Draw a Kitchen Food Scale with Dial, Platform, and Bowl

Original tasks 1 / complete keys

Task 1

Draw a scale with a base 8 cm wide and 2 cm tall, a platform ellipse 6 cm by 2 cm centered 3 cm above the base, and a dial 4 cm in diameter centered 7 cm above the base. Add a bowl with rim 7 cm by 3 cm and base 5 cm by 1.5 cm.

Answer: Base rounded rectangle 8 by 2 cm; platform ellipse 6 by 2 cm centered 3 cm above the base line; dial circle 4 cm diameter centered 7 cm above the base line; bowl rim 7 by 3 cm, base 5 by 1.5 cm centered on the platform; supports of any consistent width and spacing (for example, 1 cm wide, 2 cm apart, an added hypothetical choice not required by the prompt). The dial bottom is $7 - 2 = 5$ cm above the base line, and the platform top is $3 + 1 = 4$ cm above the base line, leaving a 1 cm gap; add a short neck or support connecting the platform top to the dial bottom, or adjust the dial center to 6 cm so its bottom meets the platform top at 4 cm. Draw the base first, then the platform, then the dial, then the supports and neck, then the bowl. Keep everything centered on the vertical center line and use dashed construction lines until the final solid pass.

Reason: Use the same proportion steps: base first, then platform, dial, supports, bowl. Keep all centered on the vertical line and use the convention for lines. The dial bottom and platform top leave a 1 cm gap that must be bridged by a neck or support, or removed by lowering the dial center to 6 cm.

Check: Measure base width (8 cm), platform height above the base (3 cm), dial diameter (4 cm), and bowl rim width (7 cm). Confirm the dial bottom is 5 cm above the base line and the platform top is 4 cm, so the 1 cm gap is bridged by a neck or the dial center is lowered to 6 cm. Confirm symmetry within 0.5 cm by measuring from the center line to each side, and check the dial is circular with a compass or round guide.

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Original tasks 2 / complete keys

Task 2

Draw a scale where the dial is 6 cm in diameter and centered 10 cm above the base, the platform is 9 cm by 3 cm centered 5 cm above the base, and the base is 11 cm by 3 cm. Add a shallow bowl with rim 10 cm by 4 cm.

Answer: Base 11 by 3 cm; platform 9 by 3 cm centered 5 cm above the base line; dial 6 cm diameter centered 10 cm above the base line; bowl rim 10 by 4 cm with base 7 by 2 cm; supports of any consistent width and spacing (for example, 1 cm wide, 3 cm apart, an added hypothetical choice not required by the prompt). The platform top is 6.5 cm (center 5 plus half-height 1.5); the dial bottom is 7 cm (center 10 minus radius 3), leaving a 0.5 cm gap. Add a 0.5 cm neck to connect the platform to the dial. The bowl rim is 1 cm wider than the platform, so keep the bowl centered and show the visible platform edge beside it.

Reason: The platform spans 3.5 to 6.5 cm above the base line. The dial spans 7 to 13 cm, so there is a 0.5 cm vertical gap between them; a 0.5 cm neck closes it. The bowl rim is 1 cm wider than the platform, so show its overhang while keeping it centered.

Check: Measure the platform top at 6.5 cm and dial bottom at 7 cm; confirm the 0.5 cm neck bridges the gap. Check that the 10 cm bowl rim is centered over the 9 cm platform and that the dial is circular.

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Original tasks 3 / complete keys

Task 3

Draw a scale with a base 9 cm wide by 3 cm high with square corners, a platform ellipse 7 cm by 2.5 cm centered 4.25 cm above the base, and a dial 5 cm in diameter centered 8 cm above the base. Use a bowl with rim 8 cm by 3.5 cm.

Answer: Square-cornered base 9 cm wide by 3 cm high; platform 7 by 2.5 cm centered 4.25 cm above the base line; dial 5 cm diameter centered 8 cm above the base line; bowl rim 8 by 3.5 cm, base 6 by 1.5 cm; supports of any consistent width and spacing (for example, 1 cm wide, 2.5 cm apart, an added hypothetical choice not required by the prompt). The platform bottom is $4.25-1.25=3$ cm, touching the 3 cm-high base top; its top is 5.5 cm, matching the dial bottom ($8-2.5=5.5$ cm). The square-cornered base changes the outline but not the centering; keep the platform and dial on the vertical center line and show the visible platform edge behind the bowl as a solid final line where the bowl overhangs.

Reason: The platform bottom is $4.25-1.25=3$ cm, exactly at the top of the 3 cm base. Its top is 5.5 cm and the dial bottom is $8-2.5=5.5$ cm, so the vertical stack touches without a gap. The bowl is centered over the platform.

Check: Measure the base width and height (9 by 3 cm), the platform center height (4.25 cm), and the dial diameter (5 cm). Check bowl centering and symmetry within 0.5 cm, confirm the bowl rim is 1 cm wider overall than the platform (0.5 cm per side) with a solid platform edge behind the bowl, and confirm the dial is circular.

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Original tasks 4 / complete keys

Task 4

Draw a scale with a base 12 cm wide and 3 cm tall, a platform 10 cm by 3 cm centered 5 cm above the base, and a dial 7 cm in diameter centered 11 cm above the base. Add a bowl with rim 11 cm by 4 cm and base 8 cm by 2 cm.

Answer: Base 12 by 3 cm; platform 10 by 3 cm centered 5 cm above the base line; dial 7 cm diameter centered 11 cm above the base line; bowl rim 11 by 4 cm, base 8 by 2 cm; supports of any consistent width and spacing (for example, 1 cm wide, 4 cm apart, an added hypothetical choice not required by the prompt). The platform top is 6.5 cm and the dial bottom is $11-3.5=7.5$ cm, so add a 1 cm neck to connect them. The 11 cm bowl rim is 1 cm wider than the 10 cm platform; center it and show the overhang.

Reason: The platform spans 3.5 to 6.5 cm above the base line, and the dial begins at 7.5 cm; a 1 cm neck fills the gap. The bowl rim is 1 cm wider than the platform, so center it and show that overhang.

Check: Measure bowl rim width (11 cm) and platform width (10 cm) and confirm the visible 1 cm overhang is shown with a solid platform edge behind the bowl. Confirm the platform top is 6.5 cm, dial bottom is 7.5 cm, and a 1 cm neck bridges them. Check symmetry within 0.5 cm.

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Source rubric / reflection

- [ ] Proportions within 1 cm of planned dimensions.
- [ ] Symmetry within 0.5 cm from the center line.
- [ ] Dial is circular and legible with consistent markings.
- [ ] Platform is elliptical, not circular.
- [ ] Bowl sits centered on the platform and overlaps correctly.
- [ ] Convention followed: dashed construction, solid final, parallel hatching.
- [ ] Final lines clean and construction lines erased.

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