Gridded Profile Portrait with a Candle: Placement and Shading

Original tasks 1, 2, 3 / complete keys

Task 1

A 5 by 7 grid has equal cells. Crown is at row 1, chin at row 6, eye line at row 3. How many rows separate crown from chin, and how many rows separate eye line from chin?

Answer: Crown to chin is 5 rows (rows 1 to 6). Eye line to chin is 3 rows (rows 3 to 6).

Reason: Count inclusive row differences: 6 minus 1 equals 5; 6 minus 3 equals 3.

Check: Recount the rows on the grid and confirm the subtraction matches the counted rows.

Task 2

A candle flame is at column 2 row 5. The face is to the right. Which side of the candle body faces the face, and should it be lighter or darker than the side facing away?

Answer: The flame is above the candle, so the top rim is lightest. Both vertical sides receive only grazing light from a flame above them, so both are mid; neither side is clearly lighter than the other based on the flame position alone.

Reason: A flame directly above the candle illuminates the top rim most directly. The vertical sides are nearly parallel to the light rays, so they receive grazing light and read as mid tone. Proximity to the face does not change the light on the candle; only the flame position matters. Therefore the right and left sides are similar in value, with the top lightest and the base darkest.

Check: Draw an arrow from the flame to the candle top and confirm the top rim is lightest and both vertical sides read as mid tone, since a flame directly above gives only grazing light to the sides.

Task 3

On a 6 by 8 grid, the nose tip is at column 6 row 5 and the ear at column 3 row 4. How many columns apart are they, and how many rows apart?

Answer: They are 3 columns apart and 1 row apart.

Reason: Column difference: 6 minus 3 equals 3. Row difference: 5 minus 4 equals 1.

Check: Count cells between the two landmarks on the grid and compare with the subtraction.

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Original tasks 4 / complete keys

Task 4

A candle is at lower left and casts a shadow. If the flame is at column 1 row 6 and the shadow falls toward column 4, is the shadow direction consistent with the light direction? Explain.

Answer: Yes. The flame is at the left, so the candle casts a shadow to the right, toward column 4, opposite the flame. This is consistent with light radiating outward from the flame.

Reason: Cast shadows fall opposite the light source. With the flame at the left, the shadow falls rightward. The radial light still produces a shadow on the side away from the flame.

Check: Draw the light arrow from flame to shadow and confirm they point in opposite horizontal directions.

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Source rubric / reflection

- [ ] Grid is equal-celled and labeled with columns and rows.
- [ ] Profile landmarks are recorded at grid intersections or cell centers and cell counts are checkable.
- [ ] Candle body is fully inside the reserved cell and flame center is marked as light origin.
- [ ] Shading follows the toward-flame rule for both candle and face.
- [ ] Cast shadow falls opposite the light direction.
- [ ] Valid stylistic alternatives are accepted if landmark records and cell counts remain consistent.

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