

Name
TA

Science 10
2022-2023



Learning Guide # 14: Genetics

BIG IDEA: Punnet Squares and Patterns of Inheritance

Fundamental Knowledge (I know)

- How to correctly create Punnet Squares to determine the phenotypic and genotypic ratios.
- The different patterns of Inheritance and can explain each (Complete Dominance, Incomplete Dominance, Co-Dominance, Sex Linked)

Curricular Competencies (I can)

	Proficiency Scale Teacher and Student self-assessment (Circle one)	Evidence (How do you know?)
I can: Consider the changes in knowledge over time as tools and technologies have developed.	Emerging (EMG) Initial Understanding Developing (DEV) Partial/Near Complete Understanding Proficient (PRF) Complete Understanding Extending (EXT) Sophisticated Understanding	
Consider the role of scientists in innovation.	Emerging (EMG) Initial Understanding Developing (DEV) Partial/Near Complete Understanding Proficient (PRF) Complete Understanding Extending (EXT) Sophisticated Understanding	

Student Signature:

Teacher Signature:

Date:

Instructions To help guide your learning, make your way through the activities in Option 1, Option 2, or Option 3. You may “mix and match” between the different Option columns.

TOPIC	OPTION 1 (Worksheet)	OPTION 2 (Textbook)	OPTION 3
Mendelian Genetics	<p>Find appropriate resources to define the following genetics terms: traits, Punnett squares, dominant and recessive traits, alleles, genotype, phenotype, heterozygous and homozygous.</p> <p>Complete “An Introduction to Punnett Squares” worksheet.</p>	<p>Find appropriate resources to define the following genetics terms: traits, Punnett squares, dominant and recessive traits, alleles, genotype, phenotype, heterozygous and homozygous.</p> <p>Complete “An Introduction to Punnett Squares” worksheet.</p>	<p>Choose your own adventure!</p> <p>Pick up a planning sheet from the Science Kiosk.</p> <p>Create a plan! Make sure you read through the first page of this LG, as you will need to design ways to learn/practice and show your understanding of the topic(s) and skill(s) (competencies.)</p> <p>You will need to have a teacher approve your plan before beginning the LG.</p>
Non-Mendelian Genetics	<p>Complete the “Non-Mendelian Genetics Worksheet” and present it to your teacher when completed. You need to know about</p> <p>Video: incomplete dominance, co-dominance</p> <p>Text: Sex linked traits</p> <p>Text: Incomplete dominance, co-dominance, and multiple alleles.</p>	<p>Read about Non-Mendelian Genetics and create a presentation (digital or paper) to demonstrate your understanding to your teacher. You need to know about</p> <p>Video: incomplete dominance, co-dominance</p> <p>Text: Sex linked traits</p> <p>Text: Incomplete dominance, co-dominance, and multiple alleles.</p>	
Pattern of Inheritance: Pedigrees	<p>Watch the following video or find appropriate resources and learn about pedigree charts (models).</p> <p>Define pedigree chart. Explain the importance AND application of pedigree charts (you can connect the importance to current trends in DNA Ancestry/Genealogy like 23andMe).</p>		
Lab	No lab.		
Self-Assessment	Reflect on the Fundamental Knowledge and Curricular Competencies. Use the rubric and make goals to improve for your next learning guide.		
Interview or Quiz	See you teacher for an interview or to have a quiz slip signed for the test center. Bring your work and staple it to your quiz when complete.		

Resources can be found at www.THSSscience.com or the Science Kiosk

User: **THSS**

Password: **science**