

**National Certificate in Building, Construction and Allied Trades Skills (BCATS)**  
Teacher Information & Resources

**Demonstrate knowledge of and  
create sketches and drawings for  
BCATS projects**

Unit Standard – 24353

Level 2, Credit 6





## Teaching and assessment tips

**Intent** – The intent of the unit standard is that the learner is able to:

- understand the meaning of lines and symbols on working drawings,
- describe a variety of drawing and sketching methods,
- create sketches from job requirements and turn those sketches into instrumental drawings.

### **Unit standard Interpretation**

Sketches and drawings must be completed for 2 different projects. The student may use projects they are completing as part of the BConstructive programme. If projects other than those in the BConstructive programme are being used they must be of a similar complexity.

Over 2 projects evidence of plans must include third angle orthographic projections; (that means elevations, plans, cross sections and pictorial projections). Also, evidence of 2 of the following types of plans are required; isometric, oblique, one point perspective, two point perspective.

Using CAD software to create drawings is acceptable.

The skills and knowledge required for this unit standard is assessed by completing the worksheet, the Assessor Observation sheet and copies of the learner's sketches and drawings for 2 practical projects. Sketches and drawings must be attached to the Assessor Observation sheet. The worksheet is to be completed for the theory section of the unit standard.

We encourage you to use the practical projects that your student is completing as part of the BConstructive programme.

### **Assessment**



Assessment of this unit standard consists of:

- Completion of the worksheet and,
- Completion of sketches and drawings for 2 projects and,
- Completion of an Assessor Observation sheet for the projects

# Worksheet US 24353

**Student Name:** \_\_\_\_\_

**1.** What does a scale of 1:20 mean?

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**2.** What drawing scale would be used when drawing an object at twice its normal size?

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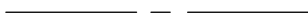
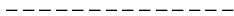
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**3.** Complete columns B and C to describe each line and what it is used for.

**A. Line**

**B. Description**

**C. Uses**





4. What drawing method is used to produce a set of working drawings?

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5. What is the purpose of a section drawing?

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6. What type of drawing projection can provide information about window and door heights?

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7. What is the most common angle used to draw an oblique drawing?

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8. Why is it necessary to store drawing equipment carefully when it is not in use?

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9. Identify a grade of pencil lead that is most suited to the following tasks

Construction lines:

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Lining in (finishing lines):

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Rendering (shading):

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10. What effect would using set squares with damaged edges have on the quality of your work?

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11. Identify an appropriate drawing method that may be used to present information for each of the following situations:

The technique that may be used to sketch the layout of a room.

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A 3-dimensional view.

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A 2-dimensional side view of an object.

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A 2-dimensional view looking down on an object.

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12. Complete the following chart.

Symbol	Meaning

13. Describe methods for storing fragile drawing equipment, such as pencils and set squares, to protect them from becoming damaged.

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# Worksheet Model Answers


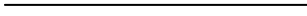

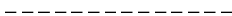


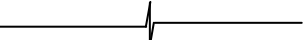


1. What does a scale of 1:20 mean?

*All the measurements on a drawing are reduced in the ratio of 1:20, i.e., 1 mm on the drawing represents 20 mm on the actual object.*

2. What drawing scale would be used when drawing an object at twice its normal size?

*Scale of 2:1 or twice full size.*

3. Complete columns B and C to describe each line and what it is used for.

A. Line	B. Description	C. Uses
	<i>Continuous (thick)</i>	<i>Visible outline and edges.</i>
	<i>Continuous (thin)</i>	<i>Fictitious outlines and edges. Dimension and leader lines. Hatching. Outlines of adjacent parts. Outlines of revolved sections. Fold lines.</i>
	<i>Continuous irregular (thin)</i>	<i>Limits of partial views or sections when the line is not an axis.</i>
	<i>Short dashes (thin)</i>	<i>Hidden outlines and edges.</i>
	<i>Chain (thin)</i>	<i>Centre lines, extreme position of movable parts.</i>
	<i>Chain (thick at ends and at changes of direction, thin elsewhere)</i>	<i>Section and planes.</i>
	<i>Thin</i>	<i>Break (architectural).</i>
	<i>Chain (thin)</i>	<i>Geometric datum (reference line).</i>
	<i>Continuous, very light but clearly visible</i>	<i>Construction lines.</i>

4. What drawing method is used to produce a set of working drawings?  
*3<sup>rd</sup> angle orthographic projection.*
5. What is the purpose of a section drawing?  
*It is used to show the internal detail of an object that would not normally be seen.*
6. What type of drawing projection can provide information about window and door heights?  
*Front and side views of orthographic drawings.*
7. What is the most common angle used to draw an oblique drawing?  
*45°*
8. Why is it necessary to store drawing equipment carefully when it is not in use?  
*To ensure that the equipment is kept clean and free from damage.*
9. Identify a grade of pencil lead that is most suited to the following tasks:  
Construction lines: *4H - 9H.*  
Lining in (finishing lines): *HB - 2B.*  
Rendering (shading): *2B - 7B.*
10. What effect would using set squares with damaged edges have on the quality of your work?  
*Using damaged set squares will produce uneven line work.*
11. Identify an appropriate drawing method that may be used to present information for each of the following situations:  
The technique that may be used to sketch the layout of a room.  
*One or two point perspective.*  
A 3-dimensional view.  
*Isometric, oblique, one or two point perspective.*



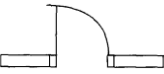
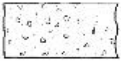





A 2-dimensional side view of an object.

*Elevation.*

A 2-dimensional view looking down on an object.

*Plan.*

12. Complete the following chart.

Symbol	Meaning
	<i>Door</i>
	<i>Concrete</i>
	<i>Window (top hung)</i>
	<i>Fluorescent light</i>
	<i>Electrical socket outlet</i>
	<i>Tub</i>
	<i>Washing machine</i>

13. Describe methods for storing fragile drawing equipment, such as pencils and setsquares, to protect them from becoming damaged.

*Pencils: Stored in a rigid container.*

*Rulers: Stored in a plastic or cloth protective sleeve.*

*Set squares: Stored in a cloth bag separate from pencils.*

*Compass/dividers: Protect points and leads against damage by keeping them in their cases when not in use.*

## Examples of oral assessment questions

1. Which drawing method is most commonly used for:
  - Building plans? *Third angle orthographic projection.*
  - Pictorial view of a building? *Two point perspective.*
  - Interior pictorial layout of a room? *One point perspective.*
  
2. What grade of pencil should you use for formal drawing finishing work?  
*H - HB.*
  
3. What drawing scale would be used where a drawing is shown at half its normal size?  
*Scale 1:2.*
  
4. What drawing scale would be used where a drawing is shown at twice its normal size?  
*Scale 2:1.*
  
5. How can the visual presentation of a freehand sketch be improved?  
*Use of shading or colour rendering, thick and thin lines, high lighting of details.*
  
6. Identify three commonly used drawing methods that can be used to produce a pictorial view  
*Oblique.*  
*Isometric.*  
*One point perspective.*  
*Two point perspective.*
  
7. What are the three views that make up an orthographic drawing?  
*Front view or elevation.*  
*Right and left side views.*  
*Top view or plan.*

## Assessor Observation Sheet – Sketches and Drawings

US 24353 Demonstrate knowledge of and create sketches and drawings for BCATS projects (Level 2, Credit 6)

Student Name:	
Sketch/project 1:	
Sketch/project 2:	

**Assessor observation:**

<i>Assessment criteria: note that sketches and drawings for 2 projects must be completed.</i>	<i>Comments and/or notes</i>
Worksheet completed correctly <span style="float: right;"><input type="checkbox"/></span>	
Freehand sketching technique and equipment selected is appropriate <span style="float: right;">Project 1 <input type="checkbox"/> Project 2 <input type="checkbox"/></span>	
Sketches are acceptable in proportion and detail for job requirements <span style="float: right;">Project 1 <input type="checkbox"/> Project 2 <input type="checkbox"/></span>	
Sketches are converted into instrumental drawings <span style="float: right;">Project 1 <input type="checkbox"/> Project 2 <input type="checkbox"/></span>	
Equipment and unused materials stored correctly <span style="float: right;">Project 1 <input type="checkbox"/> Project 2 <input type="checkbox"/></span>	
Sketches and drawings are attached <span style="float: right;">Project 1 <input type="checkbox"/> Project 2 <input type="checkbox"/></span>	
Assessor name: ..... Assessor signature: ..... Date: .....	<b>RESULT:</b> A = Achieved, N = Not Yet Achieved