2016 Tutorial 1
Problems to attempt prior to class:

1.1 Mendelian inheritance: If two parents have genotypes of $\mathbf{A_1A_2}$ and $\mathbf{A_1A_2}$ at a single locus, what are the expected frequencies of the different progeny genotypes?

1.2 Mendelian inheritance: What are the expected proportions of the different progeny genotypes produced from the cross between $\mathbf{A_1A_2\ B_1B_2}$ and $\mathbf{A_1A_2\ B_1B_2}$ parents, assuming independent assortment of the A & B loci?

1.3 Transcription and translation: Given the strand of DNA below, insert the complimentary strand, the mRNA, the tRNA anticodon and the amino acids which would be specified.

TAC TTT GGG ATT

1.4 Statistics. The four phenotypes in an F2 were found in the numbers 100:20:35:5. Use a chi-squared test to determine whether these differ from the 9:3:3:1 expectation.

1.5 IUCN Red list search. Navigate to the IUCN red list website (http://www.iucnredlist.org/). Use the "other search options" tab (next to the search field) to run a search for information on the following:

Taxonomy: Mammals (native)
Location: Queensland, Australia
Habitat: Forest - Subtropical/Tropical Moist Lowland

Taxonomy: Native members of the butterfly (Lepidopteran) family Lycaenidae
Location: Australia

Assessment: Categories EX (extinct) and EW (extinct in the wild)
Location: Australia

(a) How many species does your search reveal in each case?

(b) Pull up the fact sheet for the *Thylacine* (Tasmanian Tiger) and find the justification for its listing. When was the last confirmed record of this species:
(b.1) In the wild?
(b.2) In captivity?

(c) Do you think this species' IUCN listing is justified? What are your personal thoughts?