Draw and Compare Three Arrow Variants: Shaft, Head and Fletching

Original tasks 1, 2 / complete keys

Task 1

Draw a hunting arrow with a shaft 12 cm, a two-blade head 2.5 cm long and 1.5 cm wide, and three fins 3.5 cm long and 1.5 cm tall. Label the three parts and write a construction note in centimetres.

Answer: A 12 cm horizontal shaft with a nock at the left. At the right, a two-blade head 2.5 cm long and 1.5 cm wide with a central spine. In the left zone, three fins 3.5 cm long and 1.5 cm tall, shown with one above and one below the shaft and the third suggested behind. Labels for shaft, head and fletching. Note: shaft 12, head 2.5 by 1.5, fins 3.5 by 1.5, count 3, unit cm.

Reason: The convention fixes direction and part positions. The stated lengths set the head and fin sizes, and the fin count sets how many fins to draw. The note records the same numbers so another person can check the drawing.

Check: Measure the shaft line and confirm 12 cm. Measure the head length and width and confirm 2.5 cm and 1.5 cm. Count three fins and measure one fin at 3.5 cm by 1.5 cm. Confirm all three labels point to the correct parts and that the note uses centimetres throughout.

Task 2

Draw a flu-flu arrow with a shaft 12 cm, a blunt head 1 cm long and 1.5 cm wide, and six fins 4 cm long and 2 cm tall. Label the parts and write one sentence comparing its fletching with a three-fin target arrow.

Answer: A 12 cm shaft with a nock at the left and a rounded blunt head 1 cm long and 1.5 cm wide at the right. Six tall fins 4 cm long and 2 cm tall packed in the left zone, drawn as three above and three below the shaft. Labels for shaft, head and fletching. Comparison sentence: the flu-flu arrow has more fins and taller fins than the three-fin target arrow.

Reason: The blunt head is shorter and wider than a narrow triangle, and six fins require a denser arrangement. The comparison sentence names the feature, fin count and fin height, and matches the visible difference.

Check: Confirm the shaft is 12 cm and the head is 1 cm by 1.5 cm. Count six fins and measure one at 4 cm by 2 cm. Check that the comparison sentence mentions both more fins and taller fins, and that both differences are visible in the drawing.

Draw and Compare Three Arrow Variants: Shaft, Head and Fletching

Original tasks 3, 4 / complete keys

Task 3

In a blank frame, design a new arrow that combines a narrow triangular head 2 cm long and 1 cm wide with five fins 3 cm long and 1.5 cm tall. Use a 12 cm shaft. Label the parts, write a construction note, and state one way your design differs from the target arrow in the lesson.

Answer: A 12 cm shaft with a nock at the left, a narrow triangle 2 cm long and 1 cm wide at the right, and five fins 3 cm long and 1.5 cm tall in the left zone. Labels for shaft, head and fletching. Note: shaft 12, head 2 by 1, fins 3 by 1.5, count 5, unit cm. Difference statement: the design has five fins instead of three and taller fins than the target arrow, while the head shape is the same.

Reason: The design uses stated values for each part. The difference statement compares fin count and fin height, which are the features that actually change, and correctly notes that the head shape is unchanged.

Check: Measure the shaft, head and one fin against the stated values. Count five fins. Read the difference statement and confirm it names a feature that is visibly different and does not claim a change in the head shape.

Task 4

A student draws three arrows but uses 12 cm, 10 cm and 14 cm shafts, then writes a comparison saying the hunting arrow has a broader head. Explain what is wrong with the comparison and describe how to correct the drawing and the sentence.

Answer: The shafts are unequal, so the drawings do not support a fair comparison of head and fletching. Correct the drawing by redrawing all three shafts to the same length, for example 12 cm each, and scaling the heads and fins by the same factor if needed. Then rewrite the comparison so it names the measured head widths, for example the hunting head is 1.5 cm wide while the target head is 1 cm wide.

Reason: A comparison is only checkable when the shared feature, here the shaft, is held constant. Unequal shafts introduce a difference that is not part of the claim. Naming measured widths makes the sentence match the drawing.

Check: Measure all three shafts and confirm they are equal. Measure the two head widths and confirm the numbers in the rewritten sentence match the drawing. Check that the sentence compares the same feature in both arrows.

Draw and Compare Three Arrow Variants: Shaft, Head and Fletching

Source rubric / reflection

- [ ] Convention followed: head points right, nock at left, fletching in the left zone.
- [ ] Shaft drawn as one straight line and all compared shafts equal in length.
- [ ] Head shape and size match the chosen variant description.
- [ ] Fletching count and height match the chosen variant description.
- [ ] Labels shaft, head and fletching are present and correctly connected.
- [ ] Construction note uses one unit and states lengths clearly.
- [ ] Comparison sentences use comparative words that match visible differences.
- [ ] Valid alternatives accepted when the drawing is readable, labeled and internally consistent.

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