Drafting Evaluation Tool

2020 Curricular Materials Review

Idaho Engineering and Technology Education (ETE) Drafting Program Standards[[1]](#footnote-1)

**Publisher information**

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* Title:
* Grade Level:
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# Instructions:

Complete the Publisher Standards Alignment Report below. Please provide written justification as to how the material meets the standard along with location references. If a justification requires additional space, please submit response on an additional document.

# Publisher STANDARDS ALIGNMENT Report:

## Standard DRFT.1.0: Career Exploration

### Performance Standard DRFT.1.1 Careers in Drafting

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.1.1.1 Investigate careers in drafting, training, and associated opportunities. |  |
| CTE DRFT.1.1.2 Describe the differences between drafting disciplines and job functions. |  |
| CTE DRFT.1.1.3 Explore career opportunities and list educational requirements for a given drafting field. |  |
| CTE DRFT.1.1.4 Identify safety risks and preventative measures in the office, at the construction site, and production site. |  |

## Standard DRFT.2.0: Drafting Fundamentals

### Performance Standard DRFT.2.1 Geometric Constructions

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.2.1.1 Define geometric terms and recognize various geometric shapes by name. |  |
| CTE DRFT.2.1.2 Use lines, circles, and arcs to construct regular and irregular geometric shapes. |  |
| CTE DRFT.2.1.3 Construct angles, to include acute, obtuse, and right angles. |  |
| CTE DRFT.2.1.4 Divide lines and bisect angles and arcs. |  |
| CTE DRFT.2.1.5 Construct tangent, concentric, and perpendicular geometric relationships. |  |
| CTE DRFT.2.1.6 Calculate area, perimeter, and volume of geometric shapes to include circle, square, rectangle, and triangle. |  |

### Performance Standard DRFT.2.2 Measuring and Scaling Techniques

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.2.2.1 Explain the concept of scaling of objects. |  |
| CTE DRFT.2.2.2 Determine appropriate engineering, architectural, and metric scales. |  |
| CTE DRFT.2.2.3 Measure object size, area, and volume utilizing appropriate industry devices. |  |
| CTE DRFT.2.2.4 Construct drawings utilizing metric and customary (i.e., SI, Imperial) measurement systems. |  |
| CTE DRFT.2.2.5 Transcribe drawings accurately using ratios and proportions. |  |
| CTE DRFT.2.2.6 Determine and apply the equivalence between fractions and decimals. |  |
| CTE DRFT.2.2.7 Convert between customary (i.e., SI, Imperial) and metric systems. |  |

### Performance Standard DRFT.2.3 Conventional Drafting Practices

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.2.3.1 Identify and select appropriate drafting media. |  |
| CTE DRFT.2.3.2 Produce title blocks. |  |
| CTE DRFT.2.3.3 Utilize appropriate drawing composition and layout. |  |
| CTE DRFT.2.3.4 Identify and utilize industry standard object properties (i.e., line weight, line type). |  |
| CTE DRFT.2.3.5 Produce drawings from sketches. |  |
| CTE DRFT.2.3.6 Apply appropriate annotations to drawings according to industry standards. |  |
| CTE DRFT.2.3.7 Demonstrate drawing revision control. |  |

### Performance Standard DRFT.2.4 Multi-View Drawings Using Orthographic Projection

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.2.4.1 Determine the principle view of an object. |  |
| CTE DRFT.2.4.2 Identify, create, and arrange multi-view drawings. |  |
| CTE DRFT.2.4.3 Identify, create, and arrange sectional views. |  |
| CTE DRFT.2.4.4 Identify, create, and arrange primary auxiliary views. |  |
| CTE DRFT.2.4.5 Identify multiple projection theories (first angle, third angle). |  |
| CTE DRFT.2.4.6 Apply appropriate units of measurement. |  |

### Performance Standard DRFT.2.5 Dimensions and Annotations

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.2.5.1 Differentiate appropriate dimension standards. |  |
| CTE DRFT.2.5.2 Arrange dimensions and annotations using appropriate standards. |  |
| CTE DRFT.2.5.3 Use various dimensioning styles. |  |
| CTE DRFT.2.5.4 Construct bill of materials or schedule of materials. |  |

### Performance Standard DRFT.2.6 Pictorial Drawings

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.2.6.1 Create oblique drawings. |  |
| CTE DRFT.2.6.2 Create isometric drawings. |  |
| CTE DRFT.2.6.3 Create perspective drawings. |  |

### Performance Standard DRFT.2.7 Hand Sketching Techniques

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.2.7.1 Develop design ideas using freehand sketching. |  |
| CTE DRFT.2.7.2 Create pictorial and multi-view sketches. |  |
| CTE DRFT.2.7.3 Utilize hand lettering techniques. |  |
| CTE DRFT.2.7.4 Utilize the alphabet of lines. |  |
| CTE DRFT.2.7.5 Utilize line weights, shading, and color to communicate sketch ideas |  |

## Standard DRFT.3.0: Fundamental CADD Skills

### Performance Standard DRFT.3.1 Basic Computer and IT Skills

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.3.1.1 Use and maintain computer hardware and input/output devices. |  |
| CTE DRFT.3.1.2 Apply basic commands of an operating system and software. |  |
| CTE DRFT.3.1.3 Apply file management techniques using various storage media. |  |
| CTE DRFT.3.1.4 Import and export data files using various formats. |  |
| CTE DRFT.3.1.5 Use industry reliable media to acquire information to complete drafting problems. |  |

### Performance Standard DRFT.3.2 Drawing Environment

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.3.2.1 Select appropriate existing title blocks. |  |
| CTE DRFT.3.2.2 Set drafting settings. |  |
| CTE DRFT.3.2.3 Determine and apply scaling factors, including plotting and printing. |  |
| CTE DRFT.3.2.4 Assign line weights, line types, and colors. |  |
| CTE DRFT.3.2.5 Utilize template files. |  |
| CTE DRFT.3.2.6 Utilize sheets/layouts for plotting/printing. |  |

### Performance Standard DRFT.3.3 Geometric Shapes and Objects Using Cartesian Coordinate System

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.3.3.1 Describe and utilize the Cartesian Coordinate System to create geometric shapes and objects (x, y, z). |  |
| CTE DRFT.3.3.2 Calculate input coordinates. |  |
| CTE DRFT.3.3.3 Manipulate and utilize coordinate systems. |  |

### Performance Standard DRFT.3.4 CADD Commands

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.3.4.1 Utilize multiple entry methods to invoke CADD commands (i.e., hot keys, icons, and menus). |  |
| CTE DRFT.3.4.2 Utilize geometric relationships to ensure accuracy (i.e., endpoint, midpoint, and center. |  |
| CTE DRFT.3.4.3 Utilize CADD commands to create and modify objects. |  |
| CTE DRFT.3.4.4 Assign property styles to objects. |  |
| CTE DRFT.3.4.5 Access and integrate help resources to solve problems. |  |

### Performance Standard DRFT.3.5 Annotations

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.3.5.1 Define, create, and modify industry standard text styles. |  |
| CTE DRFT.3.5.2 Arrange text based on industry standards. |  |
| CTE DRFT.3.5.3 Create and modify dimension styles. |  |
| CTE DRFT.3.5.4 Arrange dimensions based on industry standards (may include dual dimensioning). |  |
| CTE DRFT.3.5.5 Use industry standard symbols to annotate drawings. |  |

## Standard DRFT.4.0: 3-D CADD Skills and Techniques

### Performance Standard DRFT.4.1 Three-Dimensional Models

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.4.1.1 Interpret and define the right-hand rule for the x, y, and z-axes. |  |
| CTE DRFT.4.1.2 Develop three-dimensional models (i.e., wireframe, surface, solid, or parametric). |  |
| CTE DRFT.4.1.3 Manipulate the x-y plane in three-dimensional space. |  |
| CTE DRFT.4.1.4 Edit the shape and configuration of solid models. |  |
| CTE DRFT.4.1.5 Display objects as shaded or hidden lines removed. |  |
| CTE DRFT.4.1.6 Create working and presentation drawings from three-dimensional models. |  |

## Standard DRFT.5.0: Architectural Drafting and Design

### Performance Standard DRFT.5.1 Architectural Design

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.5.1.1 Identify and describe different architectural styles. |  |
| CTE DRFT.5.1.2 Identify construction terminology, materials and building codes. |  |
| CTE DRFT.5.1.3 Identify architectural annotation standards. |  |
| CTE DRFT.5.1.4 List and describe construction drawings. |  |
| CTE DRFT.5.1.5 Prepare a floor plan from an existing plan or sketch. |  |

### Performance Standard DRFT.5.2 Architectural Design

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.5.2.1 Apply architectural design concepts to plan views. |  |
| CTE DRFT.5.2.2 Create an exterior elevation from an existing floor plan. |  |
| CTE DRFT.5.2.3 Create interior elevations. |  |
| CTE DRFT.5.2.4 Create building sections and details. |  |
| CTE DRFT.5.2.5 Produce schedules. |  |
| CTE DRFT.5.2.6 Understand and apply green building/sustainable design principles to project design. |  |

## Standard DRFT.6.0: Mechanical Drafting and Design

### Performance Standard DRFT.6.1 Drafting Concepts Related to Basic Manufacturing Processes

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.6.1.1 Describe the basic engineering design process. |  |
| CTE DRFT.6.1.2 Describe standard machine processes. |  |
| CTE DRFT.6.1.3 Utilize standard welding/machining symbols per ANSI and ASME. |  |
| CTE DRFT.6.1.4 Identify common stock forms. |  |
| CTE DRFT.6.1.5 Create scaled working drawings using dimensions, tolerances, and other specifications for machine tool, fabrication, and/or welding processes. |  |
| CTE DRFT.6.1.6 Create thread and fastener representations and utilize thread designations. |  |
| CTE DRFT.6.1.7 Create assembly drawings including a bill of materials. |  |

### Performance Standard DRFT.6.2 Geometric Dimensioning and Tolerancing (GDK&T) Standards

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.6.2.1 Understand datums utilized for tolerancing. |  |
| CTE DRFT.6.2.2 Utilize basic dimensioning for toleranced features. |  |
| CTE DRFT.6.2.3 Utilize GD&T for assembly fits. |  |

### Performance Standard DRFT.6.3 Drafting Concepts Related to Pattern Development

| Student Competencies by Performance Standard | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| CTE DRFT.6.3.1 Define developments. |  |
| CTE DRFT.6.3.2 Identify the major types of developments. |  |
| CTE DRFT.6.3.3 Construct parallel line development. |  |

# Indicators of quality Rubric:

Standards aligned and Integrated Curriculum:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. The curriculum is based on industry-validated technical standards and competencies.
 |  |
| 1. The curriculum is aligned with relevant content and standards for core subjects, such as reading, math and science, including federal, state and/or local standards, as appropriate.
 |  |
| 1. The curriculum incorporates employability skill standards that help students succeed in the workplace, such as problem solving, critical thinking, teamwork, communications and workplace etiquette.
 |  |
| 1. The curriculum allows for student application of integrated knowledge and skills in authentic scenarios.
 |  |
| 1. Materials used reflect current workplace, industry and/or occupational practices and requirements.
 |  |

Access and Equity:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. Materials are provided in a way that ensures all students have the opportunity to achieve success in the program of study, including by meeting Title IX, Americans with Disabilities Act and other accessibility requirements.
 |  |
| 1. Materials and assessments are free from bias, inclusive and non-discriminatory, and offered in a way that ensures all students have the opportunity to achieve success in the program of study.
 |  |
| 1. Contains guidance to support differentiated and culturally responsive (i.e., purposefully represents diverse cultures, linguistic backgrounds, learning styles and interests) instruction in the classroom so that every student’s need are addressed by including:
	1. Suggestions for how to promote equitable instruction by making connections to culture, home, neighborhood, and community as appropriate.
	2. Appropriate scaffolding, interventions, and supports, including integrated and appropriate reading, writing, listening, and speaking alternatives (e.g., translations, picture support, graphic organizers) that neither sacrifice content nor avoid language development for English language learners, special needs, or below grade level readers.
	3. Digital and print resources that provide various levels of readability.
	4. Modifications and extensions for all students, including those performing above their grade level, to deepen understanding of the content.
	5. Materials in multiple language formats.
 |  |

Student Focus:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. The material supports the sequential and cumulative development of foundational skills and progresses in specificity to build students’ depth of knowledge and skills. Those skills are necessary for a student’s independent comprehension of grade-level complex texts and mastery of tasks called for by the standards.
 |  |
| 1. Content and standards within the program of study are non-duplicative and vertically aligned to prepare students to transition seamlessly to the next level of education.
 |  |
| 1. The material provides many and varied opportunities for students to work with each standard within the grade level.
 |  |
| 1. The material cross-refers and integrates other content areas.
 |  |
| 1. The material has a balance of text types and lengths that encourage close, in-depth reading and rereading, analysis, comparison, and synthesis of texts.
 |  |
| 1. The material includes sufficient supplementary activities or assignments that are appropriately integrated into the text.
 |  |
| 1. The material has activities and assignments that develop problem-solving skills and foster synthesis and inquiry at both an individual and group level.
 |  |
| 1. The material has activities and assignments that reflect varied learning styles of students.
 |  |
| 1. The material includes appropriate instructional strategies.
 |  |
| 1. Project-based learning and related instructional approaches, such as problem-based, inquiry-based and challenge-based learning, are fully integrated into the material.
 |  |

Pedagogical Approach:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. Provides guidance for teachers throughout for how learning experiences build on each other to support students in developing a deep understanding of the content.
 |  |
| 1. Provides scaffolded supports for teachers to facilitate learning of the content so that students are increasingly responsible for making sense of the content.
 |  |
| 1. The material provides opportunities for supporting English language learners to regularly and actively participate with grade-level text.
 |  |
| 1. The material gives clear and concise instruction to teachers and students. It is easy to navigate and understand.
 |  |
| 1. Includes appropriate academic and content-specific vocabulary in the context of the learning experience that is accessible, introduced, reinforced, reviewed, and augmented with visual representations when appropriate.
 |  |
| 1. Allows teachers to access, revise, and print form digital resources (e.g., readings, labs, assessments, rubrics).
 |  |
| 1. Uses varied modes (selected, constructed, project-based, extended response, and performance tasks) of instruction-embedded pre-, formative, summative, peer, and, self-assessment measures of learning.
 |  |
| 1. Includes editable and aligned rubrics, scoring guidelines, and exemplars that provide guidance for assessing student performance and to support teachers in planning instruction and providing ongoing feedback to students.
 |  |
| 1. Provides multiple opportunities for students to demonstrate and receive feedback on performance of practices connected with their understanding of concepts.
 |  |

Presentation and Design:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. The material has an aesthetically appealing appearance.
 |  |
| 1. Digital and print materials are consistently formatted, visually focused, and uncluttered for efficient use.
 |  |
| 1. The material has a reasonable and appropriate balance between text and illustration. The material has grade-appropriate font size.
 |  |
| 1. The illustrations clearly cross-reference the text, are directly relevant to the content (not simply decorative), and promote thinking, discussion, and problem solving.
 |  |
| 1. Non-text content (performance clips, images, maps, globes, graphs, pictures, charts, databases, and models) are accurate and well integrated into the text.
 |  |

Technology:

| Standards | Justification: Provide examples from materials as evidence to support each response for this section. Provide descriptions, not just page numbers. |
| --- | --- |
| 1. Technology and digital media support, extend, and enhance learning experiences.
 |  |
| 1. The material has “platform neutral” technology (i.e., cloud based) and availability for networking.
 |  |
| 1. The material has a user-friendly and interactive interface allowing the user to control (shift among activities).
 |  |

For Questions Contact

Content & Curriculum

Idaho State Department of Education

650 W State Street, Boise, ID 83702

208 332 6800 | [www.sde.idaho.gov](http://www.sde.idaho.gov/)

1. [Idaho ETE Drafting Program Standards](https://cte.idaho.gov/wp-content/uploads/2018/03/Computer-Support..pdf) [↑](#footnote-ref-1)