TECH **3**
TECHNIQUE

COMPUTER-AIDED DRAWING

| STUDENT BOOK | Chapter 11, page 344 |

GOAL

Use software to create a multiview projection of a rectangular prism.
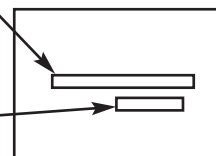
MATERIALS

- rectangular prism constructed in TECH 2
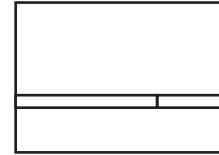- computer
- word processing software

PROCEDURE

Part 1: Composing the drawing frame and the title block

1. Open the software.
2. To change the paper's orientation, select "File," then click "Page setup."
   Under "Orientation," select "Landscape," then click "OK."
3. Make sure the drawing tools are displayed. If they are not, click "View,"
   then glide the cursor over "Toolbar" and select "Drawing."
4. On the drawing toolbar, select "Draw," then click "Grid" from the dropdown list.
   Enter "0.01 cm" for both parameters in the drawing grid.
   Click "OK."
5. In the drawing toolbar, select the rectangular shape and draw a rectangle
   on the page.

6. Set the dimensions of your rectangle by double-clicking on it
   with the left button of the mouse. In the menu that now appears,
   select the tab "Size."
   Enter "18.0 cm" for height and "25.0 cm" for width.
   Click "OK."
7. Select the figure by left-clicking on it. With the arrows on your
   keyboard, centre the rectangle on the page.
8. Draw a rectangle 170 mm wide and 15 mm high inside the first rectangle.

9. Right-click on this second rectangle. Select "Add text" from the menu that appears.
   Enter "NAME:" in CAPITAL LETTERS in this rectangle.

   NAME:

10. Draw a second rectangle 80 mm wide and 15 mm high inside
    the first rectangle. Enter "DATE:" in CAPITAL LETTERS
    in this rectangle.

    DATE:

11. Use the mouse or the keyboard arrows to place the two rectangles you drew in Steps 8 and 10 side by side. Set the smaller one to the right.

12. Select one of the two rectangles you moved in Step 11 by left-clicking it.
Press the key "Shift."
While holding down the key "Shift," select the other rectangle you moved in Step 11 by left-clicking on it.
Once you have the two rectangles selected, leave the crosshair cursor (a cross with four arrows) on one of the rectangles, then right-click on it.
Select "Grouping," then "Group" from the dropdown list.

13. Select both rectangles you have grouped by right-clicking them, then select "Copy" from the list.

14. Right-click once again, then select "Paste" from the list.
A second group of rectangles should appear.

15. Change the text for the second group of rectangles. In the larger rectangle, enter "TITLE: MULTIVIEW PROJECTION OF A RECTANGULAR PRISM" in CAPITAL LETTERS. In the smaller rectangle, enter "SCALE: 1:1."

NAME:	DATE:

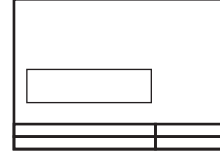| TITLE: MULTIVIEW PROJECTION OF A RECTANGULAR PRISM	SCALE: 1:1

16. Align the two groups of rectangles one above the other.

17. Select the top group of rectangles by left-clicking it.
Press the key "Shift."
While holding down the key "Shift," select the other group of rectangles by left-clicking on it.
Once you have the two groups selected, leave the crosshair cursor on your selection, then right-click the mouse.
Select "Grouping," then "Group" from the dropdown list.

18. With the mouse or keyboard arrows, move the new group of four rectangles until it is perfectly in line within the lower frame of the large rectangle.

19. Select the group of four rectangles with the left button of your mouse.
Press the key "Shift."
While holding down the key "Shift," select the first large rectangle by left-clicking on it.
Once you have the group of rectangles selected, leave the crosshair cursor on your selection and right-click on it.
Select "Grouping," then "Group" from the dropdown list. The group you have created will now serve as the drawing frame and the title block for your drawing.

20. Enter the information that is missing in the title block (name, date) in CAPITAL LETTERS.
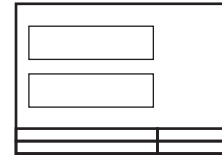
Part 2: Creating the drawing

1. Set the rectangular prism on your work table in such a way that the side marked "A" is the front view.
2. In the drawing frame you created in Part 1 of this lab, draw a rectangle 150 mm wide and 40 mm high.
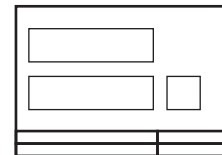3. Place this rectangle in the lower left corner of the frame.

4. From the drawing toolbar, left-click on "Text box" to select it.
5. Place the crosshair cursor at the desired spot on the page and then, holding down the left mouse button, draw the text area. This text area will have a box outlined in hatching to its right. This means that you may enter text, change the font, etc.
6. Enter "FRONT VIEW" in CAPITAL LETTERS inside this text area.
7. Left double-click on the border of the text area.
8. From the menu that appears, select the tab "Size." Enter "1.0 cm" for height and "4.0 cm" for width. From the same menu, select the tab "Colours and lines," then "No line" from the dropdown list under "Colour." Click "OK."
9. Move and centre the text area under the front view.
10. Group the text area with the rectangle.
11. Copy, then paste this group.

12. Place the new group over the first in such a way that the two rectangles face each other.

13. Modify the text of the second group to read "TOP VIEW" in the text area.
14. Draw a square with sides 30 mm in length and place it to the right of the lower rectangle.

15. Add a text area 1.0 cm high and 4.0 cm wide below the square and enter "RIGHT-SIDE VIEW" in it.
    Remove the line surrounding the text area (as in Step 8).
16. Group this text area with the square.
17. In the centre of each of the three figures, enter the letter on the side of the prism that matches each view shown.
    (Place each letter in a text area without lines.)
18. Group the entire contents of this page.
19. Save the file.
20. Select "File," then "Print" to print the document.

REFLECTING ON THE LAB TECHNIQUE

1. Do you think it would be possible to create more complex technical drawings with the software you worked with in this lab? Explain your answer.

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2. Do you think there are advantages to creating technical drawings on computers? Explain your answer.

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