**Check In: Non-Mendelian Genetics**

**Outcome 5**

**Name: Biology 12**

1. In certain fish, blue scales are dominant to red scales but when their genotype is heterozygous they show a patchwork of blue and red scales.
2. Are the patchwork fish a result of co-dominance or incomplete dominance? Explain how you know.
3. What are the phenotypic ratios of the offspring if you were to breed a patchwork fish with a blue scales fish? Use B/R to represent your alleles.
4. In Andalusian fowls (a type of bird), there are black birds (BB) and white birds (WW) and heterozygous birds are a greyish colour.
5. Are the grey birds a result of co-dominance or incomplete dominance? Explain how you know.
6. What is the phenotypic ratio of offspring when a black bird is crossed with a greyish one?
7. What is the difference between multiple alleles and polygenic inheritance?
8. In 1968, before the ability to do DNA fingerprinting, there were 2 parents who felt their babies were switched at the hospital. Decide if the baby each parent has is likely theirs or not. Explain your answer.
9. With scenario 1, the mother has type O blood and the father has type AB blood, if the baby they have has type O blood, can it be theirs? Explain.
10. With scenario 2, the mother has type A blood and the father has type B blood, the baby has type AB, can it be theirs? Explain.
11. Using the Sunnys below, complete the following questions. In the world of Sunnys, Circle Sunny is dominant to Spikey Sunny and Bare Sunny is recessive to both. Circle-Spike Sunny is heterozygous and co-dominant.
12. What are the possible genotypes for each Sunny? Make sure to give a superscript for each.
13. If a Circle Sunny is crossed with a Bare Sunny, what will their offspring be?
14. A female Sunny who is spiked is partners with a male sunny who is circle and they have a child who is bare. What are the parent’s genotypes?

Circle Spiked Circle-Spiked Bare

Sunny Sunny Sunny Sunny

