Draw a Bear Crawl Exercise Figure with Limb Angles

Original tasks 1, 2, 3 / complete keys

Task 1

Draw a stick-figure bear crawl with a 12 cm torso and 8 cm limb segments. Label the shoulder angle as 90 degrees and the knee angle as 110 degrees. State the knee gap above the floor.

Answer: A horizontal torso with shoulder and hip circles 12 cm apart, limbs 8 cm, shoulder arc labeled 90 degrees, knee arc labeled 110 degrees, and a stated knee gap such as 1 cm.

Reason: The torso length and limb length set the scaffold scale. The labels must match the arcs, and the knee gap keeps the pose as a crawl rather than a kneel.

Check: Measure the shoulder and knee arcs with a protractor or grid; confirm the labels match and the knee circle is above the baseline.

Task 2

A drawing shows a hip angle labeled 100 degrees but the drawn arc measures 85 degrees. What should you change, and why?

Answer: Change the label to 85 degrees, because the label must match the drawn arc.

Reason: Angle callouts are checkable only if they agree with the drawing. The measured value is the correct label for that drawing.

Check: Re-measure the arc and confirm the new label equals the measured value in degrees.

Task 3

Draw a bear-crawl figure in a blank panel with no scaffold lines. Use a 10 cm baseline-to-midline distance and label all four joint angles. Note one valid alternative you chose.

Answer: A completed figure with a flat back, level hips, knees above the floor, four angle labels in degrees, and a note such as wider hands or a lower knee gap.

Reason: The x-height convention keeps proportions consistent. The note makes the alternative explicit so the drawing remains checkable.

Check: Confirm the baseline-to-midline distance is 10 cm, all labels are in degrees, and each label matches its arc.

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Original tasks 4 / complete keys

Task 4

Your figure has a shoulder angle of 90 degrees and an elbow angle of 120 degrees. The upper arm is 6 cm and the forearm is 6 cm. Estimate the wrist position relative to the shoulder and state one check.

Answer: With the upper arm 6 cm and forearm 6 cm, a 90-degree shoulder angle and a 120-degree elbow angle place the elbow 6 cm below the shoulder. The 120-degree elbow angle leaves the forearm 60 degrees from the upper-arm direction, so the wrist is about 3 cm further down and about 5.2 cm forward of the elbow. Relative to the shoulder, the wrist is therefore roughly 9 cm below and 5.2 cm forward in the chosen scale. Treat these as hypothetical estimates and confirm them against your drawn arcs.

Reason: The upper arm drops vertically from the shoulder under the 90-degree shoulder angle, putting the elbow about 6 cm below the shoulder. A 120-degree interior elbow angle means the forearm is 60 degrees from the upper-arm direction, so it goes forward and downward: $6 \cdot \cos(60°) = 3$ cm down and $6 \cdot \sin(60°) \approx 5.2$ cm forward from the elbow. Adding these to the elbow position gives a wrist roughly 9 cm below and 5.2 cm forward of the shoulder. The exact position follows from the drawn arcs, which is why the check is the angle measurement.

Check: Measure both arcs and confirm the wrist position is consistent with the labeled angles.

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Source rubric / reflection

- [ ] Pose reads as a bear crawl: hands and feet down, knees hovering, back flat, hips level.
- [ ] Scaffold shows shoulder, hip, knee, and ankle joints with a baseline and midline.
- [ ] Angle callouts appear at shoulder, elbow, hip, and knee, all in degrees.
- [ ] Each angle label matches the drawn arc within a small stated tolerance.
- [ ] Independent panel includes a one-line convention note and valid alternative choices are labeled.

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