Easy Ball Drawing: Sphere Shading with Highlight and Cast Shadow

Original tasks 1, 2 / complete keys

Task 1

A circle is 10 cm across. The light arrow points from the upper right. State where the highlight, core shadow, reflected light, and cast shadow should go, and give one size example for the highlight.

Answer: Highlight on the upper-right area; core shadow on the lower-left side; reflected light as a thin strip near the lower-left rim; cast shadow on the ground plane at the lower left, touching the ball at its base. A hypothetical highlight size is about 2 cm across, one-fifth of the diameter.

Reason: The highlight faces the light, the core shadow is opposite the light, reflected light sits near the dark rim, and the cast shadow falls opposite the light direction.

Check: Draw a faint line from the light arrow through the ball center; the cast shadow should be on the opposite side. Confirm the highlight is on the lit side and the core shadow is on the dark side.

Task 2

A ball drawing has its highlight in the center, a dark band on the upper left, and a cast shadow on the upper left. The light arrow points from the upper left. List two corrections and explain the value order you want after correction.

Answer: Move the highlight to the upper-left lit side and move the core shadow to the lower-right dark side. Move the cast shadow to the lower right, opposite the light. After correction the value order should be: highlight lightest, midtones medium, core shadow darkest on the ball, reflected light slightly lighter than the core shadow.

Reason: The original placement contradicts the light direction. Correcting the sides restores the standard sphere convention.

Check: Squint at the drawing: the ball should look round with the darkest band away from the light and the cast shadow opposite the light arrow.

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Original tasks 3, 4 / complete keys

Task 3

You are shading a 6 cm circle with light from the upper left. You want a reflected-light strip about 0.5 cm wide near the lower-right rim and a core-shadow band about 1 cm wide inside it. Describe the order of these zones from the lower-right rim inward and state which zone is darkest.

Answer: From the lower-right rim inward: a thin reflected-light strip about 0.5 cm wide, then a core-shadow band about 1 cm wide, then midtones toward the highlight side. The core-shadow band is the darkest zone on the ball.

Reason: Reflected light sits near the rim on the dark side, and the core shadow is just inside it. The core shadow is darker than the reflected light.

Check: Compare pencil values: the reflected-light strip should be lighter than the core-shadow band, and the core-shadow band should be darker than the midtones.

Task 4

A cast shadow is drawn as a hard rectangle on the lower right of a ball lit from the upper left. The rectangle does not touch the ball. Describe two changes to make the cast shadow more convincing and give one value check.

Answer: Change the rectangle to a soft oval or wedge that touches the ball at its base, and make the far edge lighter and softer than the near edge. Value check: the part of the cast shadow nearest the ball should be darker than the far edge, and the core shadow on the ball should remain the darkest area on the ball.

Reason: A cast shadow contacts the object at its base and fades away from the contact point. A hard rectangle that does not touch the ball breaks the light logic.

Check: Trace a line from the light arrow through the ball center to the cast shadow; confirm the shadow is opposite the light and touches the base.

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Source rubric / reflection

- [ ] The drawing shows one sphere with a clear light direction.
- [ ] The highlight is on the lit side and is the lightest area on the ball.
- [ ] The core shadow is on the dark side and is the darkest area on the ball.
- [ ] A reflected-light strip is present and is lighter than the core shadow but darker than the highlight.
- [ ] The cast shadow is opposite the light and touches the ball at the base.
- [ ] The cast shadow fades away from the contact point.
- [ ] The value order is consistent: highlight lightest, midtones medium, core shadow darkest, reflected light slightly lighter than core shadow.
- [ ] Valid alternatives such as crosshatching or a larger highlight are accepted if the value relationships remain consistent.

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