

BRAIN-COMPATIBLE SCIENCE LESSON PLAN

Taters

Teacher: *Warren Phillips, Science 5–12*

Lesson Objective(s): *What will you be teaching?*

Genetics: how traits are passed on. Phenotypes and genotypes. Hybrids and purebreds.

Assessment (Traditional/Authentic): *How will you know students have learned the content?*

Students will create and mate Taters using assigned traits. They will pass on these traits to offspring called Tiny Taters. They will produce a family tree showing the heredity of their Taters.

Ways to Gain/Maintain Attention (Primacy): *How will you gain and maintain students' attention? Consider need, novelty, meaning, or emotion.*

Students will need to learn the properties of phenotype and genotype as they create their Taters. The novelty of producing a family and giving them names will add excitement to the lesson. As they create a family tree, they will find meaning in their project. They will eventually become emotionally attached to their family as they realize the implications of genetic diseases and traits.

Content Chunks: *How will you divide and teach the content to engage students' brains?*

(This lesson will probably take two class periods.)

Lesson Segment 1: Creating the Taters

Activities

- 1. Students will be provided with various choices of traits for their Taters. Using the Tater Template found at the end of the lesson plans, they will then create their Taters and make them appealing for future mating. This is a kinesthetic hands-on experience.*

2. *Music is played, as students travel about the classroom finding a phenotype that seems appealing. They will not be aware of the genotype of their mate until after they have mated. Students should brainstorm and visualize what their family will look like.*

Lesson Segment 2: Mating Taters

Activities

1. *By flipping coins, traits are decided for the Tiny Taters using the mating guide found at the end of this lesson. Heads picks the first letter of the genotype. Tails picks the second letter. Each Tater provides one trait that will combine with the other Tater's traits. Tiny Taters' phenotypes are created based upon genotypes.*
2. *The two partners create a family tree. Genetic diseases are decoded and assigned to the Tiny Taters. Students create a story about their family.*

Brain-Compatible Strategies: *Which will you use to deliver content?*

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| <input checked="" type="checkbox"/> Brainstorming and discussion | <input checked="" type="checkbox"/> Project-based and problem-based instruction |
| <input checked="" type="checkbox"/> Drawing and artwork | <input checked="" type="checkbox"/> Reciprocal teaching and cooperative learning |
| <input type="checkbox"/> Field trips | <input checked="" type="checkbox"/> Role plays, drama, pantomimes, and charades |
| <input checked="" type="checkbox"/> Games | <input checked="" type="checkbox"/> Storytelling |
| <input checked="" type="checkbox"/> Graphic organizers, semantic maps, and word webs | <input type="checkbox"/> Technology |
| <input checked="" type="checkbox"/> Humor | <input type="checkbox"/> Visualization and guided imagery |
| <input checked="" type="checkbox"/> Manipulatives, experiments, labs, and models | <input checked="" type="checkbox"/> Visuals |
| <input checked="" type="checkbox"/> Metaphors, analogies, and similes | <input type="checkbox"/> Work study and apprenticeships |
| <input checked="" type="checkbox"/> Mnemonic devices | <input checked="" type="checkbox"/> Writing and journals |
| <input checked="" type="checkbox"/> Movement | |
| <input type="checkbox"/> Music, rhythm, rhyme, and rap | |