<table>
<tr><th>Criteria</th><th colspan="5">Ratings</th><th>Pts</th></tr>
<tr><td>Choose 1 of the following
Selects one of the following:
1. A specific trait in your pet or theoretical pet
2. Special populations: Blue People of Troublesome Creek, Queen Victoria, or Ellis-van Creveld syndrome in the Amish
3. A trait that you possess WITH PARENTAL PERMISSION</td><td colspan="3">5 pts
Full Marks
Clearly selects one of the following options. If doing personal trait, has parent fill out permission slip</td><td colspan="2">0 pts
No Marks
Does not select from one of the three options or fails to do project.</td><td>5 pts</td></tr>
<tr><td>Trait/Gene Research
Research the specific trait, gene location, and chromosome gene sequence (either full gene sequence or allele ex. Tt, TT, etc.)</td><td>30 to >29.0 pts
Above Standard
Meets ALL criteria listed below: 1. Selects a complex trait (either codominant, X-linked, or polygenic). 2. Identifies the chromosome, location and name of gene responsible for the trait. (ex. chromosome 15, OCA 2 gene, SNP rs12913832) 3. Finds</td><td>29 to >27.0 pts
Approaching Above Standard
Meets ALL criteria listed below: 1. Selects a complex trait (ex. polygenic, X-linked, codominant) 2. Identifies the chromosome, location</td><td>27 to >24.0 pts
At Standard
Meets ALL criteria listed below: 1. Selects a trait that follows simple dominance/recessive inheritance (ex. widow's peak) 2. Identifies chromosome</td><td>24 to >15.0 pts
Approaching Standard
Missing 1 of the criteria listed in the AT STANDARD category</td><td>15 to >0 pts
Below Standard
Missing 2 or more from the AT STANDARD category OR Does not turn in</td><td>30 pts</td></tr>
</table>

Criteria	Ratings					Pts
	and lists the gene sequence responsible for the trait and what the non-trait sequence is (ex. OCA2 gene sequence: ACTTGACACTTA for blue eyes, ACTTGATACTTA for brown eyes) 4. Correctly identifies the type of mutation responsible for the gene/trait (ex. substitution, deletion, insertion)	and name of gene responsible for trait (ex. Chr. 15, OCA 2 gene) 3. Lists all allele combinations needed for trait to be present and absent (ex. GG for blue eyes, TT or TG for brown)	and gene responsible for trait 3. Lists all allele combinations needed for trait to be present and absent (ex. Ww or WW for widow's peak)		project/ project unrelated to the PBL	
Model Make a Hanging Mobile showing an	**30 to >29.0 pts** **Above Standard**	**29 to >27.0 pts** **Approaching Above Standard**	**27 to >24.0 pts** **At Standard**	**24 to >15.0 pts** **Approaching Standard**	**15 to >0 pts** **Below Standard**	30 pts

Criteria	Ratings					Pts
inheritance pattern - in the following forms: Pedigree or Family Tree	Model CLEARLY Shows and Meets ALL criteria listed below: 1. Selects a complex trait (either codominant, X-linked, or polygenic). 2. Identifies the chromosome, location and name of gene responsible for the trait. (ex. chromosome 15, OCA 2 gene, SNP rs12913832) 3. Tracks trait through AT least 3 generations (ex: students--> grandparents) 4. Shows all possible genetic sequence combinations for selected traits for all generations (ex. brown eyes can be heterozygous brown or homozygous brown) 5. Clearly identifies where the mutation occurs in order to produce said trait (see exemplar listed in assignment/in class)	Model CLEARLY Shows and Meets ALL criteria listed below: 1. Selects a complex trait (ex. polygenic, X-linked, codominant) 2. Identifies the chromosome, location and name of gene responsible for trait (ex. Chr. 15, OCA 2 gene) 3. Tracks trait through at least 3 generations (ex: students-->grandparents) 4. Shows ALL possible allele combinations needed for trait to be present and absent (ex. GG for blue eyes, TT or TG for brown)	Model CLEARLY Shows and Meets ALL criteria listed below: 1. Selects a trait that follows simple dominance/recessive inheritance (ex. widow's peak) 2. Identifies chromosome and gene responsible for trait 3. Tracks trait through at least 3 generations (ex. students-->grandparents) 4. Shows ALL allele combinations needed for trait to be present and absent (ex. Ww or WW for widow's peak)	Missing 1 of the criteria listed in the AT STANDARD category	Missing 2 or more from the AT STANDARD category OR Does not turn in project/ project unrelated to the PBL	

Criteria	Ratings					Pts
Live Presentation Students presents model to class.	**30 to >29.0 pts** **Above Standard** Student CLEARLY covers and EXPLAINS ALL criteria listed below: 1. Selects a complex trait (either codominant, X-linked, or polygenic). 2. Identifies the chromosome, location and name of gene responsible for the trait. (ex. chromosome 15, OCA 2 gene, SNP rs12913832) 3. Tracks trait through AT least 3 generations (ex: students--> grandparents) 4. Shows all possible genetic sequence combinations for selected traits for all generations (ex. brown eyes can be heterozygous brown or homozygous brown)	**29 to >27.0 pts** **Approaching Above Standard** Student CLEARLY covers and EXPLAINS ALL criteria listed below: 1. Selects a complex trait (ex. polygenic, X-linked, codominant) 2. Identifies the chromosome, location and name of gene responsible for trait (ex. Chr. 15, OCA 2 gene) 3. Tracks trait through at least 3 generations (ex: students-->grandparents) 4. Shows ALL possible	**27 to >24.0 pts** **At Standard** Student CLEARLY covers and EXPLAINS ALL criteria listed below: 1. Selects a trait that follows simple dominance/recessive inheritance (ex. widow's peak) 2. Identifies chromosome and gene responsible for trait 3. Tracks trait through at least 3 generations (ex. students-->grandparents) 4. Shows ALL allele combinations needed for trait to be present	**24 to >15.0 pts** **Approaching Standard** Missing 1 of the criteria listed in the AT STANDARD category	**15 to >0 pts** **Below Standard** Missing 2 or more from the AT STANDARD category OR Does not turn in project/ project unrelated to the PBL	30 pts

Criteria		Ratings				Pts
	5. Clearly identifies where the mutation occurs in order to produce said trait (see exemplar listed in assignment/in class)	allele combinations needed for trait to be present and absent (ex. GG for blue eyes, TT or TG for brown)	and absent (ex. Ww or WW for widow's peak)			