



## BAIP/Brain-targeted Teaching® Learning Module

Academic Content: Science

Learning Unit Title: What Makes Me, Me?

Grade Level(s): 3

Author(s) Tessa Berens, Dan and Claudia Zanes

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### Learning Unit Overview: (Overarching Learning Unit content; Essential questions; Expected student understandings)

The driving question of this unit is “*What traits are best suited for an environment?*” In order to tackle this question, students will first be introduced to the topic of traits in Chapter 1 (both physical and behavioral) and how they can be used to identify offspring of an organism. From there, students explore the variations of traits that exist in various settings and populations. Students will begin to form connections of how their traits will be most similar to their family members because of inheritance. They will utilize Punnett Squares to predict traits in offspring of various species that require them to understand alleles and dominant and recessive traits. Students will learn that different combinations of traits will be best suited for varied environments, which showcases adaptations. They will use real-world examples, like the Peppered Moth and Darwin’s Finches, to help them understand the concepts of natural selection and evolution. They finish this unit by putting together all they have learned to complete the engineering challenge, which requires them to take a population (pink salmon, marine iguana, etc.) and develop a claim about what traits are needed for the population to continue to survive in a changing environment.

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### BT-1: Setting the Emotional Climate for Learning

- Feelings Song
  - “We Will Rock You” Beat
  - “Sun and Rain
  - Seasons Change
  - Now I’m feeling.....(student fills in the blank)”



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This is our opening song called “Sun and Rain.” It's a great way to have some musical fun and help create a positive atmosphere in the classroom. Brain target one refers to setting the emotional climate and something as simple as a chant like this can go a long way towards doing just that.

### BT-2: Creating the Physical Environment for Learning

- Listening Lounge Performance Space
  - Classroom developed norms for the space as both a performer and audience member
- Bulletin Board connecting science and song traits
- Vocabulary List (with rhyming words posted)
  - Examples: Trait- mate, fate, create
    - Inherit- parent, parrot
    - Gene- scene, green
    - Selection- protection, question
    - Survive- jive, alive, thrive
    - Evolution- resolution, revolution
    - Adaptation- conversation, motivation, communication, observation, orientation
- Posted images of our “characters” throughout the classroom
- Have students bring in images of a person who is related to them. While going through the unit, try to have classmates guess who may be related based on the understanding of inherited traits.

### BT-3: Designing the Learning Experience

- We created a concept map that summarized the unit’s big ideas, learning goals, and objectives. We then added in our initial ideas of where arts integrated activities could be infused into the unit to enhance learning.

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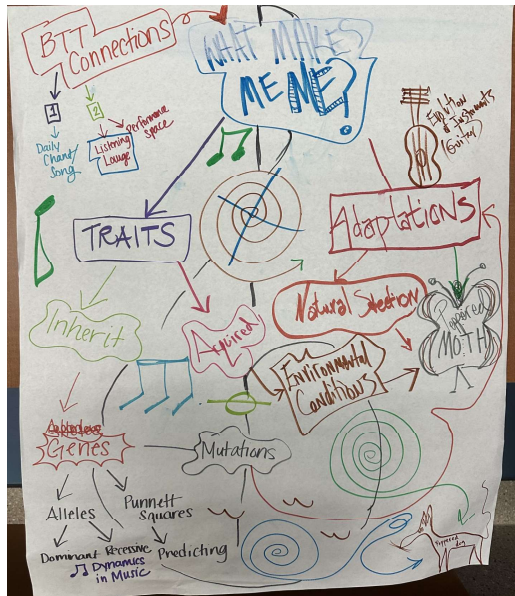
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- Encourage the teacher and/or whole class to create and display their own concept map of the unit in the classroom.



### BT-4: Teaching for Mastery of Skills, Content, and Concepts

List Objectives aligned with strategies

- Present new content and/or reinforce learned content through song
  - Objective: Students will be able to compare the physical and behavioral traits of organisms to musical traits.
  - Objective: Students will be able to compare the variations in human traits to those in songs.
- Promote movement, including dance, tableau, or hand gestures to embed embodied cognition into learning experiences
  - Objective: Students will use movement to mimic the physical and behavioral traits of a selected organism.
- Invite students to demonstrate their learning through song



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- Objective: Students will create and perform a song that summarizes their claim about how inheriting specific traits can help a certain organism survive in a changing environment.
  - Use visual analysis (art as text, photography, paintings, performance, film, video) with students' own or a different culture
    - Objective: Students will determine adaptations their organism has acquired by analyzing photographs and paintings created during different time periods.
  - Encourage visualization strategies
    - Objective: Students will visualize the physical and behavioral traits of their selected organism.
  - “Chunk” learning tasks into segments and revisit earlier learning chunks
    - All activities we have added to the overlay help students build up to their final creation of their song summarizing what traits their organism needs to acquire from their environment to survive.

### BT-5: Teaching for Extension and Application of Knowledge

*List Objectives aligned with strategies*

- Regularly include divergent thinking activities/questions into content presentations-encourage students to think of multiple and novel approaches to responses
  - Objective: Students will work as naturalists to identify what traits an organism needs to inherit from its parents for the organism to survive in a changing environment.
- Include real-world problem-solving including investigations, experiments, comparisons, classifications, analysis.
  - Objective: Students will work as naturalists to identify what traits an organism needs to inherit from its parents for the organism to survive in a changing environment.



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- Use metaphors and analogies
    - Objective: Students will be able to compare the physical and behavioral traits of organisms to musical traits.
    - Objective: Students will be able to compare the variations in human traits to those in songs.
  - Include inductive thinking-drawing general conclusions from specific, and deductive thinking – predictions based on generalizations
    - Objective: Students will work as naturalists to identify what traits an organism needs to inherit from its parents for the organism to survive in a changing environment.
  - Encourage student to reenact key ideas through song writing
    - Objective: Students will create and perform a song that summarizes their claim about how inheriting specific traits can help a certain organism survive in a changing environment.
  - Allow time in the schedule for reflection of learned content (tools for reflection could be drawing, concept mapping, or quiet mindfulness moments)
    - Objective: Students will create a concept map that summarizes the major learned content of the unit.

### BT-6: Evaluation of (and for) Learning

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- Provide immediate, frequent, relevant feedback and include feedback that requires students to extend thinking in open-ended divergent thinking activities.



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- Teacher should check in with each group during each chapter of the unit about their progress toward developing their claim and song for the final performance/engineering design challenge.
  - Use authentic performance assessment using rubrics, scoring keys, and other scoring tools
    - The student performance for the engineering design challenge includes a rubric to help students and teachers know exactly what should be included in the song.
  - Provide time for self-reflection and revision
    - Student groups will check in with another group prior to the final performance and receive feedback. This feedback will be utilized to allow groups to revise and edit before their final performance.
  - Employ the arts as a record of achievement
    - Student song performances will be used as an assessment for the unit.