

ARTHROPOD

1 Tsetse flies attack animals with short fur, sucking their blood and spreading diseases.

Fig. 4.2 shows a tsetse fly. This fly is an insect, belonging to the arthropod group.

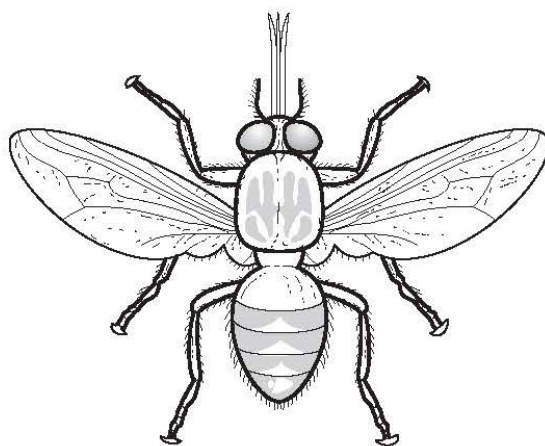


Fig. 4.2

(a) (i) State **one** feature, **visible in Fig. 4.2**, which is common to all arthropods.

..... [1]

(ii) State two features, **visible in Fig. 4.2**, which distinguish insects from other arthropod groups.

1.

2. [2]

Scientists have discovered that zebras with more horizontal stripes attract fewer tsetse flies.

(b) (i) Suggest why the stripes on the head and neck of the zebra would be an advantage when it feeds on grass on the ground.

..... [2]

(ii) Describe how a species of zebra could gradually develop more horizontal stripes.

.....
.....
..... [3]

- (a) (i) exoskeleton / external skeleton ;
segmented / jointed, limbs / legs / appendages ;
segmented body ; [max 1]
- (ii) three parts to the body / head + thorax + abdomen ;
 A sections / **R** segments
wings ; *ignore numbers of wings if given*
6 / 3 pairs of, legs ; [max 2]
- (b) (i) stripes (on head and neck), become / are, horizontal (when feeding) ;
less attractive to (tsetse), flies / insects ;
A camouflage in grass ; [2]
- (ii) 1 ref to mutation and number of stripes ;
2 ref to number of stripes and likelihood of being bitten ;
3 ref to, disease / death ;
4 survivors breed ;
5 ref to offspring ; (fewer stripes = less / more stripes = more)
6 passing on advantageous, alleles / genes (for more stripes) ;
7 natural selection / survival of fittest ;
- R** artificial selection [max 3]