

Name \_\_\_\_\_

# Paper Pet Parents

## Making a paper pet parent

Follow the directions below to create a paper pet parent with five inheritable traits.

The following traits are possible:

Paper pet inheritable traits		
<b>Color</b>	Blue	Yellow
<b>Gender</b>	Male	Female
<b>Eyes</b>	Round	Square
<b>Nose</b>	Triangular	Oval
<b>Teeth</b>	Square	Pointy

## Materials

- rectangle of blue or yellow paper, about 11 × 14 centimeters
- scissors
- glue
- markers or colored pencils
- materials to decorate the paper pet (buttons, feathers, sequins, fabric, other colored paper, and so on)

## Directions

1. On the rectangle of blue or yellow paper, trace a paper pet body and cut it out.
2. If the paper pet is male, draw a straight line for hair at the top of the head. If it is female, draw a squiggly line for hair at the top of the head.
3. Give the paper pet square or round eyes, a triangular or oval nose, and square or pointy teeth.
4. Copy the following chart onto the back of the paper pet:

Pet's name		
Trait	Phenotype	Genotype
Color		
Gender		
Eyes		
Nose		
Teeth		

5. In the first column, list the paper pet's phenotype (blue or yellow, male or female, round eyes or square eyes, triangular nose or oval nose, and square teeth or pointy teeth).
6. In the second column, list the paper pet's genotype. Use "BB" for blue, "bb" for yellow, "XY" for male, "XX" for female, "CC" for round eyes, "cc" for square eyes, "TT" for a triangular nose, "tt" for an oval nose, "PP" for pointy teeth, and "pp" for square teeth. (In the parent generation, all of the paper pets are homozygous).
7. You may decorate the rest of the paper pet as you wish, as long as it correctly reflects its phenotype. Be creative!

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# Paper Pet Offspring

## Making a paper pet offspring

Follow the directions to make paper pet offspring.

### Materials

- two paper pet parents (one male and one female)
- coin or double-sided counter
- rectangles of blue and yellow paper, about 7 × 10 centimeters
- scissors
- glue
- markers or colored pencils
- materials to decorate the paper pet (buttons, feathers, sequins, fabric, other colored paper, and so on)

### Directions

1. To determine which color your offspring will be, determine which allele will be represented by each side of your coin or double-sided marker. For example, heads could be B, and tails could be b. If your parent paper pet is homozygous for a trait (for example, BB or bb), then they will simply pass on one of the alleles to their offspring. However, if your parent paper pet is heterozygous for a trait (for example, Bb), then your coin toss will determine which allele is passed down. Remember that B is dominant and b is recessive.
2. Cut out a paper pet shape from the appropriate color and copy the following chart onto the back:

Pet's name		
Trait	Phenotype	Genotype
Color		
Gender		
Eyes		
Nose		
Teeth		

3. Write in the phenotype and genotype for color.
4. Determine the gender of the offspring by flipping the coin to find out which chromosome (X or Y) is passed on by the male parent. The female parent passes on an X. Fill in the gender phenotype and genotype on the chart.
5. Use the coin or double-sided marker to determine the alleles inherited by the offspring for the other three traits. Remember that round eyes (C), triangular nose (T), and pointy teeth (P) are dominant forms of the traits. Fill in the phenotype and genotype for each trait on the chart.
6. Decorate the front of the paper pet offspring to reflect the inherited traits. You may add other features and decorations. Be creative!
7. Use the same procedure to determine the traits of all offspring. Remember that each offspring is the result of a separate process of inheritance.