

Allometries

We observe allometries in adult animals and their young.

The animals seem similar, they differ, however, in vital parts.

- a) Give reasons from a mathematical point of view, in how far the animals are not similar.

Confirm the allometries between the young and the old elephant.

Clue: Measure various body parts.

- b) Determine the stretch factor k for the shoulder heights and the stretch factor m for the head lengths. Compare. Compare also the ratio of head length and body length.

- c) Find reasons, from a biological point of view, for the advantages of “non-similarity”.



Locomotion behaviour and body Shapes in Insects

For an insect's life a particular volume is obviously adequate.
Their body shapes, however, differ, according to their life styles.
A dragonfly, for example, is very slim, while a beetle is rather round and armoured.

Tasks:

a) Estimate the volume and the surface in the dragonfly and the beetle by measuring them in the photos. Compare.

b) Compare the locomotion behaviour in the dragonfly and the beetle. Mark each by characteristic keywords:..

c) Find biological reasons for the differences under a) with the help of the characteristics under b).



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Is there similarity between animals?

- a) Measure selected lengths (shoulder heights, head and back lengths).
Are the animals similar (in the mathematical sense)?
- b) Investigate the similarity in another way (stretching factor, weight etc).



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