Assessment Schedule – 2007

Science: Describe the factors and processes involved in the evolution of New Zealand's plants and animals (90772)

Evidence Statement

Q	Achievement	Achievement with Merit	Achievement with Excellence
1(a)	A random change in genetic information.		
(b)	Eg: chemicals, UV radiation, X-rays etc. *(TWO valid required.)*		
(c)	Mutations are more likely to stop a gene operating **OR** normal allele works better.	Mutations are more likely to stop a gene operating **AND** normal allele works better. *(Explains link between how genes operate required.)*	
(d)	Some mutations are neutral **OR** when happen give carrier a future advantage **OR** evolution can select for these mutations. *(ONE described.)*	Some mutations are neutral **AND / OR** when happen give carrier a future advantage **AND / OR** evolution can select for these mutations. *(ONE valid link explained.)*	Some mutations are neutral **AND** when happen give carrier a future advantage **AND** evolution can select for these mutations. *(Complete process discussed and linked to evolutionary process.)*
2(a)	Gondwana		
(b)	Formation of the Tasman Sea.	Formation of Tasman Sea **AND** separated the mammals in NZ. *(Link explained between separation and isolation.)*	
(c)	Populations became isolated **OR** NZ small land area **OR** land areas inundated by the sea **OR** populations reduced, hence bottleneck effects **OR** climate change. *(ONE effect described.)*	Populations became isolated **AND / OR** NZ small land area **AND / OR** land areas inundated by the sea **AND / OR** populations reduced, hence bottleneck effects **AND / OR** climate change. *(ONE reason linked and explained.)*	Populations became isolated **AND** NZ small land area **AND** land areas inundated by the sea **AND** populations reduced, hence bottleneck effects **AND** climate change. *(TWO reasons linked and the process of extinction discussed.)*
3(a)	Reference to transform fault movement.		
(b)	Eg competition. *(Valid biological factor.)*	Areas have different competitors so will evolve differently. *(Valid link to explain the biological factor.)*	
(c)	Founder effect of common ancestor described.	Founder effect evolved different areas **AND** different selection pressures, plains and island, **OR** different mutations **OR** possible bottlenecks. *(Founder effect used to explain speciation)*	Founder effect evolved different areas **AND** different selection pressures, plains and island, **AND** different mutations **AND** possible bottlenecks. *(Founder effect used, along with other key factors to discuss the process of speciation.)*

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
SIX questions answered correctly. Minimum of 6 × A	SIX questions answered correctly, including at least THREE at Merit level. Minimum of 3 × M + 3 × A	SIX questions answered correctly, including at least TWO at Excellence level and at least TWO at Merit level. Minimum of 2 × E + 2 × M + 2 × A