

Lesson 4: How to Make Blueprints on Presentation Boards

Revisit orthographic drawings by teaching students how to create and present plans for their golf holes.

by Andrew Brosnan and Jenny Parma; curriculum by Build SF staff

This lesson looks at topics covered in previous lessons—perspective and orthographic drawings, and applies them to the project.

Engaging Students

Get your students interested in the lesson by doing the following:

- » Ask them about what they've learned so far, such as perspective drawing and other key concepts.
- » Have them demonstrate specific skills or lessons on the chalkboard. For example, ask your students to draw a golf hole in 3-D perspective.

Project Application: Creating Presentation Boards

Teach students how to create three or more different perspectives of their holes on presentation boards. Review some orthographic and perspective-drawing techniques first, then dig into the drawings.

Follow these steps to get your students underway:

1. Review orthographic drawings and plan, side, and front views. (See Lesson 1.) Ask students to practice drawing their holes in these three views on graph paper.
2. Review some important geometry techniques and definitions so that students can label their drawings correctly. For example, go over perimeters, angles, and area.
3. Discuss the characteristics of presentation boards. Presentation boards can include
 - » A brief, informative title in large letters, if handwritten, or in a large font (such as 24-point) if done on a computer
 - » The same object (in this case, the golf hole) in plan, front, and side views, with each view labeled
 - » A border around each view
 - » Measurements of each part of the hole as they'd actually appear
 - » A sense of composition (balance and the effective use of white space) and color/contrast (for advanced students)

LESSON OBJECTIVES AND MATERIALS

OBJECTIVES

- » Incorporate feedback
- » Use geometry and critical-thinking skills to design playable holes
- » Use orthographic drawings to represent the design

MATERIALS

- » presentation boards (11 x 14 inches or 20 x 30 inches)
- » rulers
- » graph paper
- » measuring sticks
- » pens and pencils

Project Application: Creating Presentation Boards (continued)

Have students design and illustrate presentation boards. Some students might want to sketch board components on scratch paper first before transferring the sketch to the board.

Ask students to review each other's drawings and provide feedback based on the following questions:

- » What do you like most about the design?
- » Is the model well built? Is the design clear and realistic?
- » Is the hole challenging enough? Too challenging? Would you have fun playing the hole?
- » Do you think it is possible to build this hole and play it in the designated area (such as in the gymnasium or classroom)?
- » What areas do you think need improvement? You can base your suggestions on the questions above.
- » Ask students to incorporate any suggestions by redesigning their boards or by integrating critiques into the next stage of the lesson.

Student Assessment

At the end of this lesson, you should have a good idea of each student's ability to create orthographic drawings, apply geometry skills, and understand the other concepts covered.

Here are some guiding points to help you assess each student.
The student's mastery of the subject matter is

- » **Excellent:** Students use balanced compositions to present three views of their hole. They've labeled each hole with accurate measurements, and the design reveals an awareness of its real-world application and original thinking via its design or theme. The board is clean, neat, and well labeled.
- » **Good:** Students present three views of their hole. They've labeled each hole with accurate measurements, and the design reveals an awareness of its real-world application or shows original thinking via its design or theme. They've labeled the board.
- » **Fair:** Students present three views of their hole. They've labeled each hole with measurements, and the design reveals some awareness of previous discussions, but it is clichéd or very simple. They've labeled the board, but not neatly or accurately (e.g., it has spelling errors).
- » **Poor:** Students fail to present three views of their hole. They have not labeled each hole with measurements, and the design is not workable or is especially messy. They haven't labeled the board or it's bent, stained, or otherwise damaged.

KEY POINTS

Break this lesson up into different working sessions in which students can develop and improve their boards. Encourage students to incorporate feedback into every step of the process.

Rubric for Assessing Presentation Drawing

STUDENT NAME _____ DATE _____

CATEGORY	EXCELLENT	GOOD	PROFICIENT	NEEDS IMPROVEMENT
CREATIVITY 15 points	Several of the graphics or objects, including title, used in the visual reflect an exceptional degree of student creativity in their creation and/or display. Graphics are in color.	One or two of the graphics or objects used in the visual reflect student creativity in their creation and/or display. Some are in color.	Graphics hardly creative; show little effort. Black and white graphics.	The student put in no effort.
ATTENTION TO THEME 15 points	Every item in the visual is related to the assigned theme. For most items, the relationship is clear without explanation. All information is precise.	Most items in the visual are related to the assigned theme. For many of the items, the relationship is clear without explanation. Information is mostly accurate.	Few items in the visual are related to the assigned theme. Information is random or vague.	Difficult to understand how items relate to the assigned theme. Information is inaccurate.
VIEW ANGLES 15 points	The course is displayed from multiple views of reference, including top view and at least two perspective and/or side views. All design details are clear without explanation.	The drawing has at least two viewing angles that display the design. Most of the design is clear without explanation.	The drawing has only one viewing angle. The design details are unclear and require explanation.	Drawing does not include details of design and is unclear.
NUMBER OF ITEMS 5 points	The visual includes several interesting items, each different.	The visual includes a few different items that are mostly interesting.	The visual includes a few different items that are not very interesting.	The visual is not interesting.

TOTAL POINTS _____