

## Monster Genetics

Shared by: Edgerton Center K-12 Maker Team

| Specialized tools and materials used:                                                                       | Experience level required: |
|-------------------------------------------------------------------------------------------------------------|----------------------------|
| Craft materials (work paper, sewing equipment, felt, buttons, construction paper, cardboard, markers, etc.) | Beginner                   |

**Grade Level and Subject** (of this example): 8th Grade Science

**Topic/Content Standards** (for this example): Biology - Heredity [[8.MS-LS3-4](#)]



### Summary of Project:

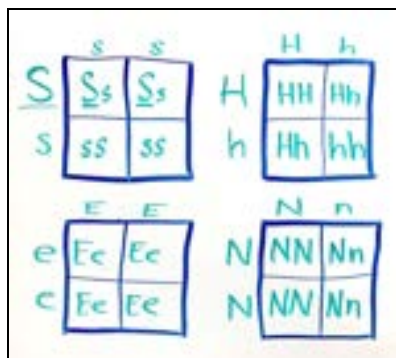
In this Monster Genetics project, students demonstrate their understanding of inherited traits, engage in creative design, and strengthen their crafting skills. Through the use of Punnett squares, students determine which alleles each monster will inherit from their monster parents, and then create model monsters using craft materials.

Begin by creating a list of paired traits (alleles) for the monsters, and generating monster parents with a set of traits. Then, students use Punnett Squares and coin flips to determine the characteristics of their child monsters. Once each characteristic has been determined, students construct their monsters from craft materials like felt, buttons, sewing equipment, hot glue, etc.

Each student should complete their own Punnett Squares and model monster, working groups or at large tables so that they may assist one another. Depending on the number and complexity of the monster alleles, and students' existing crafting skills, this project should take 1-1.5 hours to complete.

### Monster Genetics: Example Punnett Squares

| Trait              | Dominant     | Recessive  |
|--------------------|--------------|------------|
| Skin Color (S)     | Purple (S)   | Red (s)    |
| Eye Color (E)      | Green (E)    | Blue (e)   |
| No horn / horn (H) | No horn (H)  | Horn (h)   |
| Nose Shape (N)     | Triangle (N) | Circle (n) |



#### Skin Color

Monster Ma = Ss (red)  
Monster Pa = ss (purple)

|   |    |    |
|---|----|----|
|   | s  | s  |
| S | Ss | Ss |
| s | ss | ss |

#### No horn/horn

Monster Ma = Hh (no horn)  
Monster Pa = Hh (no horn)

|   |    |    |
|---|----|----|
|   | H  | h  |
| H | HH | Hh |
| h | Hh | hh |

#### Eye Color

Monster Ma = ee (blue)  
Monster Pa = EE (green)

|   |    |    |
|---|----|----|
|   | E  | E  |
| e | Ee | Ee |
| e | Ee | Ee |

#### Nose Shape

Monster Ma = NN (triangle)  
Monster Pa = Nn (triangle)

|   |    |    |
|---|----|----|
|   | N  | n  |
| N | NN | Nn |
| N | NN | Nn |

**Monster Child** determined by random selection from available genotypes:

|                       | Genotype | Phenotype     |
|-----------------------|----------|---------------|
| <b>Skin Color</b>     | ss       | Red skin      |
| <b>Eye Color</b>      | Ee       | Green eyes    |
| <b>No horn / horn</b> | hh       | Horn          |
| <b>Nose Shape</b>     | NN       | Triangle nose |



### Suggested resources

- Punnett Square [resource](#)
- [Tips](#) for sewing with felt

### Possible Content explorations

- **ELA:** Create models of Grendel's possible siblings based on traits described in *Beowulf*. Create a hybrid of two monsters included in *The Odyssey*. Model a hunting dog based on *Where the Red Fern Grows*.
- **Social Studies / Foreign Language:** Explore cultural myths and legends, then add to the lore by creating a unique hybrid monster from two existing tales.