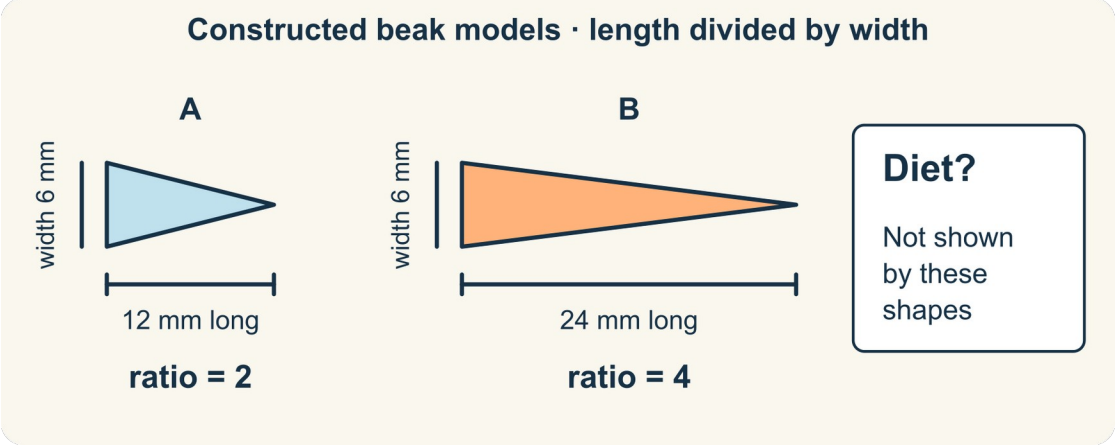
A beak drawing and a function question

What can shape alone suggest, and what needs a checked reference?

Compare two original beak models numerically, then separate a visible feature from a claim about how a bird lives.

Investigate | 15–25 minutes, or one comparison | Paper and a pen or pencil, The supplied model; no purchase, account or internet connection needed

Start here Use two fictional beak models measured by the same drawing convention: A is 12 mm long and 6 mm wide; B is 24 mm long and 6 mm wide. These are model labels, not measurements of real birds.



Shape measurements do not name a diet

1 Compare like measurements

Keep units and measurement points consistent. Length-to-width ratio is length divided by width: A = 12 / 6 = 2; B = 24 / 6 = 4.

2 State what the drawing supports

B is twice as long in this model and has twice A's length-to-width ratio. Both have the same stated width. This is a shape comparison, not an identification.

3 Question a function claim

The silhouette might suggest a question about reach or handling food, but it does not establish a diet. Real beaks serve several functions, and similar shapes need not be used in exactly the same way.

4 Name better evidence

For a real species question, seek a checked species reference and observations of what that species does. You can finish by stating what evidence is missing; do not catch, feed or test a bird.

Two ratios no invented diet

Both outlines and all dimensions are original constructed models.

• A: 12 mm/6 mm = 2. B: 24 mm/6 mm = 4. These ratios have no unit because the same units cancel.

• B's model length is 2 × A's. The figures alone do not prove B eats a particular food or has greater feeding success.

• A useful question is "What evidence would connect this feature with a function in a named species?" It is more precise than assigning a diet to an unnamed drawing.

What this example can show Model dimensions do not reveal material properties, movement, ancestry, behaviour or ecological context. The reference research does not validate these fictional beaks.

A different way

Use the supplied calculations and compare "what is labelled" with "what is unknown", or have someone describe the two outlines. A calculator is optional, not required.

If you want to go further

Scale A to 24 mm long and 12 mm wide. Its ratio remains 2: explain why size and proportion are different comparisons.

Something to notice

Which part of my account came from the model, and which would require evidence about a real species?

Read or explore more

Horizon topic Bird Beaks

https://launchhorizonhq.com/learn/bird-beaks/

Horizon topic Animal Classification

https://launchhorizonhq.com/learn/animal-classification/

Horizon topic Zoology

https://launchhorizonhq.com/learn/zoology/

University of Bristol Bird beaks did not adapt to food types as previously thought

https://www.bristol.ac.uk/news/2019/january/adaptation-of-bird-beaks-.html

Okinawa Institute of Science and Technology Birds have beaks that are a compromise of many functions

https://www.oist.jp/news-center/news/bbu/2022/1/27/birds-have-beaks-are-compromise-many-functions