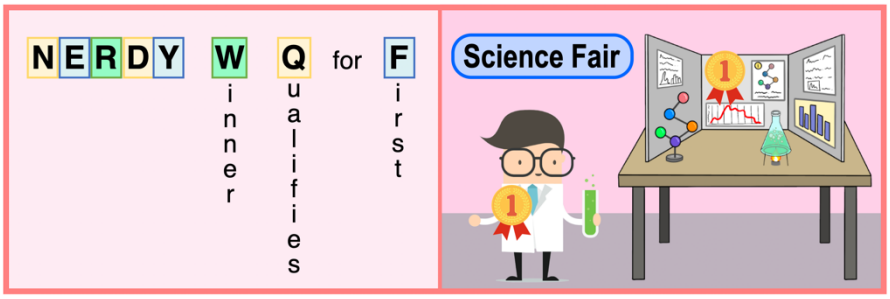
CONCEPT: AMINO ACID ONE LETTER CODE

Phonetic 1-Letter Amino Acid Codes

- 8 out of 20 of the one-letter abbreviations are _____ in origin.

1-Letter Symbol Phonetic Origins:

Arginine = "__ginine" = __	Glutamine = "__-tamine" = __
Asparagine = "Asparagi__e" = __	Phenylalanine = "__enylalanine" = __
Aspartic Acid = "aspar__ic" = __	Tryptophan = "t__iptophan" = __
Glutamic acid = "glutam__c" = __	Tyrosine = "t__rosine" = __



EXAMPLE: Which of the following amino acid 1-letter symbols is of phonetic origin?

a) E b) K c) T d) C

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Other 1-Letter Codes

- For amino acids with _____ 1st letters, their one-letter-symbol is their 1st letter.
- Some amino acid 1st letters are not unique but are still used because they are more _____.
  - For example, overall leucine is more common than lysine in proteins, so leucine's symbol = ___.
- Only a few letters remained in the alphabet, so "___" was chosen for Lysine since its closest to L in the alphabet.

Amino Acid 1-Letter-Symbols

Alanine ·····___	Glutamic Acid·····E	Leucine·····___	Serine·····___
Arginine·····R	Glutamine·····Q	Lysine·····___	Threonine·····___
Asparagine·····N	Glycine·····___	Methionine·····___	Tryptophan·····W
Aspartic Acid·····D	Histidine·····___	Phenylalanine·····F	Tyrosine·····Y
Cysteine·····___	Isoleucine·····___	Proline·····___	Valine·····___

EXAMPLE Which 1-letter-code is unique in that it is neither the first letter of the amino acid nor phonetic in origin?

a) I b) L c) K d) G e) T

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PRACTICE: Convert the following amino acids into their 1-letter codes: Glycine, Isoleucine, Valine, Tryptophan, Proline.

a) G, I, V, T, P
b) L, I, V, Y, P
c) G, L, V, W, P
d) G, I, V, W, P

PRACTICE: Convert the following 3-letter amino acid codes into 1-letter codes to answer the following question:

How does NASA organize a party?

Thr-His-Glu-Tyr-Pro-Leu-Ala-Asn-Glu-Thr.

PRACTICE: Convert the following 3-letter amino acid codes into 1-letter codes to reveal the sentence.

Ile-Leu-Ile-Lys-Glu-Cys-Ala-Asn-Asp-Tyr !