SECONDARY LESSON PLAN

YEAR LEVEL & SUBJECT: Year 11	**DATE:**
NO. OF STUDENTS:	**LESSON DURATION:** 1.5hrs

TOPIC/FOCUS: Introduction to Orthogonal Drawing

VCAA STUDY DESIGN: VCD - Unit 2: Area of study 1: Technical drawing in context

GOALS AND OBJECTIVES:
On completion of this unit the student should be able to create presentation drawings that incorporate relevant technical drawing conventions and effectively communicate information and ideas for a selected design field.

Key Knowledge:
- the conventions of presentation drawings associated with a selected field
- two-dimensional drawing methods such as… third-angle orthogonal projections
- measures for evaluating effective drawings such as readability, clarity, accuracy, communication of message, usability, relevance.
- technical drawing conventions used with presentation drawings such as those related to layout, dimensions, labels, symbols and lines.
- role of Australian Standards in providing nationally accepted conventions for technical drawing
- methods of drawing to scale using conventional ratios such as: 1:1, 2:1, (Industrial)

Key Skills:
- apply drawing methods that are suitable for presentation drawings and the selected field
- use manual methods to create presentation drawings
- select and apply technical drawing conventions used with presentation drawings
- select and apply two-dimensional methods to represent form, proportions and scale

SUMMARY OF RESOURCES REQUIRED:
- Orthogonal Rubric
- Matching Activity & Answers
- Orthogonal drawing powerpoint
- Presenter notes
- Whiteboard
- Projector
- Hidden lines activity sheet and answers
- Orthogonal drawing template
- Rulers
- Pencils
- Erasers

LESSON PROCEDURE					
TIMING	**RESOURCES**	**STEPS OF THE LESSON** (key activities and key questions)	**EXPECTED STUDENT REACTIONS OR RESPONSES**	**TEACHER RESPONSES TO STUDENTS** (including consideration of the need to adapt, reteach or extend)	**GOALS & METHODS OF EVALUATION** (including specific informal and/ or formal assessment)
10.45 (5mins) **10.50** (15mins)	- Orthogonal Rubric - Matching Activity & Answers	**Opening** - Mark the role. - Introduce assessment task and requirements. <u>Matching Activity</u> Break students into groups of 3-4, making sure more advanced students are distributed evenly. Hand out the matching activity packs. Allow students 15 minutes to pair up as many words with definitions as they can. Once time is up get students to rotate around to the next group before reading out the correct answers for them to mark.	Students may be confused and not know many of the answers.	Explain they may not know the answers to them yet, but over the next few weeks they'll be learning this content.	Walk around the room and assess how students are going. Provide any clarification as necessary - but no answers yet. Record group members and score for later reflection and comparison.
11.05 (15mins)	- Orthogonal drawing powerpoint - Presenter notes - Whiteboard - Projector	**Lesson Development:** <u>Powerpoint Presentation</u> Run through orthogonal drawing powerpoint. Remember to ask questions such as: - Why do you think this would be important? - Who would use these drawings and why? - What view would be the front view? Give demonstration during powerpoint of how to draw a quick orthogonal drawing.	Students to sit quietly and watch powerpoint, to ask questions when neccessary. Students may start to lose focus.	Similar students may answer all the questions, so perhaps call on particular students. Get students up to participate in hidden lines activity.	- the conventions of presentation drawings - two-dimensional drawing methods - measures for evaluating effective drawings - technical drawing conventions used with presentation drawings - role of Australian Standards in providing nationally accepted conventions for technical drawing - methods of drawing to scale using conventional ratios

11.20 (10mins) **11.30** (40mins)	- Hidden lines activity sheet and answers - Orthogonal drawing template - Rulers - Pencils - Erasers	<u>Hidden Lines Activity</u> Hand out activity sheets and get students to complete as many as they can in 10 minutes. (Prize for the most correct answers) After 10 minutes get the students to hand them back to you so you can work out who the winner is by next class. <u>Orthogonal Drawings</u> Allow students to start on their own drawings. Get them to start by roughly sketching their object and the different views first. This should help them to avoid mistakes on their final drawings. Make sure they measure their objects and record these measurements on their sketches. Give students orthogonal drawing templates to begin their final drawings.	Students to work independently on activity sheet. Students may wish to rush ahead to final drawing.	 Remind them to sketch first, explaining it will help them avoid mistakes. If similar questions are occurring, be sure to stop the class, pencils down, and discuss once with everyone.	- technical drawing conventions used with presentation drawings - select and apply technical drawing conventions used with presentation drawings - apply drawing methods that are suitable for presentation drawings and the selected field - use manual methods to create presentation drawings - select and apply two-dimensional methods to represent form, proportions and scale
12.10 (5 mins) **12.15**	- Whiteboard	**Closure** Get students to pack up. Rehash the lesson content, with prompting questions such as: - Why do we have orthogonal drawings? - What view do we start with? - How do we draw the side view or top view? - What are elevation lines? Remind students of the project requirements - write what needs to be completed, as well as the due date, on the whiteboard.	 Students might be slow to settle after packing up. Students to offer answers to questions.	 Ensure everyone is quiet and paying attention before talking to them. Prompt students to write the due date in their diaries so they don't forget.	