Angiosperms

***Micro/mega gametogenesis**
Pollination
Embryogenesis

- Tapetal tissues are not only found in angiosperms but older groups like ferns- have a variety of functions associated with them.
- When the male and female structure are on the same flower- results in inbreeding and loss of hybrid vigour and thus loss of genetic variation.
- Genreal result in meiosis is 4 haploid cells. Other organisms don't have a different number of progeny formed after meiosis- 4 is a general number.
- Immature haploid spore- then you'll have a process of maturation that occurs- and will create a protective layer around it to avoid damage to the insides- its a tough process. The haploid spores will undergo mitotic division and result in vegetative and generative cells. The complexity is that usually you would think about cells as distinct separate cells but in fact if you think of the maturation process they are both embedded and look like they are in the same cell. Looks like the generative cell is inside the vegetative cell and is thus protected.
- The vegetative nucleus is important in controlling the growth of the pollen- the pollen will then germinate and this is driven by the DNA contained in the vegetative nucleus.
- The generative cell is protected inside the vegetative cell- will fuse with a haploid and create a mega cell.
- When and how this occurs varies depends on the type of species you're working on- but generally occurs within the anthers of the flower. Maturation results a tough outer coating.
- Things get strange in plants because its not a single fertilization event that occurs- its actually 2 and is known as the double fertilization. Initially the degenerative cell will undergo mitosis- forms 2 haploid nuclei- those 2 generative cells will be carried towards the tip and will fertilize two different mega gametophytes and will from a triploid endosperm whilst the other is fertilized to form a zygote. The triploid endosperm then surrounds the developing zygote.
- Mitosis results in generative cell which then undergoes a 2nd mitosis.
- **Above- microgametogenic process**

Megagametogenic process

- Fairly similar complexity associated with it- occurs in the angiosperms.
- This process is the eventual formation of an 8 nuclei embryo sac. Will show where the triploid and zygote is created in terms of fertilization.
- Whats going o occur is you're going to get a sporophyte initial diploid being formed- will undergo a meiotic division so don't start with a mother cell - will see 4 haploid cells. In the context of thinking about what occurs here, there are some variations on a theme which are associated whether or