Raven Head Drawing: Beak Wedge, Eye Placement, and Head Angles

Original tasks 1 / complete keys

Task 1

Side view facing left. Skull oval 50 mm long, 25 mm tall. Beak wedge length 30 mm. Eye center 15 mm back from the front edge, 1.75 mm above midline. Eye diameter 7 mm. Pupil offset forward 1.4 mm. Check beak length and eye gap.

Answer: Beak length 30 mm is between one-half (25 mm) and two-thirds (about 33.3 mm) of skull length, so it passes. Eye center is 15 mm back, within the front third (about 16.7 mm). Eye radius is 3.5 mm, so the eye edge nearest the beak is at 15 − 3.5 = 11.5 mm from the front, giving a gap of about 11.5 mm, or about 1.6 eye diameters. This exceeds the one-and-a-half-eye-diameter upper limit (10.5 mm), so the eye gap fails and must be corrected. Move the eye forward by 2 mm: the eye center becomes 13 mm back, the edge is at 9.5 mm, and the gap is about 9.5 mm, or about 1.4 eye diameters, which is within range. Pupil offset 1.4 mm is exactly one-fifth of 7 mm, so it passes. The eye sits 1.75 mm above the midline, which is one-quarter of the 7 mm eye diameter.

Reason: Use the same-unit checks: beak length relative to skull, eye position in front third, gap relative to eye diameter, and pupil offset relative to eye diameter. Adjust only the eye position to bring the gap into range.

Check: Measure skull, beak, eye diameter, and gap with a ruler in millimeters. Confirm beak is between 25 and about 33.3 mm, eye center is within about 16.7 mm of the front, gap is between 3.5 and 10.5 mm, pupil offset is about 1.4 mm (one-fifth of 7 mm), and eye height above midline is about 1.75 mm (one-quarter of 7 mm).

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Original tasks 2, 3 / complete keys

Task 2

Three-quarter view facing right. Skull oval 60 mm long, 30 mm tall. Near eye diameter 8 mm, far eye diameter 6 mm. Near eye center 20 mm back from front, 2 mm above midline. Beak wedge length 30 mm, tilted right. Check far-eye size, near-eye height, and beak direction.

Answer: Far eye is 6 mm versus near eye 8 mm, a reduction of 2 mm, which is one-quarter of the near eye diameter; this is within the one-fifth to one-third range, so it passes. Beak length 30 mm is one-half of skull length, within the one-half to two-thirds range. Beak tip points right, matching the head turn. Near eye is 20 mm back, exactly at the front-third boundary, which is acceptable because the boundary is inclusive. Near eye height is 2 mm above midline, one-quarter of the 8 mm eye diameter, matching the convention. The drawing passes the angle and proportion checks.

Reason: Compare far eye to near eye as a fraction, check beak length against skull length, and confirm beak tip direction matches the turn. Keep all measurements in millimeters.

Check: Measure near and far eye diameters; confirm far eye is smaller by about one-fifth to one-third. Measure beak length and skull length; confirm beak is between 30 and 40 mm. Confirm beak tip is right of skull center.

Task 3

Side view facing right. Skull oval 40 mm long, 20 mm tall. Beak wedge length 28 mm. Eye center 10 mm back from front, 3 mm above midline. Eye diameter 6 mm. Pupil centered. Identify two errors and state fixes.

Answer: Error one: beak length 28 mm is more than two-thirds of skull length (about 26.67 mm), so the beak is too long; shorten it to about 22 mm, which is within the one-half to two-thirds range (20–26.67 mm). Error two: pupil is centered; offset it forward by about 1.2 mm, which is one-fifth of the 6 mm eye diameter. The eye center at 10 mm back is within the front third (about 13.3 mm), so that is acceptable. After fixes, the eye radius is 3 mm, so the eye edge nearest the beak is at $10 - 3 = 7$ mm from the front, giving a gap of 7 mm, which is within the one-half to one-and-a-half eye diameter range (3–9 mm).

Reason: Use the beak-length range and the pupil-offset convention. The eye position is already within the front third, so only beak length and pupil offset need correction.

Check: Measure beak and skull; confirm beak is between 20 and about 26.67 mm after shortening. Measure pupil offset; confirm it is about 1.2 mm forward. Measure eye gap; confirm it is 7 mm, within the 3–9 mm range.

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Original tasks 4 / complete keys

Task 4

Three-quarter view facing left. Skull oval 50 mm long, 25 mm tall. Near eye diameter 7 mm, far eye diameter 7 mm. Near eye center 15 mm back from front, 1.75 mm above midline. Beak wedge length 25 mm, tilted left. Identify the errors and state fixes, then give a final check.

Answer: Error one: far eye is the same size as the near eye, which makes the head look flat. Reduce the far eye to about 5.5 mm, a reduction of about one-fifth of the near eye diameter. Error two: the near eye is too far back for the gap range. With eye center 15 mm back and eye radius 3.5 mm, the eye edge is at 15 − 3.5 = 11.5 mm from the front, giving a gap of 11.5 mm, which exceeds the upper limit of 10.5 mm (one-and-a-half eye diameters). Move the near eye forward to 14 mm back, giving a gap of exactly 10.5 mm, which is at the upper boundary and acceptable because the range is inclusive. Beak length 25 mm is one-half of skull length, within range. Beak tip points left, matching the turn. Final check: far eye about 5.5 mm, near eye 7 mm, beak 25 mm, skull 50 mm, near eye gap 10.5 mm.

Reason: Two errors: equal eye sizes in a turned view, and a near-eye gap of 11.5 mm exceeding the 10.5 mm upper limit. Apply the far-eye reduction rule and move the near eye forward to 14 mm back (gap 10.5 mm), then verify beak length and direction with measurements.

Check: Measure both eyes; confirm far eye is smaller by about one-fifth to one-third. Measure beak and skull; confirm beak is between 25 and 33 mm. Confirm beak tip is left of skull center. Measure the near eye gap; confirm it is 10.5 mm or less, within the 3.5–10.5 mm range.

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Source rubric / reflection

- [ ] Skull oval is clearly longer than tall in side view.
- [ ] Beak wedge attaches at the front midline with a clear base.
- [ ] Beak length is between one-half and two-thirds of skull length in side view.
- [ ] Eye center sits in the front third of the skull and above the midline.
- [ ] Pupil is offset forward inside the eye circle.
- [ ] Gap between eye edge and beak base is between one-half and one-and-a-half eye diameters.
- [ ] Three-quarter view shows a smaller far eye and a shortened, tilted beak wedge.
- [ ] Beak tip points in the direction of the head turn.
- [ ] Measurements are recorded in consistent units.
- [ ] Valid stylistic alternatives are accepted if internal proportions remain consistent.

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