

GENETIC GAMBLERS WORKSHEET

Team name:	
Parent A:	
Parent B:	

For each trait, Parent A and Parent B will each roll the 6-sided die once to determine their genotype.

1. **COAT PATTERN:** *Will your pig have polka dots or stripes?*
 - a. Roll a 1 or 2, the parent genotype is homozygous dominant (DD)
 - b. Roll a 3 or 4, the parent genotype is heterozygous (Dd)
 - c. Roll a 5 or 6, the parent genotype is homozygous recessive (dd)

Punnett square for COAT PATTERN		
• Dominant (D): polka dots • Recessive (d): stripes		
PARENT A ↓	PARENT B ↓	
	1	2
	3	4

Genotype ratio: _____

Phenotype ratio: _____

2. **HORN SHAPE:** *Will your pig have curly or straight horns?*

- Roll a 1 or 2, the parent genotype is homozygous dominant (HH)
- Roll a 3 or 4, the parent genotype is heterozygous (Hh)
- Roll a 5 or 6, the parent genotype is homozygous recessive (hh)

Punnett square for HORN SHAPE		
- Dominant (H): curly horns - Recessive (h): straight horns		
PARENT A ↓	PARENT B ↓	
	1	2
	3	4

Genotype ratio: _____

Phenotype ratio: _____

3. **NOSE SHAPE:** *Will your pig have a pointy or rounded nose?*

- Roll a 1 or 2, the parent genotype is homozygous dominant (NN)
- Roll a 3 or 4, the parent genotype is heterozygous (Nn)
- Roll a 5 or 6, the parent genotype is homozygous recessive (nn)

Punnett square for NOSE SHAPE		
- Dominant (N): pointy nose - Recessive (n): rounded nose		
PARENT A ↓	PARENT B ↓	
	1	2
	3	4

Genotype ratio: _____

Phenotype ratio: _____

4. **NUMBER OF LEGS:** *Will your pig have 4 or 6 legs?*

- Roll a 1 or 2, the parent genotype is homozygous dominant (TT)
- Roll a 3 or 4, the parent genotype is heterozygous (Tt)
- Roll a 5 or 6, the parent genotype is homozygous recessive (tt)

Punnett square for NUMBER OF LEGS		
• Dominant (T): 4 legs • Recessive (t): 6 legs		
PARENT A ↓	PARENT B ↓	
	1	2
	3	4

Genotype ratio: _____

Phenotype ratio: _____

5. **EAR SHAPE:** *Will your pig have pointy or floppy ears?*

- Roll a 1 or 2, the parent genotype is homozygous dominant (EE)
- Roll a 3 or 4, the parent genotype is heterozygous (Ee)
- Roll a 5 or 6, the parent genotype is homozygous recessive (ee)

Punnett square for EAR SHAPE		
• Dominant (E): pointy ears • Recessive (e): floppy ears		
PARENT A ↓	PARENT B ↓	
	1	2
	3	4

Genotype ratio: _____

Phenotype ratio: _____

6. Use the 4-sided die to randomly select one possibility for each trait. A 4-sided die is shaped like a small pyramid. Each number appears near the corners, or **peaks**, of the die. Roll the die and look at the **top peak**. The number printed around that top point is the number you rolled.

Now determine which traits your pig will inherit.

For each completed Punnett square above, roll the 4-sided die once. The number rolled matches one of the four numbered boxes in the Punnett square.

Find that numbered box and highlight it. The genotype in that box is the genotype your pig inherited for that trait.

Then use the dominant and recessive trait key beside the Punnett square to determine the phenotype, or physical trait, your pig will have.

Record both the genotype and phenotype in the table below.

Repeat these steps for all five traits.

TRAIT	GENOTYPE (genetic makeup)	PHENOTYPE (physical appearance)
COAT PATTERN		
HORN SHAPE		
NOSE SHAPE		
NUMBER OF LEGS		
EAR SHAPE		