Gene Expression

Biology – Mr. Hall

UNIT OUTLINE

Homework/Activities

- **Engage: Squoovian Gene Expression** (2 pgs.)
  The Activity #1-5
  Follow Up Questions #1-4
- **Explore: Oh, the Drama!** (2 pgs.)
  The Activity #1-10
  Follow Up Questions #1-5
- **Explain: That Only Happens in the Movies!** (2 pgs.)
  The Activity #1-11
  Follow Up Questions #1-10
- **Elaborate: Gene Research Online** (4 pgs.)
  The Activity #1-18
  Follow Up Questions #1-7
- **Evaluate: CSI and Frankenfood** (4 pgs.)
  The Activity #1
  Follow Up Questions #1-35

Concepts/Topics

Basics

- Define DNA, chromosome, gene, trait
- Structure (nucleic acid): sugar phosphate backbone, nucleotides, bases, DNA (double-stranded, complementary bases)
- DNA/RNA comparison: sugar type, # strands, 4^{th} base
- Transcription: mRNA synthesis, nucleus, involves enzymes
- Translation: protein synthesis, cytoplasm, enzymes & RNAs
- Codons and anti-codons, amino acids, essential amino acids
- Gene technology: PCR and modern uses of molecular genetics

Beyond the Basics

- Designer life forms - to clean pollution, spider silk ropes
- Growing meat (and other tissues) in a dish
- Designing new life from scratch
- Write a story where one of the above goes horribly wrong

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