**Variety in the Monster Population**

 **Possible genes for each trait:** use a random number generator to randomly pick **one** gene for e**ach trait**. Write that trait onto your Monster Genetics Worksheet

**Hair Color DNA Options:** Use a random number generator (on your phone or a computer, or a 4 sided dice if you have one) to pick one of these at random. **Circle your DNA!**

Hair 1: TAC AGA AAG AAT CTG GTT GTA ATC

Hair 2: TAC CAC ACC ATG CTG ACT

Hair 3: TAC CAA ACC GTA GAT GGC ATT

Hair 4: TAC TCG CGT GCC GAT CTG ATC

**Number of Legs DNA options:** Use a random number generator (on your phone or a computer, or a 4 sided dice if you have one) to pick one of these at random. **Circle your DNA!**

Legs 1: TAC GAG CCC ACC AGT ACT

Legs 2: TAC TAT AGC ACC GGG ACT

Legs 3: TAC CAA TTT TAT ACA AGG ATC

Legs 4: TAC ACC GGT CTA GTC ATC

**Skin Color Options:** Use a random number generator (on your phone or a computer, or a 4 sided dice if you have one) to pick one of these at random. **Circle your DNA!**

Skin 1: TAC CAA CGT GTA GAG GGG TCT ATT

Skin 2: TAC GAG CTA TAA ACG GAC TGG ATT

Skin 3: TAC GGA CGC TCT TCA ATC

Skin 4: TAC GGA GCG CGA TTA ATT

**Number of Eyes Options:** Use a random number generator (on your phone or a computer, or a 4 sided dice if you have one) to pick one of these at random. **Circle your DNA!**

Eyes 1: TAC AAT CTG CGT GCG AGT GTA ACT

Eyes 2: TAC CAC TAG ACA GAG TGT GTA ACT

Eyes 3: TAC TCG ACC CTC ATA CTA ATT

Eyes 4: TAC GGG TCC GCG TTT ATC

**Hair Texture Options:** Use a random number generator (on your phone or a computer, or a 4 sided dice if you have one) to pick one of these at random. **Circle your DNA!**

Hair texture 1: TAC AGC CGG GTA GAA GGA GCT CAC ATT

Hair Texture 2: TAC ACC ACG TAT ATC

Hair Texture 3: TAC GAG CTA ACC TTG CAA ACT

Hair Texture 4: TAC CAA ACC CTT ATA CCA ATT

**Special Feature Option:** Use a random number generator (on your phone or a computer, or a 4 sided dice if you have one) to pick one of these at random. **Circle your DNA!**

Feature 1: TAC AAC CTG ACC GTG GAG GGA ATC

Feature 2: TAC AGA TTC TAT ACG GAA TGC ATT

Feature 3: TAC CAA AAA AGA GTT GTA AAT GGT ACT

Feature 4: TAC CAG TAG ACA GAC TGG ATC

**Number of Arms Option:** Use a random number generator (on your phone or a computer, or a coin) to pick one of these at random. **Circle your DNA!**

Arms 1: TAC AAC TGG ACC GTG GAT GGC ATT

Arms 2: TAC ATG CCC TTG AGA AAA ATG CTG TTA CAC GTT ATT

**Variety in the Monster Population**

**Amino acids to traits:** Use the chart below to convert the amino acid chain you found on your Monster Genetics Worksheet into **visible trait for your monster.**

|  |  |
| --- | --- |
| **Amino Acid Sequence**  | **Trait** |
| Serine – Phenylalanine – Leucine – Aspartic Acid – Glutamine – Histidine | purplehair |
| Valine – Tryptophan – Tyrosine – Aspartic Acid | green hair |
| Valine – Tryptophan – Histidine – Leucine – Proline | orangehair |
| Serine – Alanine – Arginine – Leucine – Aspartic Acid | blue hair |
| Leucine – Glycine – Tryptophan – Serine | 1 Leg |
| Isoleucine – Serine – Tryptophan – Proline | 2 Legs |
| Valine – Lysine – Isoleucine – Cysteine- Serine | 3 Legs |
| Tryptophan – Proline – Aspartic Acid - Glycine | 4 Legs |
| Valine – Alanine – Histidine – Leucine – Proline – Arginine | yellowskin |
| Leucine – Aspartic Acid – Isoleucine – Cysteine – Leucine – Threonine | green skin |
| Proline – Alanine – Arginine – Serine | pink skin |
| Proline – Arginine – Alanine – Asparagine | orangeskin |
| Leucine – Aspartic Acid – Alanine – Arginine – Serine – Histidine | 2 eyes |
| Valine – Isoleucine – Cysteine – Leucine – Threonine – Histidine | 3 eyes |
| Serine – Tryptophan – Glutamic Acid – Tyrosine – Aspartic Acid | 4 eyes |
| Proline – Arginine – Arginine – Lysine | 5 eyes |
| Serine – Alanine – Histidine – Leucine – Proline – Arginine – Valine | StraightHair |
| Tryptophan – Cysteine – Isoleucine | Curly Hair |
| Leucine – Aspartic Acid – Tryptophan – Asparagine – Valine | Kinky Hair |
| Valine – Tryptophan- Glutamic Acid – Tyrosine - Glycine | Wavy Hair |
| Leucine – Aspartic Acid – Tryptophan – Histidine – Leucine – Proline | Tusks |
| Serine – Lysine – Isoleucine – Cysteine – Leucine – Threonine | Scales |
| Valine – Phenylalanine – Serine – Glutamine – Histidine – Leucine – Proline | Horns |
| Valine – Isoleucine – Cysteine – Leucine – Threonine | Warty |
| Leucine – Threonine – Tryptophan – Histidine – Leucine – Proline | 2 Arms |
| Tyrosine – Glycine – Asparagine – Serine – Phenylalanine – Tyrosine – Aspartic Acid – Asparagine – Valine – Glutamine | Armless |