Bumblebee Drawing: Wing, Stripe, and Leg Construction

Topic reference / ordinary illustration



Ordinary topic reference. Hypothetical dimensions in the four tasks are supplied in their own text; this illustration is not their measured answer.

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Worked example / complete source key

A student draws a bumblebee with head width 1 unit, thorax width 1.2 units, abdomen width 1.8 units, and abdomen length 2.5 units. The abdomen has five bands with widths 0.4, 0.5, 0.4, 0.6, and 0.5 units. Two wings attach at the thorax, and six legs are drawn without crossing. Check the band width ratio and the abdomen-to-head length ratio, then state whether the construction passes.

Answer: The widest band is 0.6 units and the narrowest is 0.4 units. The ratio is 0.6 ÷ 0.4 = 1.5, which is within the 2:1 limit. The abdomen length is 2.5 units and the head length is 1 unit, so the ratio is 2.5, which matches the target of about 2.5 times the head length. Two wings attach at the thorax, and six legs do not cross. The construction passes the check.

Reason: Band width ratio is found by dividing the widest band by the narrowest. A ratio of 1.5 is less than 2, so the stripes are acceptably even. The abdomen-to-head length ratio is 2.5 ÷ 1 = 2.5, which matches the target of about 2.5 times the head length. The other checks are stated as satisfied, so the drawing meets the construction rules.

Check: Re-measure the widest and narrowest bands, divide the larger by the smaller, and confirm the result is 2 or less. Divide abdomen length by head length and confirm the result is close to 2.5. Then count two wings at the thorax and six non-crossing legs.