Mnemonics—*M*emory *A*ssisted *R*etention *S*trategy (MARS)

Introduction

Students often have trouble recalling certain pieces of information for tests. Mnemonics may be just the answer to help students retain some of that elusive information!

Concepts

- Mnemonics
- Memory aids

Background

"Red on yellow, kill a fellow—red on black, friend of Jack" is a handy way to remember if a snake is poisonous. This verse, which reminds users of the color patterns of poisonous snakes, is an example of a memory aid called a mnemonic device. One of the most common mnemonic devices used in the science classroom is ROY G BIV, which is used to help students remember the colors of the visible spectrum or rainbow (red, orange, yellow, green, blue, indigo, and violet).

The mnemonic device in the title, MARS, is an example of a strategy used to remember the definition of a concept, in this case mnemonics, by forming an easy-to-remember construct with the first letter of each word in the definition. Mnemonics are memory aids—devices intended to assist the memory. Mnemonics can be formulas or verses that assist the user with retaining and recalling past experiences. The repetition and associations formed with mnemonics create easy-to-remember constructs based on personal, special or meaningful information, which otherwise occurs in meaningless sequences.

The word mnemonics comes from the name of the Greek god *Mnemosyne*, who in Greek mythology was considered the personification of memory. Mnemonic devices are important techniques associated with brain-based learning strategies, because the meaningful constructs that result are key to retaining the concepts.

Some popular mnemonics are listed below.

Roman Numerals

I Value **X**ylophones **L**ike **C**ows **D**ig **M**ilk

I	V	X	L	C	D	M
1	5	10	50	100	500	1000

Planets

My **V**ery **E**ager **M**other **J**ust **S**erved **U**s **N**ine **P**izzas

Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto (Please see tip on page 3 regarding Pluto's status as a planet.)

My **V**ery **E**nergetic **M**other **J**ust **S**erved **U**s **N**oodles (for those who accept Pluto's classification as a dwarf planet)

Stellar Classification

Oh **B**e **A** **F**ine **G**irl/**G**uy, **K**iss **M**y **L**ips **T**enderly

O, B, A, F, G, K, M, L, T

Metric System Prefixes

King **H**enry **D**ied **D**rinking **C**hocolate **M**ilk

kilo	hecta	deca	deci	centi	milli
1000	100	10	0.1	0.01	0.001

Taxonomy

Did **K**ing **P**hillip **C**ome **O**ver **F**rom **G**reece **S**aturday?

Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species

Publication No. 10731
061616

Kingdoms of Life

All **P**ilots **F**ly **P**lanes **E**very **A**fternoon

Animalia, Plantae, Fungi, Protista, Eubacteria, Archaea

Stages of Mitosis

I Pet **M**y **A**wful **T**iger

Interphase, Prophase, Metaphase, Anaphase, and Telophase

Diatomic Elements

I Bring **C**lay **F**or **O**ur **N**ew **H**ouse

Iodine, Bromine, Chlorine, Fluorine, Oxygen, Nitrogen, and Hydrogen

Common Elements

CHONPS CaFe

Carbon, Hydrogen, Oxygen, Nitrogen, Phosphorus, Sulfur, Calcium, and Iron

Macronutrients

C HOPKINS CaFe is **M**ighty **g**ood.

Carbon, Hydrogen, Oxygen, Phosphorus, Potassium, Iodine, Nitrogen, Sulfur, Calcium, Iron, and Magnesium

Relationship between electricity and magnetism as they relate to force

F BIL

Force = Magnetism × Current × Length

8 Simple Sugars (Isomers of glucose)

All **A**ltruists **G**ladly **M**ake **G**um **I**n **G**allon **T**anks

Allose, Altrose, Glucose, Mannose, Gulose, Idose, Galactose, and Talose

Redox Reactions

Red **C**at **A**nd **O**x

Reduction occurs at the cathode, the anode is where oxidation occurs.

LEO the lion says **GER**

Loss of Electrons is Oxidation while Gain of Electrons is Reduction

OIL RIG

Oxidation Is Loss, Reduction Is Gain

Cardinal Points of the Compass—clockwise

Never **E**at **S**limy **W**orms
Never **E**at **S**oggy **W**affles

North, East, South, and West

Geologic Time Periods

Paleozoic Era

Campbell's **O**rdinary **S**oup **D**eveloped **M**ysterious **P**ains in **P**ercy

Cambrian, Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian, Permian

Mesozoic Era

Try **J**udy's **C**ooking

Triassic, Jurassic, and Cretaceous

Math

SOH CAH TOA [so ca tō a]

Sine is opposite divided by hypotenuse

Cosine is adjacent divided by hypotenuse

Tangent is opposite divided by adjacent

Graphing

DRY MIX

Dependent or responding variable is on the Y axis and the manipulated or independent variable is on the X axis

Tips

- Encourage students to think of definitions or terminology that have been difficult to remember and have them come up with mnemonics to help them remember these concepts in the future.
- Have students teach each other concepts using mnemonics.
- According to the International Astronomical Union, Pluto is no longer classified as a planet, but is now at the head of a new class of celestial objects called dwarf planets or plutoids. As of 2006 there were three identified dwarf planets: Ceres, Pluto, and 2003 UB_{313}. This is a good opportunity to discuss the history and nature of science as an ever-evolving discipline.

Connecting to the National Standards

This laboratory activity relates to the following National Science Education Standards (1996):

Unifying Concepts and Process: Grades K–12
Systems, order, and organization