

Subject: Science

Unit: Genetics-Chapters 3 and 4

**Part I: Clarity of Learning Targets**

**What are the grade level indicators that go with this unit? Place a star next to the grade level indicators that are Power Indicators. Are the indicators in student friendly language? Place the level of Bloom's Taxonomy next to each Power Indicator.**

- A.) recognize that living things need to reproduce to pass on their traits because they will not live forever. (conceptual, remember)
- B.) describe that in asexual reproduction, all the traits come from one parent. (factual, understand)
- C.) describe that in sexual reproduction, the traits come from two parents, and therefore the offspring is never identical to either parent. (conceptual, understand)
- D.) recognize that similarities in parents and offspring are inherited (ex. eye color, flower color), whereas other similarities are learned (ex. table manners). (conceptual, understand)
- E.) recognize that science can only answer some questions and technology can only solve some human problems (ex. genetic engineering, cloning). (Factual, Remember)

**What are the Big Ideas that go with this unit?**

- 1. Reproduction can happen/occur either sexually or asexually, and it's necessary for survival, and the passing of traits. (A, B, and C)
- 2. New combinations of traits may occur in sexual reproduction. (A and C)
- 3. Some characteristics/likenesses are learned, whereas some likenesses are inherited. (D)

**What are the Essential Questions that go with this unit?**

- 1. What are the two types of reproduction, and why is reproduction necessary for survival of the species? (A, B, and C)
- 2. How do new combinations of traits (or new characteristics) occur during sexual reproduction? (A and C)
- 3. What is the difference between learned and inherited characteristics? (D)

**What strategies will we use in order to make learning targets clearer for all students, before, during and after instruction? How will you communicate the learning indicators to students?**

- Essential question posters
- I can handout for genetics – connects the learning targets to the classroom activities, self-reflection component
- I can statements communicated (smart board, verbally) throughout lessons
- Ask the students to restate the learning target in their own words

## **Part II: Feedback and Assessments (Formative and Summative)**

**How will we provide students with feedback throughout the unit?**

**What formative assessments will we use? (Non-graded assignments that check for understanding and provide feedback to the students) Incorporate the 7 Strategies of Assessment for Learning here.**

- DNA Structure replication and mutations – ABCD cards
- Chapter 3, Section 1 formative assessment – multiple choice questions – ABCD cards

**How will students be involved with keeping track of their own learning progress (note—this is different than tracking points for a grade)?**

- ABCD cards – immediate feedback for the teacher and students
- “I can” handout – students self reflect on their level of understanding for each learning target

**What summative assessments will we use? (Graded, evaluative assessments)**

- Quiz – chapter 3 (Sections 1 and 2) (A, C, and D)
- Quiz – chapter 4 (B, C, D, and E)
- Genetic child activity

**Part III: Instruction and Student Activities**

**What instructional and student activities will we use for this unit? These activities should directly align with the indicators and assessments.**

- Read – Pg. 97-98, Pg. 102-103
- “I can” review
- Chromosomes and genes video
- Brain pop: genetics
- Brain pop: heredity
- Smart Board notes
- Genetic wheel
- Nature vs. Nurture
- Mendilian crosses
- Dominate vs. Rcessive traits
- 2 column notes
- Canter guided reading
- DNA rep. lab
- Bill Nye human chara. And adaptions
- Read pg. 84-85
- Brain pop: probability
- Read pg. 86-89 – Punnett square practice Smart Board