Draw a Simple Trap: Lever, Base, and Trigger

Original tasks 1, 2 / complete keys

Task 1

Draw a top view of a trap with a base 10 cm by 5 cm, a lever 8 cm long and 2 cm wide, and a pivot 2 cm from the left edge. Label B, P, L, and T. Use solid and dashed lines correctly.

Answer: A correct drawing shows a 10 cm by 5 cm base rectangle labeled B, a pivot dot P 2 cm from the left edge, an 8 cm lever rectangle crossing P at a slight angle and labeled L, and a trigger bar from the lever end to a base notch labeled T. Hidden parts are dashed; labels are outside with leader lines.

Reason: The pivot position is fixed by the 2 cm distance, so the lever must cross that point. The trigger must connect the lever end to the base to hold the lever.

Check: Measure the base sides and lever length with a ruler; confirm the pivot is 2 cm from the left edge and that the lever crosses the pivot dot P. Check that every hidden line is dashed and every label has a leader line.

Task 2

Draw a side view of the same trap: base as a thin horizontal rectangle, lever as a tilted rectangle above it, pivot as a small circle at the joint, and trigger as a short bar from the lever end down to the base. Label all parts.

Answer: A correct side view shows a thin base rectangle labeled B, a tilted lever rectangle labeled L resting on a pivot circle P, and a trigger bar labeled T from the lever end to the base. The pivot circle is at the joint, and hidden parts behind the lever are dashed.

Reason: A side view shows the lever angle and the trigger connection more clearly than a top view. The pivot must be at the joint where lever and base meet.

Check: Confirm the lever touches the pivot circle and the trigger reaches the base. Check that the base is horizontal and the lever is tilted. Verify labels are outside the outline and letters have consistent x-height.

Draw a Simple Trap: Lever, Base, and Trigger

Original tasks 3, 4 / complete keys

Task 3

Draw a trap with a base 14 cm by 7 cm and a lever 12 cm long. Place the pivot 3 cm from the right edge. Add a second dashed line to show the hidden axle. Label B, P, L, and T, and write one sentence explaining how the trigger holds the lever.

Answer: A correct drawing shows the 14 cm by 7 cm base, the pivot 3 cm from the right edge, the 12 cm lever crossing the pivot, a dashed hidden axle, and a trigger from lever end to base notch. The sentence should state that the trigger connects the lever end to the base and prevents the lever from rotating until released.

Reason: The hidden axle explains how the lever rotates under the base. The trigger's role is to block rotation, so it must connect lever and base.

Check: Measure the pivot distance from the right edge and the lever length. Check that the hidden axle is dashed and starts at the pivot. Read the sentence to confirm it describes the trigger holding the lever.

Task 4

Redraw the trap from a different angle: draw the base as a parallelogram to suggest perspective, keep the lever and trigger connections clear, and label all parts. Use the same convention and x-height lettering.

Answer: A correct perspective drawing shows a parallelogram base labeled B, a pivot dot P, a lever rectangle labeled L crossing the pivot, and a trigger labeled T connecting lever end to base. Connections remain clear, hidden lines are dashed, and labels use consistent x-height letters.

Reason: A parallelogram suggests depth without changing the mechanism. The lever must still touch the pivot and the trigger must still connect lever and base.

Check: Check that the parallelogram has opposite sides parallel and that the lever touches the pivot. Confirm the trigger reaches the base and that labels are outside with leader lines. Verify letter heights are consistent.

Draw a Simple Trap: Lever, Base, and Trigger

Source rubric / reflection

- [ ] Base is drawn as a closed rectangle with a solid outline and labeled B.
- [ ] Pivot dot P is visible and the lever touches or crosses it.
- [ ] Lever L is a long rectangle at a slight angle and extends beyond the base.
- [ ] Trigger T connects the lever end to a notch on the base.
- [ ] Hidden edges use dashed lines and visible edges use solid lines.
- [ ] Labels B, P, L, and T are outside the drawing with leader lines.
- [ ] Lettering uses a consistent x-height from baseline to midline; any clear style is acceptable.
- [ ] The mechanism logic is checkable: lever on pivot, trigger to base, base supports pivot.

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