

CHAPTER 4**HANDOUT****The Peppered Moth Debate****BLM 4.2.8****Question**

1. A key principle of the theory of evolution by natural selection is as follows:

The mechanism by which one species evolves into another species involves random, heritable genetic mutations. Some mutations result in a survival advantage for an individual; if so, the individual is more likely to survive and pass this mutation on to its offspring. Eventually, the successful mutation increases in the population and causes the population as a whole to start to change.

Use documented research to defend the argument that “Industrial melanism and the peppered moth provide clear evidence of evolution by natural selection,” or to elaborate on the points against this argument that are presented below.

Points and Evidence Against	Points and Evidence in Support
1. The classic Kettlewell study involved the placement of moths on tree trunks. The peppered moth is rarely found resting on the trunk of the tree in nature.	1.
2. The degree to which the moths were camouflaged against their surroundings was established by human observation. Birds have greater visual perception, with the ability to see into the ultraviolet range of the spectrum.	2.
3. The case for industrial melanism is oversimplified. It doesn't address whether colouration is the only factor leading to differential survival rates.	3.