Draw 3D Block Letters: Depth Lines and Shading Guide

Original tasks 1, 2 / complete keys

Task 1

Draw a 3D block letter H with depth offset right 10 mm and up 5 mm. State the light direction and shade the visible faces.

Answer: For a right-and-up vector, the visible candidates are top and right faces. On the H, show the top faces along exposed top edges, including the crossbar where its edge is exposed; show right-face portions only where they are not occluded by the front strokes. Do not draw bottom or left faces. With upper-left light, keep the front light, top midtone, and right side dark.

Reason: The vector goes right and up, so top and right-facing extrusion surfaces are the candidates. The H has concave junctions; stop side-face lines where a front stroke hides them instead of drawing through the letter.

Check: Measure three depth lines with a ruler; they should all be 10 mm right and 5 mm up. Confirm no two adjacent faces share a tone.

Task 2

Draw a 3D block letter T with depth offset left 7 mm and up 4 mm. Use light from the upper right. State which side faces are visible and shade them.

Answer: For the left-and-up vector, draw top and left faces only where the letter outline exposes them. Do not draw bottom or right faces. With the stated upper-right light, keep the front light, top a middle tone, and left side dark.

Reason: The vector points left and up, so exposed extrusion surfaces lie along top and left edges. The bottom faces are hidden for this vector and should not be drawn.

Check: Check that every depth line is parallel to the left 7 mm and up 4 mm vector. Verify shading matches the stated light direction.

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Original tasks 3, 4 / complete keys

Task 3

Draw a 3D block letter E with depth offset right 6 mm and down 3 mm. Describe how you avoid drawing hidden faces.

Answer: For a right-and-down vector, the exposed candidates are bottom and right faces. Draw only those surfaces where the E outline leaves them visible; the top and left faces are hidden. Do not draw a side face through an occluded junction.

Reason: The offset points right and down, so visible side faces are on the bottom and right. Hidden faces are not drawn.

Check: List the visible faces before drawing; after drawing, confirm no top or left side faces appear.

Task 4

Draw a 3D block letter A with a flat top and depth offset right 9 mm and up 5 mm. Use light from upper left. Check parallelism and shading.

Answer: For a right-and-up vector, the exposed candidates are top and right faces. Draw the top surface along exposed upper edges and right-side surfaces along exposed right edges; stop at occluded junctions, including where the crossbar meets a stroke. Do not add bottom faces. With upper-left light, use a middle tone on visible top faces, dark on visible right faces, and light on the front.

Reason: A flat top changes which front edges are exposed but not the vector rule: right-and-up depth exposes top and right candidates. Occlusion still decides where each surface line stops.

Check: Measure two depth lines on different strokes; both should be 9 mm right and 5 mm up. Confirm three tones are used consistently.

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Source rubric / reflection

- [ ] All depth lines are parallel to the stated depth vector.
- [ ] All depth lines are equal in length within a small tolerance.
- [ ] Only visible side faces are drawn.
- [ ] Shading uses three tones assigned consistently by face orientation.
- [ ] The stated light direction matches the shading on every letter.
- [ ] Letter outlines are clean and readable.

Reflection: What did you check, what did you change, and what will you try next?