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**Grades
6-12**



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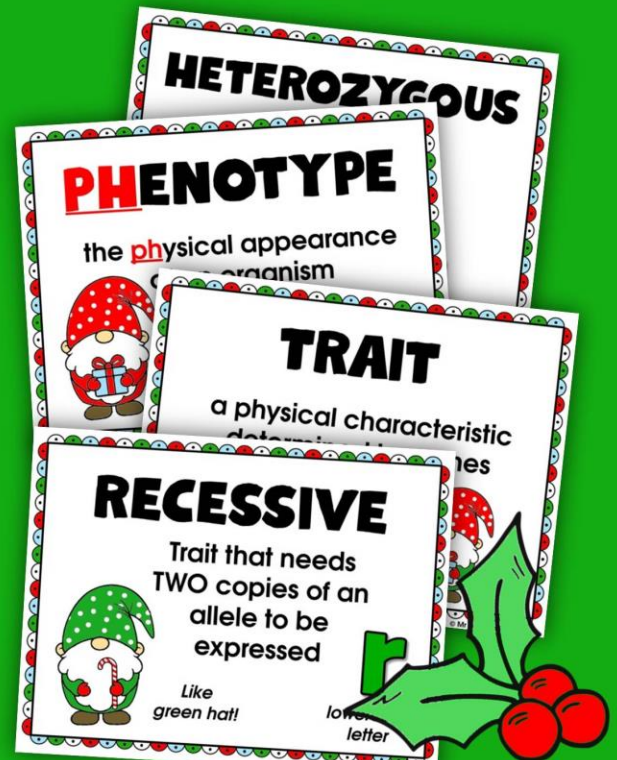
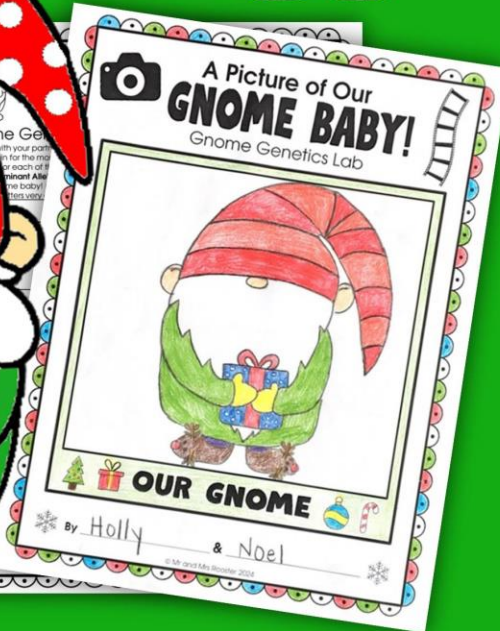
GENETICS ACTIVITY

Let's Make a Baby Gnome!

Teacher Lesson Plan
Student Lab Handouts
Intro to Genetics



Punnett Square Practice
Answer Keys & Sample
10 Vocab Posters



GNOME GENETICS: Introduction



Gnome Genetics is perfect for teaching genetics near **Christmas** or any time during **winter**!

This is a **2-3 Day** partner activity where students learn introductory genetics vocabulary and apply it to theoretical Gnome Genetics!

This is an interactive lesson where biology meets mythology in the village of Holiday Hollow! Students will dive into the world of genetics, learning about **dominant and recessive traits** through a fun, hands-on activity. By flipping the Genetic Spinner Coin, students will predict the **traits of gnome babies**, and create a unique gnome **drawing** for the Great Gnome Gathering! You can hang their finished gnomes proudly in your classroom for fun Christmas/Winter décor! Students then apply their knowledge of genetics to solve genetics problems using **Punnett Squares** for the village elders!



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WHAT'S INCLUDED?

**EVERYTHING IN THIS PROJECT IS IN
PDF FORMAT AND IS
READY TO PRINT/POST & USE!**

This project includes:

- Detailed 2-3 day lesson plan with aligned NGSS
- Gnome Background Story – Provides a story about the gnomes & a mission for the students!
- Student Activity Handouts – Data table, drawing page, drawing reference page
- Introduction to Genetics Vocab Handout
- 10 Genetics Vocabulary Posters
- 6 Genetics Punnett Square Practice Problems
- Answer Keys
- 2 Student Examples

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Let's Make a Baby **GNOME!**

Gnome Genetics Lab



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+10 Vocabulary Posters!



PROJECT HANDOUTS

Data Table & Drawing Reference Sheet

Students flip a coin to get parent alleles and then use the alleles to determine genotype and phenotype. If physical coins are not available, a website for a coin flip simulator is provided in the lesson plan.

Let's Make a Baby GNOME!
Gnome Genetics Lab

Together with your partner, you will create a baby gnome. Gnomes who will flip the Genetic Spinner Coin for the mom and who will flip for the dad. Each parent contributes one allele to the baby. For each of the 10 traits listed below, you will flip your coin one time. Heads = Dominant Allele, Tails = Recessive Allele. Fill out the chart below to determine the traits for your gnome baby! Use the dotted letter of the dominant allele to indicate the capital and lowercase letters very clearly. Write the appropriate allele name and symbol.

TRAIT	MOM	DAD	GENOTYPE	PHENOTYPE
Hat Color				
Hat Shape				
Hat Design				
Nose Size				
Beard Length				
Beard Style				
Jackal Color				
Hand Type				
Hand Accessory				
Shoe Type				

Let's Make a Baby GNOME!
Gnomes - Drawing Reference Sheet

TRAIT	DOMINANT	RECESSIVE
Hat Color	Red	Green
Hat Shape	Flared	Pointed
Hat Design	Polka Dots	Striped
Nose Size	Big	Small
Beard Length	Long	Short
Beard Style	Full	Neat
Jackal Color	Green	Red
Hand Type	Minions	Gloves
Hand Accessory	Candy Cane	Present
Shoe Type	Boots	Slippers

Example Gnome
Make sure your drawing clearly shows each of the 10 traits. Colors and styles are your choice unless it's one of the determined traits.
Have fun and be creative with your gnome!

A drawing reference sheet is available, in case students need a visual!



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2 STUDENT EXAMPLES

Data Tables with Drawings

 **A Picture of Our GNOME BABY!** 
Gnome Genetics Lab



  **OUR GNOME**  

By Holly & Noel

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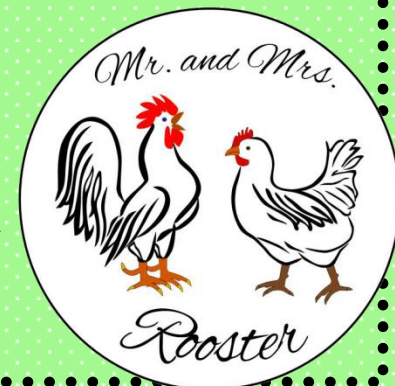
Let's Make a Baby GNOME!  
Gnome Genetics Data Table – **STUDENT EXAMPLE**

Together with your partner, you will create a gnome baby! Determine who will be the Genetic Spinner Coin for the mom and who will be the Genetic Spinner Coin for the dad. For each of the traits, you will flip the coin and record the results. Heads = Dominant Allele, Tails = Recessive Allele. Fill out the table to determine the traits for your gnome baby. Use the Punnett square to determine the genotype and phenotype of the baby.

TRAIT	Mr. Dad	Genotype	Mrs. Mom	Phenotype
Color	R	r	Rr	red hat
Hat Shape	F	f	Ff	fluffy hat
Hat Design	P	p	Pp	pointed hat
Nose Style	S	s	Ss	red nose
Beard Length	L	l	Ll	long beard
Beard Style	T	t	Tt	single beard
Jacket Color	G	g	Gg	green jacket
Hand Type	M	m	Mm	mittens
Hand Accessory	C	c	Cc	gloves
Shoe Type	b	b	bb	slippers

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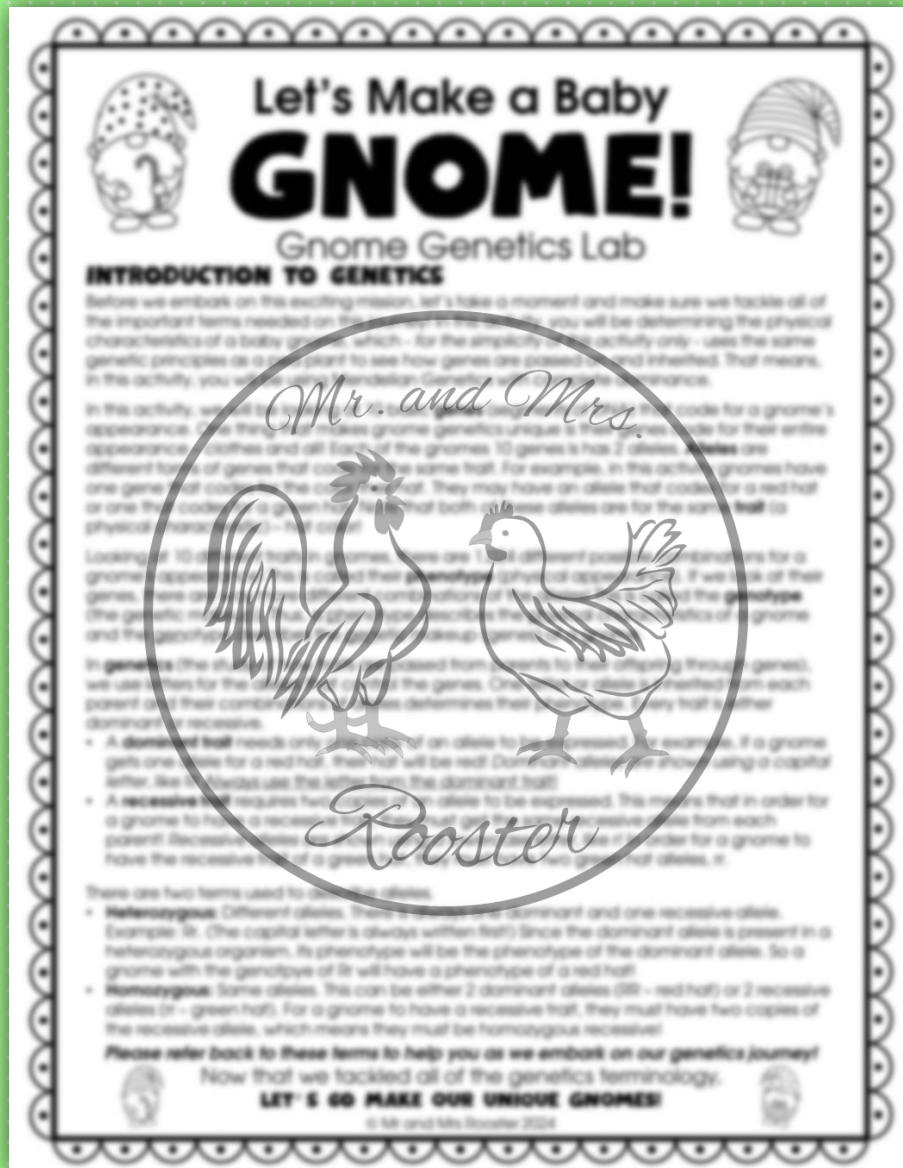


2 STUDENT EXAMPLES

Gnomes will show genetic diversity & make fun Christmas classroom décor!



INTRODUCTION TO GENETICS VOCABULARY RESOURCES

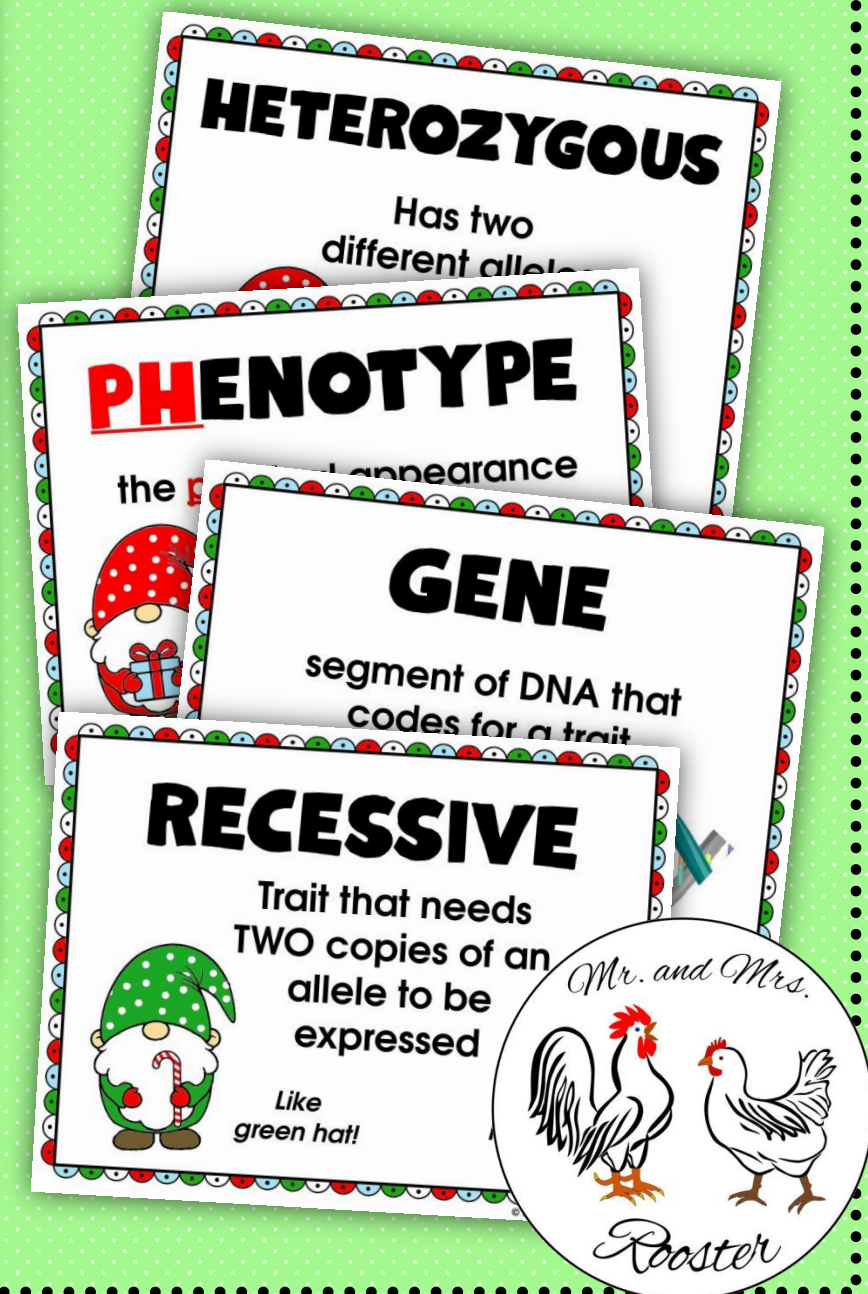


STUDENT HANDOUT

Has all background vocabulary. All important terms are bolded, defined, and explained in the context of this gnome activity!

10 VOCAB POSTERS

All gnome-themed to hang in your classroom as reference tools!



MONSTER GENETICS PRACTICE PROBLEMS

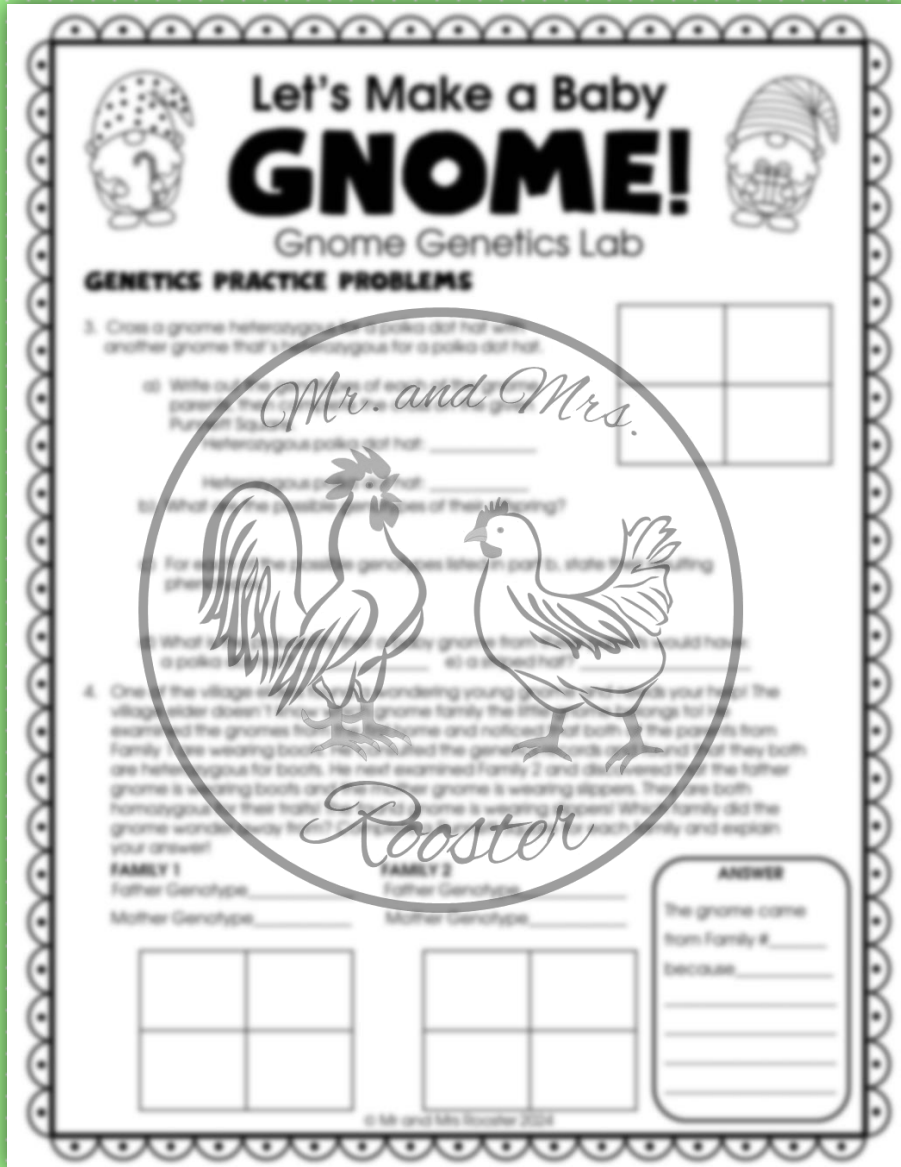
6 PUNNETT SQUARE PROBLEMS

3-PAGES

6 problems total!

All related to the
gnome activity for
application!

Students complete
straight-forward
crosses then critical
thinking problems.



ANSWER KEY INCLUDED!

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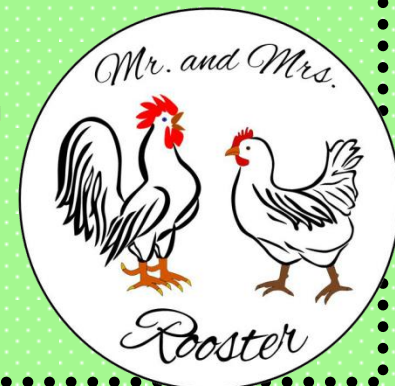
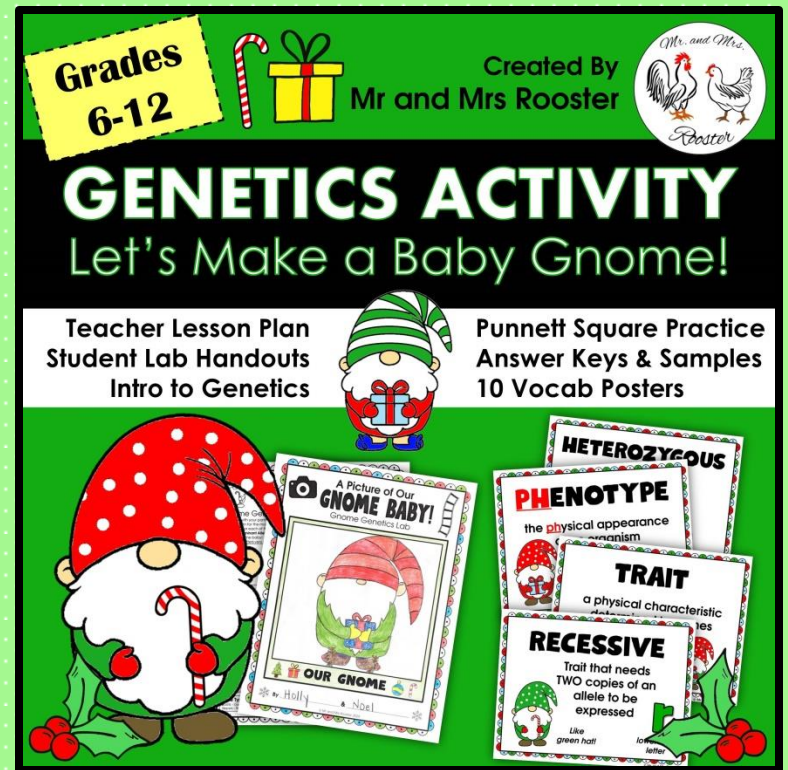
THANK YOU!

Thank you for your interest
in our resource!

Please read the product
description as well before
purchasing. If you have any
questions, you may email us at
mrandsroostertpt@gmail.com.

HAPPY TEACHING!

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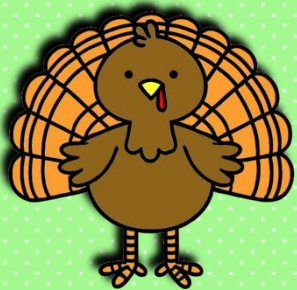


ARE YOU TEACHING GENETICS IN THE FALL?



You will enjoy our
Monsters Genetics,
perfect for Halloween!

AND



Turkey Genetics,
perfect for
Thanksgiving!

HAPPY TEACHING!

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