

## ***Sexual and Asexual Reproduction***

### ***A Lesson Based on Lecture 1: Deciphering the Language of Sex***

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**Goal:** To teach students the benefits of sexual and/or asexual reproduction strategies.

#### **Learning Outcomes**

Students should be able to:

- °Explain in general terms why different species have different reproductive strategies (sexual v. asexual)
- °Explain the advantages and disadvantages of sexual and asexual reproduction
- °Explain the importance of the SRY gene in human sex determination

**VISUAL EXERCISE** to help understand the concepts of gene swapping. View the animation of male meiosis. Discuss the importance of gene swapping as well as the consequences of errors in swapping between X and Y.

#### **Assignment:**

1. View Lecture 1 and take notes.
2. Concepts to know:

sex chromosome	sexual differentiation
autosome	gene swapping
sexual dimorphism	Turner Syndrome
parthenogenesis	Kleinfelter Syndrome
cloning	
3. Answer the “Question Sets” as a class or a group. Discuss your answers.

**DISCUSSION** of the lecture concepts (This could be done as a class discussion or group assignment)

1. Which is more advantageous, Sexual or Asexual Reproduction? Give positives and negatives of both.
2. How do scientists define “male” and “female” on three different levels?
3. Which sex would a human be with XO sex genes? How would you explain this given the information from Lecture 1?  
Which sex would a human be with XXY sex genes? How would you explain this given the information from Lecture 1?
4. How are animal models used in answering questions about human heredity? When are animal models not appropriate? How can scientists answer the human questions when good animal models are not available?

5. A friend has a houseplant that you admire. She offers to give you one of your own, but you can have either a cutting that will root itself, or a handful of seeds. Which do you choose? Why?