Name _____ Date _____ Class _____

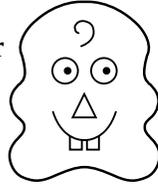**Genetics: The Science of Heredity** • *Chapter Project*   **Worksheet 1**

Making a Paper Pet

Follow the instructions to create your own paper pet with five different traits.

Materials

blue or yellow construction paper

scissors

glue

markers

materials to decorate your pet, such as
   glitter, sequins, buttons, yarn, and beads

Possible Traits		
Color	blue	yellow
Gender	female (curl)	male (no curl)
Eyes	square	round
Nose	triangular	oval
Teeth	square	pointed

Procedure

1. Cut out the outline of the paper pet below. Trace the paper pet design onto either blue or yellow construction paper and cut it out.

2. On the front of your paper pet, draw the other four traits you have chosen for it. The table above lists the possible choices and shows how they should be drawn.

3. On the back of your paper pet, copy the chart shown on the right, below. Then write your pet's traits in the phenotype column. Give your pet a name, and write the name at the top of the chart.

4. Fill in your pet's genotypes. Use XX for a female and XY for a male. The dominant alleles for the other four traits are: *B* (blue skin), *R* (round eyes), *T* (triangular nose), and *P* (pointed teeth).

5. Decorate your paper pet with materials of your choice.

Pet's Name

_____

Phenotype   Genotype

Color _____   _____

Gender _____   _____

Eyes _____   _____

Nose _____   _____

Teeth _____   _____

Name _____ Date _____ Class _____

Genetics: The Science of Heredity ▪ *Chapter Project*   **Worksheet 2**

Making Paper Pet Offspring

Follow the instructions to make the offspring of your paper pet.

Materials

scissors
blue and yellow construction paper
glue
markers
coin

Procedure

1. Cut out the outline below of the paper pet offspring. Toss the coin to determine which alleles the first offspring will inherit for color from each parent. For example, "heads" could represent *B,* the allele for blue skin, and "tails" could represent *b,* the allele for yellow skin. Remember, blue is controlled by a dominant allele. Trace the outline of the offspring onto the appropriate color construction paper and cut it out.

2. On the back of the offspring, copy the chart for the phenotype and genotype of each trait. Write in the genotype and phenotype for color.

3. Toss the coin and record the results to determine the genotypes for the other four traits. Record the genotypes and phenotypes in the appropriate column. Remember, the traits controlled by dominant alleles are round eyes, triangular nose, and pointed teeth. A male has an X and a Y. A female has two Xs. Name each paper pet offspring, and write its name on the back.

4. On the front of the offspring, draw its traits according to the genotypes determined by the coin toss.

5. Repeat this procedure five times so that all together you have six offspring.

Pet's Name

_____

	Phenotype	*Genotype*
Color	_____	_____
Gender	_____	_____
Eyes	_____	_____
Nose	_____	_____
Teeth	_____	_____

Genetics: The Science of Heredity

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Genetics: The Science of Heredity ▪ *Chapter Project* **Scoring Rubric**

All in the Family

In evaluating how well you complete the Chapter Project, your teacher will judge your work in three categories. In each, a score of 4 is the best rating.

	4	3	2	1
Creating the Parent Paper Pet	The phenotypes and genotypes of all five traits are identified and drawn neatly and correctly on the parent paper pet.	All but one of the phenotypes and genotypes are identified and drawn neatly and correctly on the parent paper pet.	Some phenotypes and genotypes are correct, but two or more are identified and drawn incorrectly on the parent paper pet.	The phenotypes and genotypes are not completed, and/or few or none are correctly identified and drawn on the parent paper pet.
Determining the Traits of the Offspring	The phenotypes for all five traits are correctly identified for all six offspring based on the results of the coin tosses to determine genotype.	Most phenotypes are correctly identified for the offspring based on the results of the coin tosses to determine genotype.	Several phenotypes are incorrectly identified for the offspring based on the results of the coin tosses to determine genotype.	Phenotypes are incomplete, or few or none are correctly identified.
Presenting the Pet Family	Student makes a thorough, interesting presentation that shows a complete understanding of the patterns of inheritance for each trait in the pet family.	Student makes a thorough presentation that shows an adequate understanding of the patterns of inheritance for each trait in the pet family.	Student makes a presentation that shows an incomplete understanding of inheritance patterns in the pet family.	Student makes a presentation that shows a lack of understanding of inheritance patterns in the pet family.