough, 120 grit is fairly fine.  Hinge  Commonly made of steel or brass, hinges are mechanical devices that allow two objects to pivot on each other. Typically used on doors, windows, gates etc. Click here to go to a page with tips for fitting hinges.  Jig  An aid used to clamp a work-piece or act as a guide when performing repeat cuts in manufacturing or assembling. Common carpentry jigs available are worktop, hinge and letter-plate jigs.  Jigsaw  A jigsaw is a power tool that is fitted with a small straight blade that moves up and down in order to cut. Can be used to cut circular and other intricate shapes. Click above for more information and tips on using jigsaws, or here for help choosing the right blades.  Kick Back  Kick back occurs when a tool such as a table saw throws the work-piece back towards the operator. It can happen because the timber pinches the blade or the person feeding the timber moves it in the wrong direction. Most tools these days are fitted with anti kickback devices.  Laminates - Luan  (Man made) Laminated materials are those made up of layers glued and joined together such as in beams, or sheet material like plywood.  MDF  Stands for medium density fiberboard. Its a really versatile man made material and is available in a sheet form which is ideal for shelves, window boards and pipe boxings as well as pre-primed moldings such as skirting boards and architraves.  Miter Box  A miter box is a device used to guide a hand saw at 45 degrees. Used for cutting perfect mitres on moldings like architraves, skirtings and Coving/Cornice.  Molding  A timber molding is a strip of material such as softwood or mdf with a decorative profile cut on the face edges. Decorative moldings are most commonly used for fine finish and trim carpentry work  Nominal Size  The 'nominal size' refers to the roughly sawn size of timber before it is planed or machined.  Outfeed  The end of a power tool such as a table saw for example where the material exits.  Particle Board  Otherwise known as chipboard is made of lots of bits glued and compressed together. Available as a sheet material like flooring and also covered with Formica and used for worktops.  Phillips Head  A type of screw head with a X shaped groove in the head. Special screwdriver bits are used to wind them in  Pilot Bit  A pilot bit is a drill bit used to bore a hole slightly smaller than the screw to allow it to pass through the material easier and without splitting.  Pitch  Means the angle of rise in degrees from the horizontal, used for staircase and roof construction.  Plumb  Plumb is the term used to describe something that is perfectly vertical. A 'plumb bob' is an old fashioned heavy tool on a piece of string used to determine plumb.  Plywood  Plywood is a man made sheet material made up of opposing layers and is used often for its strength and resistance to warping/shrinking.  Pocket Hole  A pocket hole is drilled at an angle to allow a butt joint to be screwed together. Can be used to fix two pieces together flush, at angles, end to end, curved and many more. Extremely useful type of fixing.  Portfolio  One of the best selling tools is a carpentry portfolio. With copies of qualifications and insurance certificates, photographs of previous work, testimonials and more. Go to the carpentry portfolio page for more information.  Quarter round/quadrant  A quarter round or quadrant molding is a cover strip the shape of a quarter of a circle that comes in long lengths. It is used as a decorative bead and to cover gaps or areas where plasterboard meets timber and would crack without a cover strip. You can also use a router and round-over bit to put a quarter round molding onto timber.  Radial Arm Saw  Is a circular saw mounted on a horizontally sliding arm. It was the most popular saw for cutting timber to length before the miter saw.  Rip Cut  Cutting parallel to the grain of timber is referred to as a rip cut or 'ripping'. The opposite of crosscut. Table saws are rip saws.  Rough Lumber  Boards that are sawn to size and edged but not planed smooth. Mainly used for framing/carcassing carpentry.  Router  A router is a fast and extremely versatile cutting tool with a high speed motor. Typically used for rebating, dados, rabbets and many other shapes/profiles.  Sawhorse  Is a wooden trestle often used in pairs to support the work-piece whilst working on it. Carpentry apprentices often make these at college during their apprenticeships.  Skew nailing  Or toe nailing, skew nailing is the method of fixing timber together at an angle when you can't fix through the back.  Spade Bit  Relatively low cost drill bits for cutting small to medium size holes. Available with either a point or threaded centre guide. When drilling thin materials with them put a scrap piece of timber behind the work-piece.  Square  A carpentry hand tool used for setting out and marking or checking for square, true 90° angles. Other uses include setting out roof rafters and staircases. There are several different types of carpenter square available click the link above for more information.  Table Saw  A circular rip saw blade that is mounted under a table. The height the blade protrudes and the angle are usually adjustable. Great for ripping sheet materials etc.  Tape measure  An essential on site measuring tool for carpenters. For tips on how to read one go to the tape measure page.  Template  A template is either a preformed shape laid onto timber several times when making repeat cuts or a power tool guide. Common uses are as guides for plunge routers.  Tongue and Groove  Is a method for joining two pieces of timber. Tongue and groove flooring for example has a protruding tongue that is glued and slotted into the groove of the next piece. Also used for wainscoting.  Torx Head - Star/Star bit  Screws are available with torx heads, and they are driven with special star shaped screwdriver bits.  Under-cut  To 'undercut' timber is to cut more out of the back or side where it won't be seen. Like a leading edge, you would undercut a piece of timber to allow it to go back further or to tighten a miter or scribe for example. As long as it won't be seen from the face or will get covered by something else.  Varnish  A liquid used to finish timber. It is a hard protective film often transparent but is also available with different coloured effects.  Veneer  A thin layer of wood is glued to another. Expensive timber can be replicated cheaply by using cheap timber with a thin expensive veneer.  Warp  When timber bends/twists along its grain when stored incorrectly or when drying out it is considered 'warped.  Yardstick  A wooden rule 36" long, most commonly used for setting out and marking joinery work | | | | | |