

TEXAS



MIDDLE SCHOOL SECTION

CATEGORY BASED PROJECTS

REQUIRED MINIMUM DOCUMENTATION:

Level 1 - Single Page containing a Bill of Materials and a single descriptive paragraph explaining the design, development and production of project.

Level 2 - Cover - centered on the page in consecutive lines, the student (s)' name(s), the product name, and school name
 2 page max - Description of product, instructions for its use, design process, production process, bill of materials, software/hardware used, etc...
 3 pages max - sketches, working drawings, pictures of production process, etc...
 (minimum of 1 page in this section)

Documentation can be housed in a 3-ring binder, folder, or plastic page protector. (or the equivalent of listed

BELOW IS THE DOCUMENTATION REQUIREMENTS FOR DESKTOP PUBLISHING, GRAPHICS, and PHOTOGRAPHY

REQUIRED MINIMUM DOCUMENTATION:

Level 1 - Single Page containing a Bill of Materials and a single descriptive paragraph explaining the design, development and production of project.

Level 2 - Cover - centered on the page in consecutive lines, the student (s)' name(s), the product name, and school name
 2 page min and 4 page max- Description of product, instructions for its use, design process, production process, script, software/hardware used, sketches, storyboards, etc...
 Documentation can be housed in a 3-ring binder, folder, or plastic page protector.(or the equivalent of listed

INTERDISCIPLINARY DISPLAY

The interdisciplinary display encompasses the application of the academic courses (science, math, history, Language Arts) through the project method of instruction. The emphasis in this category is on the student's ability to correlate the academics as they apply to the development and manufacture of a product or the construction of a product. In addition, to the documentation required by the individual units within the Technology course, further evidence is needed to specifically address the application of skills acquired in the academic courses. **(Individual or Team)**

Classification
02000

DRAFTING

Paper size not to exceed 12" x 18" (B-Size)
 Pages from exercise books, blueprints or other reproductions are not acceptable.

	Classification
Sketching/Free hand - Single Part-(No Rendering. See Graphics Section) One sheet	02001
Sketching / Free hand - Single View with pictorial	02002
Sketching / Free hand - Single View without pictorial	02003
Sketching / Free hand - Two View with pictorial	02004
Sketching / Free hand - Two View without pictorial	02005
Sketching / Free hand - Three View with pictorial	02006
Sketching / Free hand - Three View without pictorial	02007
Sketching /Free hand - Pictorial	02008

DRAFTING

	Classification
Sketching /Free hand Working Drawing	02009
Single View - - One sheet with pictorial	02010
Single View - - One sheet without pictorial	02011
Two View - One sheet with pictorial	02012
Two View - One sheet without pictorial	02013
Three View - One sheet with pictorial	02014
Three View - One sheet without pictorial	02015
Pictorial - One sheet	02016
Working Drawing	02017
Architectural - Maximum four sheets (May include plot plan, floor plan, elevations, and/or door/window schedule etc.)	02018
Presentation Drawing - Engineering	02019
Presentation Drawing - Architectural	02020
Aerospace related drawings - Max 2 page	02021
Machine - Maximum two sheets	02022
CADD - Single View - One sheet with pictorial	02023
CADD - Single View - One sheet without pictorial	02024
CADD - Two View - One sheet with pictorial	02025
CADD - Two View - One sheet without pictorial	02026
CADD - Three View - One Sheet with pictorial	02027
CADD - Three View - One Sheet without pictorial	02028
CADD - Pictorial - One Sheet	02029
CADD - Working Drawing	02030
CADD - Architectural - Maximum four sheets (May include plot plan, floor plan, elevations, and/or door/window schedule etc.)	02031
CADD - Aerospace related drawings - Max 2 page	02032
CADD - Machine - Maximum two sheets	02033
Computer generated 3-D designs	02034
CADD - Presentation Drawing - Engineering	02035
CADD - Presentation Drawing - Architectural	02036

PHOTOGRAPHY

All photos will use mounting adhesive along the top edge of photograph not to exceed 3/4-inch and be mounted on white typing paper not to exceed 8.5" by 11". **No matting will be allowed.** All photos will be student processed unless otherwise stated.

	Classification
Pin hole photograph	02040
Still Life - Color (student printed)	02041
Still Life - Black and White	02042
Still Life - Color (commercial chemical printed process)	02043
Still Life – Digital	02044
Action/Motion - Black and White	02045
Action/Motion - Color (student printed)	02046
Action/Motion - Color (commercial chemical printed process)	02047
Action/Motion – Digital	02048
Landscape - Black and White	02049
Landscape - Color (student printed)	02050
Landscape – Color (commercial chemical printed process)	02051
Landscape – Digital	02052
Marine - Black and White	02053

PHOTOGRAPHY

	Classification
Marine – Color (student printed)	02054
Marine – Color (commercial chemical printed process)	02055
Marine – Digital	02056
Portraits - Black and White	02057
Portraits - Color (student printed)	02058
Portraits – Color (commercial chemical printed process)	02059
Portraits –Digital	02060
Special effects - Black and White	02061
Special Effects – Color (student printed)	02062
Special Effects – Color (commercial chemical printed process)	02063
Special Effects -Digital	02064
Close-up (MACRO)	02065
Close-up (MACRO) - Black and White	02066
Close-up (MACRO) - Color (student printed)	02067
Close-up (MACRO) – Color (commercial chemical printed process)	02068
Close-up (MACRO) –Digital	02069
Photo essay four to six prints with captions or titles not to exceed a maximum of 36" x 36" display area. Must tell a story, process or concept.	02070
Photo essay – 7 or more prints with captions or titles not to exceed a maximum of 36" x 36' Display area. Display or manual format	02071
Slide Series - Maximum of 20 slides arranged to tell a story or explain a process. Slides must be arranged in order in a top-loading carousel.	02072

DESKTOP PUBLISHING/GRAPHICS

	Classification
Screen Print - one color - hand cut	02080
Screen Print - multi-color - hand cut	02081
Screen Print - one color - thermal screen	02082
Screen Print - multi-color - thermal screen	02083
Screen Print - one color - photo emulsion	02084
Screen Print - multi-color - photo emulsion	02085
Computer Generated Design Transfer - one color	02086
Computer Generated Design Transfer - multi- color	02087
Computer digital transfer	02088
Business Cards/Name Tags, etc.	02089
Certificate	02090
Form - Single Sheet	02091
Product description	02092
Fly sheet	02093
Product specification sheets	02094
Owners/Operators manual	02095
Brochure 1-2 printed panels	02096
Brochure 3 - 4 printed panels	02097
Brochure 5 or more printed panels	02098
Thematic Portfolio - A collection of four or more graphic images following a central theme (<i>Example: section pages in a yearbook, etc. - Could be created from an "art" program, scanned and/or original art work - Not limited to these examples</i>)	02099

DESKTOP PUBLISHING/GRAPHICS

The following entries should be submitted on standard 8.5 x 11-inch paper in a sleeve protector.

	Classification
Student original - Graphics - BW	02110
Student original - Graphics - COLOR	02111
Student edited - Graphics - BW (must show original)	02112
Student edited - Graphics - COLOR (must show original)	02113
Computer based multi media Entries with academic themes.	02114
Computer based multi media Entries with technology themes	02115
Computer animation One-minute, subject: any area	02116
Computer animation One-minute, subject: safety	02117
Database Minimum of 25 entries; at least 5 fields. Must show original input data and two sorts	02118
Spreadsheet Minimum of 5 columns and 5 rows - Must have at least 2 calculations	02119
A word-processing document, any subject. (8.5 x 11 inch page size, two-pages double-spaced minimum); No graphics	02120
A word-processing document, any subject (8.5 x 11 inch page size, two-pages double-spaced minimum); With graphics	02121
Document using word-processing, spreadsheet, and database.	02122
Newsletter must include: Letterhead or masthead, graphics and have at least two columns.	02123

AUDIO / VIDEO SYSTEMS

Documentation for video and audio classifications must include description of content or subject matter and a script with technical directions (zoom, pan, dolly, camera angle, etc.)

CD-R / DVD or Printouts - no VHS or tape format	Classification
Video production - not to exceed 60 seconds	02130
Video production - not to exceed 5 minutes	02131
Audio production - not to exceed 30 seconds	02132
Audio production - not to exceed 60 seconds	02133
CD-R/DVD – not to exceed 60 seconds	02134
CD-R/DVD – not to exceed 5 minutes	02135
Static or working model of a Telecommunication Device or system.	02136

DIGITAL VIDEO

CD-R / DVD or Printouts - no VHS or tape format	Classification
Still Capture - Black & White – 1 Frame Capture from Video	02140
Still Capture - Color– 1 Frame Capture from Video	02141
Still Capture - edited paint - (must show original) - Black & White	02142
– 1 Frame Capture from video	
Still Capture - edited paint - (must show original) - Color– 1 Frame Capture from video	02143
Video Capture – B/W – Multiple Frame Video Clip	02144
Video Capture- Color– Multiple Frame Video Clip	02145
Video Capture – Black & White- (must show original) – Multiple Frame Video Cl	02146
Video capture - Color - (must show original) – Multiple Frame Video Clip	02147
Static or working model of a telecommunication device or system	02148

ROBOTICS

CD-R / DVD or Printouts - no VHS or tape format	Classification
Programming to 25 lines (moves) of program maximum. Minimum documentation must include hard copies of codes and 3 to 6 photographs or video (maximum of 5 minutes) of robot in action, or printouts.	02150
Programming 26 to 50 lines (moves) of program maximum. Minimum documentation must include hard copies of codes and 3 to 6 photographs or video (maximum of 5 minutes) of robot in action or printouts.	02151
Programming 51 to 75 lines (moves) of program maximum. Minimum documentation must include hard copies of codes and 3 to 6 photographs or video (maximum of 5 minutes) of robot in action or printouts.	02152
Programming 76 to 100 lines (moves) of program maximum. Minimum documentation must include hard copies of codes and 3 to 6 photographs or video (maximum of 5 minutes) of robot in action or printouts.	02153

COMPUTER-NUMERIC-CONTROL

The intent of this area to demonstrate the programming and design aspects ONLY, not actual production, which can be entered under the other classifications

Team		
Individual		
CNC Lathe program -must include drawing and CNC code printout - Single Part	02154	02155
CNC Lathe program -must include drawing and CNC code printout - Multiple Parts	02156	02157
CNC Mill program- must include drawing and CNC code printout - Single Part	02158	02159
CNC Mill program- must include drawing and CNC code printout - Multiple Parts	02160	02161
F.M.S. - Multiple machine - multi tasks - single part, hard copy of the programs must accompany entry	02162	02163
CNC Lathe/Mill combination of lathe and mill work, must include part drawing and CNC code printout.	02164	02165

INTERFACE

To control lights, motors, switches, or to receive input from switches, sensors, etc.

Non Kit			
Kit			
Kit - Team			
Output interface	02166	02167	02168
Input controlled interface	02169	02170	02171

ENERGY

Student produced displays or working models that demonstrate extraction or processing of Energy. Student or representative should be present only if the device or system needs special instructions to be operated, when judged.

	Classification
Mechanical	02172
Heat	02173
Electrical	02174
Nuclear	02175

ENERGY

	Classification
Light	02176
Alternative Energy	02177

POWER

Student produced displays or working models that demonstrate the man-made or natural power sources being used. Student or representative should be present only if the device or system needs special instructions to be operated.

	Classification
Mechanical	02178
Heat	02179
Electrical	02180
Chemical	02181
Nuclear	02182
Light	02183
Hydraulic	02184
Pneumatics	02185

TRANSPORTATION

Student produced displays or working models that demonstrate the movement of people or materials. Student or representative should be present only if the device or system needs special instructions to be operated.

	Classification
Land	02186
Sea	02187
Air	02188
Space	02189
Stationary (Conveyers)	02190
Transportation System / Industries – land/water/air/space. Static display or model	02191

APPLICATION OF ENERGY, POWER, AND TRANSPORTATION

Team			
Individual			
Power Systems - Utilization of pneumatic, hydraulic, and/or mechanical power. <i>Static Display or Working Model</i>	02192	02193	
Electrical Energy Devices Non-Kit	02194	02195	
Electrical Energy Devices Kit	02196	02197	
Electrical Power Systems - Principles, utilization, and impact. <i>Static Display or Working Model</i>	02198	02199	
Electronic devices that use semiconductors in its operation (<i>Non-kit</i>)	02200	02201	
Electronic devices that use semiconductors in its operation <i>Commercial Kits</i>	02202	02203	
Electronic/Audio Communication Systems - (<i>Example laser, fiber optics, radio, etc.</i>)	02204	02205	
<i>Static Display or Working Model . Student or representative should be present only if the device or system needs special instructions to be operated</i>			
Internal and External Combustion Engines - Research of principles, utilization, and environmental impact. (<i>Static display or working model. Example: engine cut-a-way</i>)	02206	02207	

APPLICATION OF ENERGY, POWER, AND TRANSPORTATION

Team

Individual

Transportation Systems/Industries - Land/water/air/space <i>Static Display or Working Model</i>	.....	02208	02209
Internal and External Combustion Engines - Operation and Maintenance. <i>(Running)</i> 5 h.p. maximum size. Minimum documentation will consist of a work history statement signed by the students instructor verifying the task in the work history was performed and the engine is in proper operating condition. Student must operate engine. Engine must be mounted on a suitable frame or engine stand not exceeding 36" x 36" Note: A fire extinguisher must be supplied and be on hand during live engine testing. P.T.O. end of crank shaft must be bare - nothing attached.	.....	02210	02211

WOOD-INDIVIDUAL ENTRY (1 student only)

CNC code printout must accompany CNC entry

Wood - Hand or Portable Power Tools

Wood - Machine Tools

Wood - CNC

Wood Turning - Machine Tools

Wood Turning - CNC

Less than .25 board feet	.....	02220	02221	02222	02223	02224
Less than .5 board feet	.....	02225	02226	02227	02228	02229
Less than .75 board feet	.....	02230	02231	02232	02233	02234
Less than 1 board feet	.....	02235	02236	02237	02238	02239
Less than 1.5 board feet	.....	02240	02241	02242	02243	02244
Less than 2 board feet	.....	02245	02246	02247	02248	02249
Less than 3 board feet	.....	02250	02251	02252	02253	02254
Less than 4 board feet	.....	02255	02256	02257	02258	02259
Less than 6 board feet	.....	02260	02261	02262	02263	02264
Less than 8 board feet	.....	02265	02266	02267	02268	02269
Less than 10 board feet	.....	02270	02271	02272	02273	02274
Less than 15 board feet	.....	02275	02276	02277	02278	02279
Less than 20 board feet	.....	02280	02281	02282	02283	02284
Less than 25 board feet	.....	02285	02286	02287	02288	02289
Less than 30 board feet	.....	02290	02291	02292	02293	02294
Less than 35 board feet	.....	02295	02296	02297	02298	02299
Less than 40 board feet	.....	02300	02301	02302	02303	02304
Less than 50 board feet	.....	02305	02306	02307	02308	02309
Less than 60 board feet	.....	02310	02311	02312	02313	02314
More than 60 board feet	.....	02315	02316	02317	02318	02319

WOOD-TEAM ENTRY

Definition of team product: Board foot calculated on max of two products to get correct amount of board foot for correct classification

CNC code printout must accompany CNC entry

Wood - Hand or Portable Power Tools

Wood - Machine Tools

Wood - CNC

Wood Turning - Machine Tools

Wood Turning - CNC

Less than .25 board feet	.....	02330	02331	02332	02333	02334
Less than .5 board feet	.....	02335	02336	02337	02338	02339
Less than .75 board feet	.....	02340	02341	02342	02343	02344
Less than 1 board feet	.....	02345	02346	02347	02348	02349
Less than 1.5 board feet	.....	02350	02351	02352	02353	02354
Less than 2 board feet	.....	02355	02356	02357	02358	02359
Less than 3 board feet	.....	02360	02361	02362	02363	02364
Less than 4 board feet	.....	02365	02366	02367	02368	02369
Less than 6 board feet	.....	02370	02371	02372	02373	02374
Less than 8 board feet	.....	02375	02376	02377	02378	02379
Less than 10 board feet	.....	02380	02381	02382	02383	02384
Less than 15 board feet	.....	02385	02386	02387	02388	02389
Less than 20 board feet	.....	02390	02391	02392	02393	02394
Less than 25 board feet	.....	02395	02396	02397	02398	02399
Less than 30 board feet	.....	02400	02401	02402	02403	02404
Less than 35 board feet	.....	02405	02406	02407	02408	02409
Less than 40 board feet	.....	02410	02411	02412	02413	02414
Less than 50 board feet	.....	02415	02416	02417	02418	02419
Less than 60 board feet	.....	02420	02421	02422	02423	02424
More than 60 board feet	.....	02425	02426	02427	02428	02429

WOOD-MASS PRODUCTION ENTRY - Individual or Team

Definition of mass production project: Board foot calculated on single product only to get correct amount of board foot for correct classification

CNC code printout must accompany CNC entry

This category requires the entry of 2 samples.

Wood - Hand or Portable Power Tools

Wood - Machine Tools

Wood - CNC

Wood Turning - Machine Tools

Wood Turning - CNC

More than 60 board feet	.....	02450	02451	02452	02453	02454
Less than .25 board feet	.....	02455	02456	02457	02458	02459
Less than .5 board feet	.....	02460	02461	02462	02463	02464
Less than .75 board feet	.....	02465	02466	02467	02468	02469
Less than 1 board feet	.....	02470	02471	02472	02473	02474
Less than 2 board feet	.....	02475	02476	02477	02478	02479
Less than 4 board feet	.....	02480	02481	02482	02483	02484
Less than 6 board feet	.....	02485	02486	02487	02488	02489

WOOD-MASS PRODUCTION ENTRY - Individual or Team

Wood - Hand or Portable Power Tools**Wood - Machine Tools****Wood - CNC****Wood Turning - Machine Tools****Wood Turning - CNC**

Less than 8 board feet	.....	.....	02490	02491	02492	02493	02494
Less than 10 board feet	.....	.....	02495	02496	02497	02498	02499
Less than 15 board feet	.....	.....	02500	02501	02502	02503	02504
Less than 20 board feet	.....	.....	02505	02506	02507	02508	02509

METAL/ACRYLIC – INDIVIDUAL

CNC code printout must accompany CNC entry

Metal - Hand or Portable Power Tools**Metal - Machine Tools****Metal - CNC****Sheet Metal****Acrylic - Hand or Portable Power Tools****Acrylic - Machine Tools****Acrylic- CNC**

Less than 0.25 square feet	02570	02571	02572	02573	02574	02575	02576
Less than 0.5 square feet	02577	02578	02579	02580	02581	02582	02583
Less than 0.75 square feet	02584	02585	02586	02587	02588	02589	02590
Less than 1 square foot	02591	02592	02593	02594	02595	02596	02597
Less than 2 square feet	02598	02599	02600	02601	02602	02603	02604
Less than 6 square feet	02605	02606	02607	02608	02609	02610	02611
Less than 10 square feet	02612	02613	02614	02615	02616	02617	02618
Less than 12 square feet	02619	02620	02621	02622	02623	02624	02625
More than 12 square feet	02626	02627	02628	02629	02630	02631	02632
Less than 1 ounce	02633	02634	02635	02636	02637	02638	02639
Less than 2 ounces	02640	02641	02642	02643	02644	02645	02646
Less than 4 ounces	02647	02648	02649	02650	02651	02652	02653
Less than 6 ounces	02654	02655	02656	02657	02658	02659	02660
Less than 8 ounces	02661	02662	02663	02664	02665	02666	02667
Less than 12 ounces	02668	02669	02670	02671	02672	02673	02674
Less than 1 pound	..... 02675	02676	02677	02678	02679	02680	02681
Less than 3 pounds	02682	02683	02684	02685	02686	02687	02688
Less than 5 pounds	02689	02690	02691	02692	02693	02694	02695
Less than 10 pounds	02696	02697	02698	02699	02700	02701	02702
Less than 20 pounds	02703	02704	02705	02706	02707	02708	02709
Less than 30 pounds	02710	02711	02712	02713	02714	02715	02716
Less than 50 pounds	02717	02718	02719	02720	02721	02722	02723
Less than 75 pounds	02724	02725	02726	02727	02728	02729	02730
Less than 100 pounds	02731	02732	02733	02734	02735	02736	02737
More than 100 pounds	02738	02739	02740	02741	02742	02743	02744

METAL/ACRYLIC – INDIVIDUAL cont.

Metal - Hand or Portable Power Tools

Metal - Machine Tools

Metal - CNC

Sheet Metal

Acrylic - Hand or Portable Power Tools

Acrylic - Machine Tools

Acrylic- CNC

Less than 250 pounds	02745	02746	02747	02748	02749	02750	02751
Less than 400 pounds	02752	02753	02754	02755	02756	02757	02758
Less than 600 pounds	02759	02760	02761	02762	02763	02764	02765
Less than 800 pounds	02766	02767	02768	02769	02770	02771	02772
Less than 1000 pounds	02773	02774	02775	02776	02777	02778	02779
Less than 1500 pounds	02780	02781	02782	02783	02784	02785	02786
More than 1500 pounds	02787	02788	02789	02790	02791	02792	02793

METAL/ACRYLIC – TEAM

CNC code printout must accompany CNC entry

Definition of team product: Board foot calculated on max of two products to get correct amount of board foot for correct classification

Metal - Hand or Portable Power Tools

Metal - Machine Tools

Metal - CNC

Sheet Metal

Acrylic - Hand or Portable Power Tools

Acrylic - Machine Tools

Acrylic- CNC

Less than 0.25 square feet	02800	02801	02802	02803	02804	02805	02806
Less than 0.5 square feet	02807	02808	02809	02810	02811	02812	02813
Less than 0.75 square feet	02814	02815	02816	02817	02818	02819	02820
Less than 1 square foot	02821	02822	02823	02824	02825	02826	02827
Less than 2 square feet	02828	02829	02830	02831	02832	02833	02834
Less than 4 square feet	02835	02836	02837	02838	02839	02840	02841
Less than 6 square feet	02842	02843	02844	02845	02846	02847	02848
Less than 8 square feet	02849	02850	02851	02852	02853	02854	02855
Less than 10 square feet	02856	02857	02858	02859	02860	02861	02862
Less than 12 square feet	02863	02864	02865	02866	02867	02868	02869
More than 12 square feet	02870	02871	02872	02873	02874	02875	02876
Less than 1 ounce	02877	02878	02879	02880	02881	02882	02883
Less than 2 ounces	02884	02885	02886	02887	02888	02889	02890
Less than 4 ounces	02891	02892	02893	02894	02895	02896	02897
Less than 6 ounces	02898	02899	02900	02901	02902	02903	02904
Less than 8 ounces	02905	02906	02907	02908	02909	02910	02911
Less than 12 ounces	02912	02913	02914	02915	02916	02917	02918
Less than 1 pound	02919	02920	02921	02922	02923	02924	02925
Less than 3 pounds	02926	02927	02928	02929	02930	02931	02932
Less than 5 pounds	02933	02934	02935	02936	02937	02938	02939

METAL/ACRYLIC – TEAM**Metal - Hand or Portable Power Tools****Metal - Machine Tools****Metal - CNC****Sheet Metal****Acrylic - Hand or Portable Power Tools****Acrylic - Machine Tools****Acrylic- CNC**

Less than 15 pounds	02940	02941	02942	02943	02944	02945	02946
Less than 25 pounds	02947	02948	02949	02950	02951	02952	02953
Less than 50 pounds	02954	02955	02956	02957	02958	02959	02960
Less than 75 pounds	02961	02962	02963	02964	02965	02966	02967
Less than 100 pounds	02968	02969	02970	02971	02972	02973	02974
Less than 200 pounds	02975	02976	02977	02978	02979	02980	02981
Less than 400 pounds	02982	02983	02984	02985	02986	02987	02988
Less than 600 pounds	02989	02990	02991	02992	02993	02994	02995
Less than 800 pounds	02996	02997	02998	02999	03000	03001	03002
Less than 1000 pounds	03003	03004	03005	03006	03007	03008	03009
Less than 1500 pounds	03010	03011	03012	03013	03014	03015	03016
More than 1500 pounds	03017	03018	03019	03020	03021	03022	03023

MANUFACTURING - TURNING – KIT**Metal****Wood****Acrylics****Bone****Other**

Pen or Pencil-CNC	03100	03101	03102	03103	03104
Pen or Pencil - Manual	03105	03106	03107	03108	03109
Pen/Pencil Set-CNC	03110	03111	03112	03113	03114
Pen/Pencil-Set-Manual	03115	03116	03117	03118	03119
Letter Opener-CNC	03120	03121	03122	03123	03124
Letter Opener-Manual	03125	03126	03127	03128	03129
Magnifier-CNC	03130	03131	03132	03133	03134
Magnifier-Manual	03135	03136	03137	03138	03139
Pen light-CNC	03140	03141	03142	03143	03144
Pen light-Manual	03145	03146	03147	03148	03149
Key Chain-CNC	03150	03151	03152	03153	03154
Key Chain-Manual	03155	03156	03157	03158	03159
Other-CNC	03160	03161	03162	03163	03164
Other-Manual	03165	03166	03167	03168	03169

MANUFACTURING - PLASTICS & RESINS

	Classification
PVC fabrication - 10 pounds or less	03200
PVC fabrication - more than 10 pounds	03201
Injection molding (all)	03202
Vacuum forming (all)	03203
Casting (all)	03204
Reinforced resins (all)	03205
Non acrylic	03206
Composite	03207

MANUFACTURING - OTHER MATERIALS**Mass Production****Team - Single Product****Individual**

Fabric	03210	03211	03212
Paper	03213	03214	03215
Glass - Flat (Ex: plate)	03216	03217	03218
Glass - Glassware (Ex: mugs)	03219	03220	03221
Leather	03222	03223	03224
Combination of any of the above	03225	03226	03227

CASTING MATERIALS**Commercial mold-Rough casting****Commercial Mold-Finished Casting****Sand Casting-Rough Casting****Sand Casting-Finished Casting**

1 oz	03240	03241	03242	03243
3 oz	03244	03245	03246	03247
6 oz	03248	03249	03250	03251
8 oz	03252	03253	03254	03255
12 oz	03256	03257	03258	03259
16 oz	03260	03261	03262	03263
16 oz plus	03264	03265	03266	03267
Pattern Match Plate	03268	03269	03270	03271
Disposable	03272	03273	03274	03275

PRECIOUS METALS (Note: See Rule 9 pg. 14)**Student Made Mold****Commercial Mold**

Fabrications with stones	03280	03281
Fabrications without stones	03282	03283
Lost wax casting - Purchased Pattern with stones	03284	03285
Lost wax casting - Purchased Pattern without stones	03286	03287
Casting using organic materials	03288	03289

RECYCLED MATERIALS

These products must be constructed from 50% recycled materials. Products must be classified by the primary construction material

Wood

Metals

Plastic

Glass

Other

Combination

.5 lb.	03300	03301	03302	03303	03304	03305
1.0 lb.	03306	03307	03308	03309	03310	03311
1.5 lb.	03312	03313	03314	03315	03316	03317
2.0 lb.	03318	03319	03320	03321	03322	03323
3.0 lb.	03324	03325	03326	03327	03328	03329
5.0 lb.	03330	03331	03332	03333	03334	03335
7.0 lb.	03336	03337	03338	03339	03340	03341
10.0lb.	03342	03343	03344	03345	03346	03347
10.0 lb. Plus	03348	03349	03350	03351	03352	03353

COMBINATION MATERIALS

	Classification
A combination of materials, tools and processes to produce a product	03360
Static display or working model that demonstrates the use of a combination of energy, power, and/or transportation. Student or representative should be present only if the device or system needs special instructions to be operated.	03361
Static display or working model that incorporates the uses of Communication, Energy/Power/Transportation, Manufacturing, Construction and/or Biotech Technology. Evidence documenting the use of the above technologies must accompany the completed product.	03362

CONSTRUCTION TECHNOLOGY - Individual/Team

Construction is defined as the technique, skills, and standards used in the construction of a shelter, containment, support, or complex. Students will be demonstrating the application of their knowledge of construction when they enter their project in competition.

PAST

All entries must include historical documentation of the feature that the construction represents.

Team

Individual

Early buildings (houses, churches, theaters, etc.)	03400	03401
Early roads, bridges, or waterways	03402	03403
A display depicting construction technology or material used in the past	03404	03405

PRESENT**(NOTE: When entering models, you must have available original drawing or copy of plans used.)****Team****Individual**

Model of a constructed residential shelter	03408	03409
A partial model of a constructed residential shelter which shows detail. Max. size 4 feet by 4 feet by 8 ft. high	03410	03411
A partial structure to show construction techniques. (Example: wall section, plumbing, electrical application, etc.) Max. size 4 feet by 4 feet by 8 ft. high	03412	03413

STRUCTURE USING CONSTRUCTION PROCESSES - Without Utilities**Team****Individual**

Less than 1 sq. ft. of floor space	03420	03421
Less than 5 sq. ft. of floor space	03422	03423
Less than 20 sq. ft. of floor space	03424	03425
Less than 40 sq. ft. of floor space	03426	03427
Item over 40 sq. ft. MUST USE VIDEO OR PHOTOGRAPHS ONLY.	03428	03429

STRUCTURES ARE NOT TO BE DISPLAYED

Residential plan (drawing - maximum of four 12 x 18 inch pages) May include plot plan, floor plan, elevation, and/or door/window schedule—	03430	03431
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HAND DRAWN

A display depicting the technologies or materials that are currently used in construction	03432	03433
Model Commercial Buildings (Example: supermarkets, libraries, schools, churches, etc.)	03434	03435
Model Industrial Buildings (Example: refineries, waste recycling, factories, etc.)	03436	03437
Model of a constructed containment	03438	03439
Structural engineering research, design, and evaluation of civil construction projects. (Example: highways, bridges, airports, dams, etc.) Static display or model	03440	03441
Model of a constructed support	03442	03443
Remodeling techniques and procedures. Students are to use video documentation to show various steps of a remodeling job from beginning to completion. Plans showing what changes are to be completed must accompany video	03444	03445
Model of an Aerospace structure	03446	03447

FUTURE**Team****Individual**

Master plan development (must include residential, commercial, industrial, and civil construction projects). Example: <i>Sim City</i> computer program. Display area not to exceed 36 x 36 inches	03460	03461
Model of a mass-transit system	03462	03463
Other	03464	03465

DIMENSIONAL MATERIALS

The following classifications are set aside for outdoor/recreational products constructed from dimensional materials such as 2 x4, 2x6, etc.

Team

Individual		
Less than 5 b.f.	.....	03466 03467
5 to 10 b.f.	.....	03468 03469
10 to 20 b.f.	.....	03470 03471
20 to 30 b.f.	.....	03472 03473
30 to 40 b.f.	.....	03474 03475
40 to 50 b.f.	.....	03476 03477
More than 50 b.f.	.....	03478 03479

RESTORATIONS - Team/Individual

Restoration: Projects that have been restored to the original condition. Items were originally commercially manufactured. A work history must accompany the entry stating the condition in which the entry was found, parts not reconditioned by the student and other pertinent information as per Rule 9. Engines and motors are not included in this classification.

Team

Individual		
Restoration - furniture	.....	03480 03481
Restoration - mechanical/machine devices	.....	03482 03483
Restoration - electrical/appliances	.....	03484 03485
Restoration - vehicles	.....	03486 03487

COMMERCIAL MODEL KITS

Theory and Processes as related to Technology Education
Must include manufacturer's assembly instructions.

	Classification
Construction	03489
Energy	03490
Power	03491
Electricity/Electronics	03492
Land Transportation	03493
Air Transportation	03494
Space Transportation	03495
Water Transportation	03496

INTEGRATED TECHNOLOGIES PRODUCT PRODUCTION-INDIVIDUAL

	Classification
Develop and produce a product that incorporates the uses of Communication, Energy/Power/Transportation, Manufacturing, Construction and/or Biotech Technology. Evidence documenting the use of the above technologies must accompany the completed product.	03497

BIOTECHNOLOGY

Students must show evidence of the use of the universal system model. Minimum documentation must contain the following; sketches, description of problem, process and outcomes.

	Classification
Design biotechnology tools to meet human, physical, and biological needs.	03498
Interdisciplinary studies in biotechnology research	03499

