Longhorn Drawing: Horn Spread and Body Proportion Construction

Original tasks 1, 2 / complete keys

Task 1

On a page 18 cm wide, choose a hypothetical horn spread of 10 cm and a head height of 2.5 cm. The torso is 7 cm long and 3.75 cm deep. Legs are 3.5 cm. Check the proportions and state whether the torso length is acceptable.

Answer: Torso length 7 cm is shorter than the 10 cm spread, so it is not acceptable. Extend torso length to more than 10 cm and no more than 15 cm.

Reason: The rule is torso length longer than spread but not more than one and a half times spread. 7 cm is less than 10 cm, so it fails. One and a half times 10 cm is 15 cm, so the acceptable range is above 10 cm and up to 15 cm.

Check: Compare torso length to spread: $7 < 10$, so adjust. Then confirm the new length is greater than 10 cm and at most 15 cm.

Task 2

A drawing has horn tips at 6 cm left and 6 cm right of center. The head height is 3 cm. The torso is 14 cm long and 4.5 cm deep. Legs are 4 cm. Check horn symmetry and torso depth.

Answer: Horn tips are symmetrical at 6 cm each side. Torso depth 4.5 cm equals one and a half head heights, so it is acceptable.

Reason: Symmetry means equal distances from center. 6 cm equals 6 cm. Torso depth guide is one and a half head heights: 1.5×3 cm $= 4.5$ cm, which matches.

Check: Subtract left and right tip distances from center; if equal, symmetry holds. Multiply head height by 1.5 and compare to torso depth.

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Original tasks 3, 4 / complete keys

Task 3

A student draws four legs from the torso to a level ground line. The leg lengths are 5 cm, 4 cm, 5 cm, and 4 cm. The torso bottom edge is not level: the front attachment points are 1 cm higher than the rear attachment points. Explain why the legs may still look uneven and give one fix.

Answer: Because the front leg tops start 1 cm higher than the rear leg tops, the front legs reach the ground with 1 cm more length than the rear legs even though the ground line is level. The animal looks uneven because the body underside slopes. Fix: redraw the torso bottom as a level line (or adjust leg lengths so each leg spans the same vertical distance from its attachment to the ground), then recheck that all four feet touch the level ground line.

Reason: Leg length is measured from the torso attachment to the ground. If front attachments are 1 cm higher, a 5 cm front leg and a 4 cm rear leg both reach the same ground line, but the body underside is tilted, so the stance looks uneven. Equalizing the torso bottom or compensating leg lengths removes the tilt.

Check: Draw a light horizontal line along the torso bottom and measure each leg from that line to the ground line. All four vertical spans should be equal; if not, level the torso bottom or adjust the leg lengths and re-measure.

Task 4

A longhorn drawing has a horn spread of 9 cm, head height 2 cm, torso length 12 cm, torso depth 3 cm, and legs 3 cm. Run the proportion checklist and list any failed items.

Answer: Horn spread 9 cm fits only if the page leaves at least one head height (2 cm) of margin on each side; page width is not given, so this item cannot be confirmed. Torso length 12 cm is longer than 9 cm and less than 13.5 cm, so acceptable. Torso depth 3 cm equals one and a half head heights, acceptable. Legs 3 cm equal torso depth, acceptable. Failed or unconfirmed items: horn-spread margin (needs page width to confirm).

Reason: Check each rule: spread margin depends on page width, which is not given, so it is unconfirmed rather than passed. Torso length range is above 9 cm and up to 13.5 cm; 12 cm fits. Depth is $1.5 \times 2 = 3$ cm. Legs equal to torso depth is a reasonable guide.

Check: Multiply head height by 1.5 for depth; multiply spread by 1.5 for maximum torso length; compare each value. For margin, subtract half the spread from half the page width and compare to one head height.

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Source rubric / reflection

- [ ] Horn spread is marked with equal left and right distances from center and fits the page with margin.
- [ ] Torso length is visibly longer than horn spread but not more than one and a half times the spread.
- [ ] Torso depth is about one and a half head heights, or a clearly stated alternative with reasoning.
- [ ] Four legs attach under the torso and reach a level ground line.
- [ ] Outline connects head, horns, torso, and legs with smooth curves.
- [ ] Proportion checklist is completed and any adjustments are noted.

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