



## Grade 7 Lesson Plan

### Unit 3– Monster Mash

#### SOLs

- 7.1 H

#### Objectives/Goals

- Students will collect and interpret genetic data to create a unique monster depicting dominant and recessive traits.
- Students will flip a penny, record data and draw their unique genetic monster

#### Materials

- 1 Monster Genetics Lab Worksheet (attached)
- 2 Monster Genetics Assessment Rubric (Attached)
- 1 penny for each student
- Legal paper 8 ½ x 14
- Colored pencils, Crayons, Markers

#### Procedure

##### *Step 1*

- Discuss the three body types: Ectomorph, Endomorph and Mesomorph

##### *Step 2*

- Introduce different patterns of inheritance due to dominant and recessive traits that are received from the students' biological parents.

##### *Step 3*

- Assign Monster Mash where the students will investigate how a combination of these genes work together to create a unique organism
- Flip the penny twice for each genetic trait. The first flip will be for the Mom's trait. If it is heads, mark the trait as dominant. If the flip is tails, mark the trait as recessive. Repeat the process for the father.
- Once all traits are determined to be dominant or recessive, the student will draw their unique monster using the criteria on the genetic checklist.

##### *Step 4*

- Explain in 4 or 5 sentences what makes your monster unique or special and why it should win the Monster Beauty Contest.

*Step 5*

- Using the Monster Genetics Assessment Rubric, students will self-assess their project.

**Assessment Idea**

- Students will create unique genetic monsters based on dominant and recessive traits

**References**

- Melanie Lynch, 2016 SHAPE America National Health Teacher of the Year
- Stacy Adams, Shaler Elementary
- <https://kidshealth.org/en/kids/what-is-gene.html?ref=search>
- <http://www.brainpop.com/>

**Handout**

The next page includes a handout for the lesson. The handout is designed for print use only.

# genetic MONSTER LAB

## INTRODUCTION

You have learned about different patterns of inheritance because of the dominant and recessive traits you get from your biological mom and dad. In this activity you will investigate how a combination of these genes work together to create a unique organism.

## Part 1 CHART

1. You will need one 'pink' penny (mom) and one 'blue' penny (dad).
2. Flip both coins for each genetic trait. You will flip the blue AND pink penny for no. 1 and then the blue and pink penny for no. 2 and so on...
3. Check the appropriate column after the coin flips.
4. Circle the Dominant or recessive 'Monster Trait' you determined. Remember a recessive trait is only present if BOTH mom and dad pass them on (see the example below).

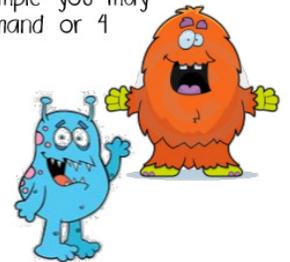
EXAMPLE Shows ALL the possibilities.		Dominant	recessive	Dominant	recessive	Monster Trait	
		Mom Heads	Mom tails	Dad Heads	Dad tails	D=Dominant	r=recessive
EX:	Eye Color	✓		✓		D=Blue, Green, Purple r=Yellow, Orange, Red	
		✓			✓	D=Blue, Green, Purple r=Yellow, Orange, Red	
		---	✓	---	---	D=Blue, Green, Purple r=Yellow, Orange, Red	
		---	✓	✓	---	D=Blue, Green, Purple r=Yellow, Orange, Red	

## Part 2 DRAWING

1. Draw your monster on a piece of white paper, making it large. It should take up most of the paper, but remember to leave a little room for your sentences required in Part 3.
2. Make sure you complete your monster with all of the appropriate colors, parts, and numbers from the chart.
3. If you would like, you can add small details like a bowtie or earrings. Just make sure these details don't hide the required traits from the chart.
4. If the chart does not list characteristics YOU make the genetic decision. For example you may have circled 5-10 fingers for no. 16. Your monster could have 10 fingers on one hand and 4 fingers on his right hand and 2 on his left, etc.

## Part 3 WRITING

1. Place your name and class section on the back of your monster drawing.
2. Give your monster a name and place it at the top of your drawing.
3. Count the number of dominant and recessive traits. Write the totals on your drawing.
4. Explain in 5-6 complete sentences what makes your monster unique or special. Maybe it has some characteristics that are better than others (like warmth from fur or super vision with its large eyes, etc.). Write neatly with proper grammar and spelling.
5. Complete the *Monster Genetics Assessment Rubric*



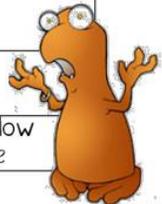
# YOUR MONSTER



MOM

DAD

	MOM		DAD		Monster Trait D=Dominant r=recessive
	Dominant MH	recessive mt	Dominant DH	recessive dt	
1. Gender					D= Boy r= Girl
2. Body Shape					D= Large/Round r= Small/Skinny
3. No. of Eyes					D= 2 r = 1
4. Eye Size					D= Large r= Small
5. Eye Color					D= Blue, Green, Purple r= Red, Yellow, Orange
6. Skin Color					D= Blue, Green, Purple r= Red, Yellow, Orange
7. Skin Texture					D= Hairy/Furry r = Smooth
8. Skin Design					D= Solid Color r= Polka Dots or Stripes
9. Tail Shape					D=Curly, Wavy r= Straight, Pointy, Zig Zag
10. Tail Length					D= Short r= Long
11. Tail Color					D= Purple, Pink, Red r= Blue, Green, Black
12. Teeth					D=Sharp r= Round
13. No. of Teeth					D= 6 r= 3
14. Arms					D= 2-4 r= 0-1
15. Hands					D= 2-4 r= 0-1
16. Fingers					D= 5-10 r= 2-4
17. Claw Length					D= Long r= Short
18. No. of Claws					D= 5-10 r= 2-4
19. Legs					D= 2-4 r= 0-1
20. Feet					D= 2-4 r= 0-1
21. Ear Size					D= Large r= Small
22. Ear Shape					D= Round r= Pointy or Square
23. No. of Horns					D= 2 r= 1
24. Horn Shape					D= Pointy/Jagged r= Round/Curly
25. Horn Color					D= Orange, Green, Yellow r= Red, Pink, Purple

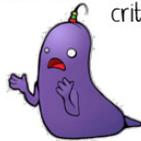


ARE YOU FINISHED? Turn in your completed: Monster Genetics Lab Worksheet \* Drawn Monster  
\* Monster Genetics Rubric

genetic  ASSESSMENT RUBRIC

STUDENT NAME: \_\_\_\_\_ CLASS SECTION: \_\_\_\_\_

DIRECTIONS: After completion of your genetic monster, RATE YOURSELF by circling the number in each row next to the criteria.



Excellent 10-9	Good 8-7	Average 6-5	Needs Improvement 4-3	Did not complete 2-1	Teacher Rating
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Part 1: CHART

Correctly recorded and completed data in chart	10	9	8	7	6	5	4	3	2	1	
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Part 2: DRAWING

Monster is complete with <u>all</u> components from your chart	10	9	8	7	6	5	4	3	2	1	
Used creativity in design elements; did not copy others' work	10	9	8	7	6	5	4	3	2	1	
Craftmanship – work is neat, large, detailed, and colorful	10	9	8	7	6	5	4	3	2	1	

Part 3: WRITING

Monster is named and the number of dominant/recessive traits are listed	10	9	8	7	6	5	4	3	2	1	
Explanation of monster expresses an opinion of unique characteristics	10	9	8	7	6	5	4	3	2	1	
Sentences use accurate vocabulary and grammar. Spelling is correct.	10	9	8	7	6	5	4	3	2	1	

Student Total: \_\_\_\_\_

Teacher Total: \_\_\_\_\_