Reproduction and Development Objectives

Enduring understanding 2.E: Many biological processes involved in growth, reproduction and dynamic homeostasis include temporal regulation and coordination.

Essential knowledge 2.E.1: What is necessary for the normal development of an organism, and how is it regulated?

2.E.1.a. What causes observable cell differentiation?

2.E.1.b. Explain the role of transcription factors during development and how they result in sequential gene expression.

2.E.1.b.1. Homeotic genes are involved in the development of what?

2.E.1.b.2. Explain how seed germination is regulated in most plants.

2.E.1.b.4. What is the effect of genetic mutations in development?

2.E.1.b.5. Genetic transplantation experiments have given evidence of what?

2.E.1.b.6. What is the role of microRNAs in the development of organisms?

2.E.1.c. Explain how programmed cell death (apoptosis) effect normal development and differentiation by using one of the below examples.

- Morphogenesis of fingers and toes
- Immune function
- C. elegans development
- Flower development