









- 1  **Chapter 4**  
Sex Determination & Sex-linked Characteristics
- 2  **4.1 Sex determination**
  - ▶ Sex
  - ▶ Sex determination mechanisms
  - ▶ Monoecious
    - ▶ Hermaphroditism
  - ▶ Dioecious
  - ▶ Sex chromosomes
  - ▶ Autosomes
- 3  **Terms**
  - ▶ Heterogametic
  - ▶ Homogametic
  - ▶ XX-XO
  - ▶ XX-XY
  - ▶ ZW-ZZ
  - ▶ Haplodiploidy
  - ▶ Genic
  - ▶ Environmental
    - ▶ Sequential hermaphroditism
  - ▶
- 4  **Humans**
  - ▶ Nondisjunction
  - ▶ Turner syndrome XO
  - ▶ Klinefelter syndrome XXY
  - ▶ Poly-x XXX or more
  - ▶
- 5 
  - ▶ XX males?
    - ▶ Sex determining region Y (SRY)
  - ▶
  - ▶
  - ▶ XY females?
    - ▶ Androgen-insensitivity syndrome
  - ▶
  - ▶
  - ▶
  - ▶ Olympics & History
- 6  **Sex linked characteristics**
  - ▶ Thomas Hunt Morgan
  - ▶ Drosophila eye color x-linked
- 7 
  - ▶ Hemizygous
    - ▶ Males at X-linked loc
- 8  **Model Organism**
  - ▶ Short generation time
  - ▶ Mate in 8 hours
  - ▶ Eggs in 2 days
  - ▶ 400-500 eggs
  - ▶ Easy to culture
  - ▶ Easy to determine gender & virgin females

This is only a guideline topics discussed in-class as well as the assigned pages from the text and supplemental material may also be on the exam.

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▶ Human color blind trait

10 

**Dosage compensation**

▶ Drosophila

▶ 2x X in males

▶ C. elegans

▶ 1/2 both

▶ Mammals

▶ Lyon hypothesis

▶ Barr body

▶ random mosaics

Tortoiseshell cats

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