First Day of School!

Science 8R Mr. Benchimol

Class Guidelines ditto. Take home. Read it. Fill out the back. Get it signed. Return it tomorrow.

Email Contact:
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Aim: Go over class expectations and distribute Text Books.

Save EVERYTHING! Points will be awarded at the end of the year. Keep everything in a BINDER.

Tests worth 100 points. About every week or two.

Surprise Quizzes are worth 20 points. Quizzes can be corrected.

Labs are worth 20 points. We will try to do labs about once a week.

Participation is worth 100 points. You start with a 100 and lose points for...

- talking
- lateness
- no pen/pencil
- no books

Homework is worth 1 point. We will have about 10 - 20 homeworks a quarter

Hall Passes are yours. You get 5 times.
Unused boxes are worth points.

You will get progress reports weekly.

Problem solving in science

Observation: Using your senses to gather information.

"It is cloudy outside."

SENSES

SIGHT
TOUCH
HEARING
SMELL
TASTE

Inference: A judgment based on past experience.

"It is going to rain soon."

Good observations lead to a testable prediction called a hypothesis

We test a hypothesis with an experiment.

The information from an

experiment can be used to form a

theory.

A theory may explain something while a scientific law is a "rule of nature."

Coffee makes grass grow better experiment:

HYPOTHESIS – D.D. COFFEE MAKES GRASS GROW BETTER

CONSTANTS – SAME FOR EVERYTHING
SAME GRASS, SOIL, LIGHT
WATER, FERTILIZER ...

CONTROL – NORMAL CONDITIONS

INDEPENDENT VARIABLE-
1 THING THAT YOU CHANGE

Constants: soil, water, grass, light, fertalizer, temperature.

DEPENDENT VARIABLE-
CHANGES BASED ON THE IND. VAR.

Amount of coffee changed, so plant height changes.

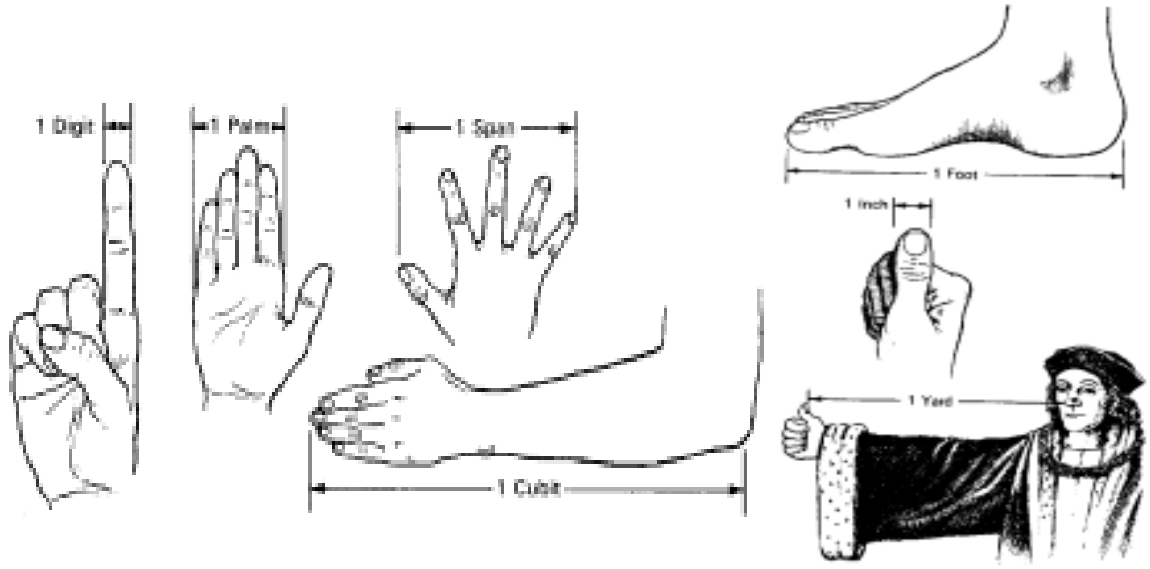
CONCLUSION - D.D. COFFEE DOESN'T MAKE GRASS GROW BETTER (THAN NORMAL)

Observations are made more specific by taking accurate measurements with numbers and units. This is called DATA. Can be shown on graphs.

MODEL - STRUCTURE, PICTURE, REPRESENTS SOMETHING - COMPLEX

1, 1, 2, 3, 5, —, —

Aim: Define standards of measurement.



A Standard is an exact quantity that people agree to use for comparison

Le système Internationale d'Unités (SI)

Developed in 1960 it is an improved version of the metric system.

SI is the standard system of measurement used worldwide.

All SI standards are universally accepted throughout the scientific community.
Each type of measurement contains a base unit and a prefix
which indicates which power of ten to use.

NOT METRIC ENGLISH SYSTEM

INCH, MILE, YARD, FEET
CUPS, PINTS, OUNCE, GALLON, QUART

SI BASE UNITS

Measurement	Unit	Symbol
Length	Meter	m
Mass	Kilogram	kg
Time	Second	s
Electric current	Ampere	A
Temperature	Kelvin	K
Amount of substance	Mole	mol
Intensity of light	Candela	cd

(CELCIUS)

IMPORTANT PREFIXES

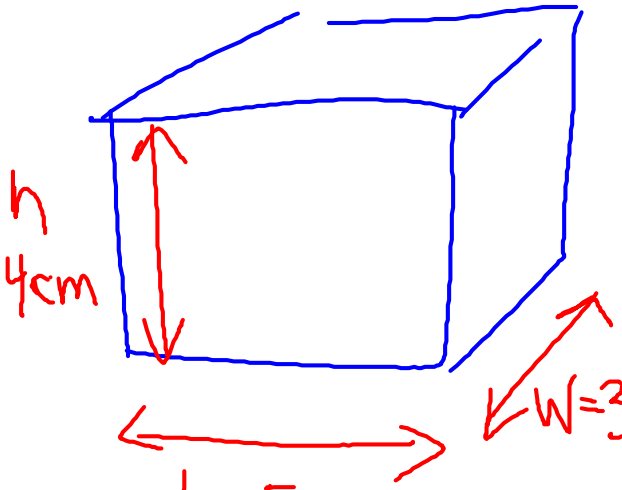
PREFIX	SYMBOL	MULTIPLYING FACTOR
Kilo-	k	1000
deci-	d	0.1
centi-	c	0.01
milli-	m	0.001
micro-	μ	0.000001
nano-	n	0.000000001

KILO METER

1000 METERS

CENTI METER

0.01 m



VOLUME

$V = l \times w \times h$

$X \cdot X \cdot X = X^3$

$V = l \times w \times h$

$V = (5cm) \times (3cm) \times (4cm)$

$V = 60\,cm^3$

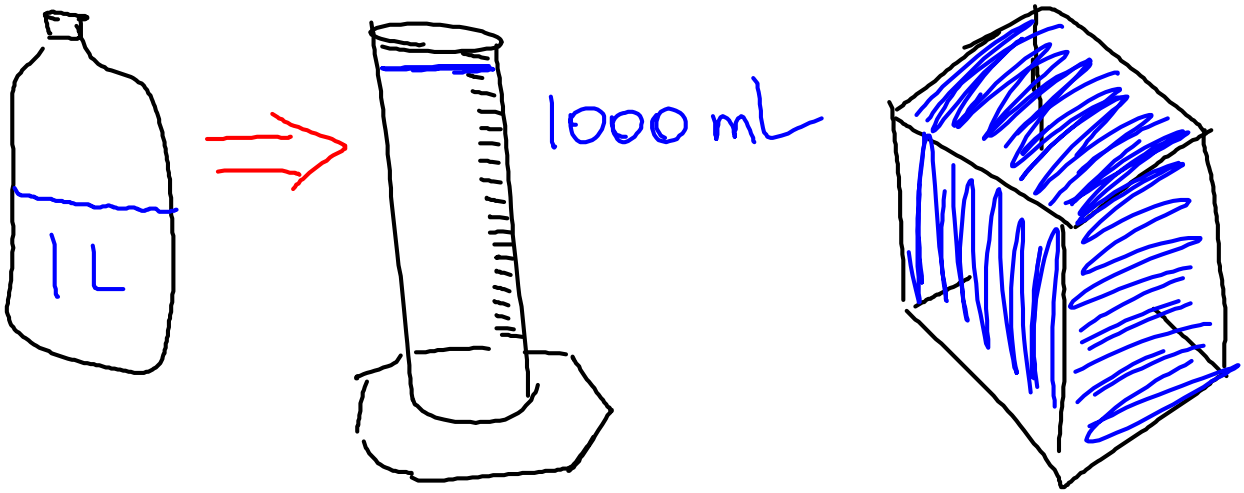
MEASURE VOLUME

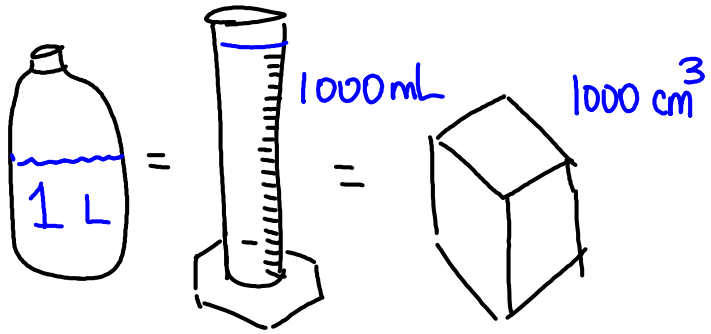
LIQUIDS:
USE LITERS (L) {mL}

$V = L \times W \times h$

$V = (10cm)(10cm)(10cm)$

$V = 1000\ cm^3$



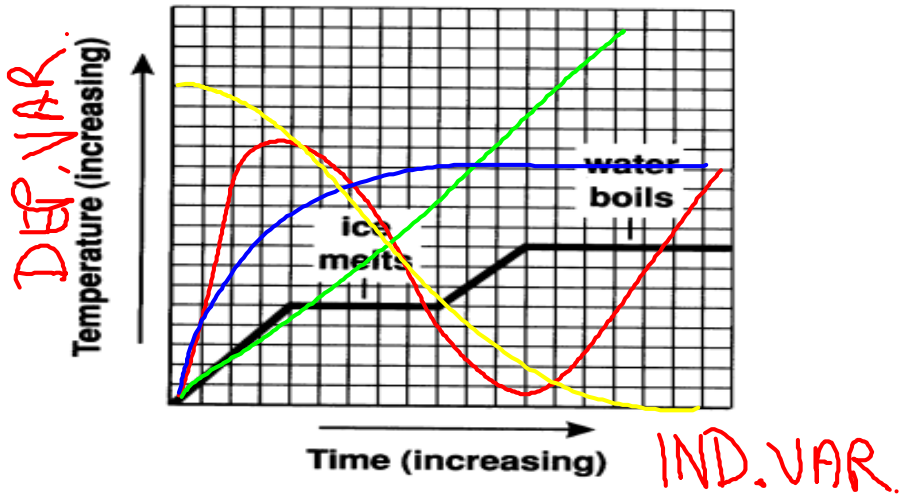


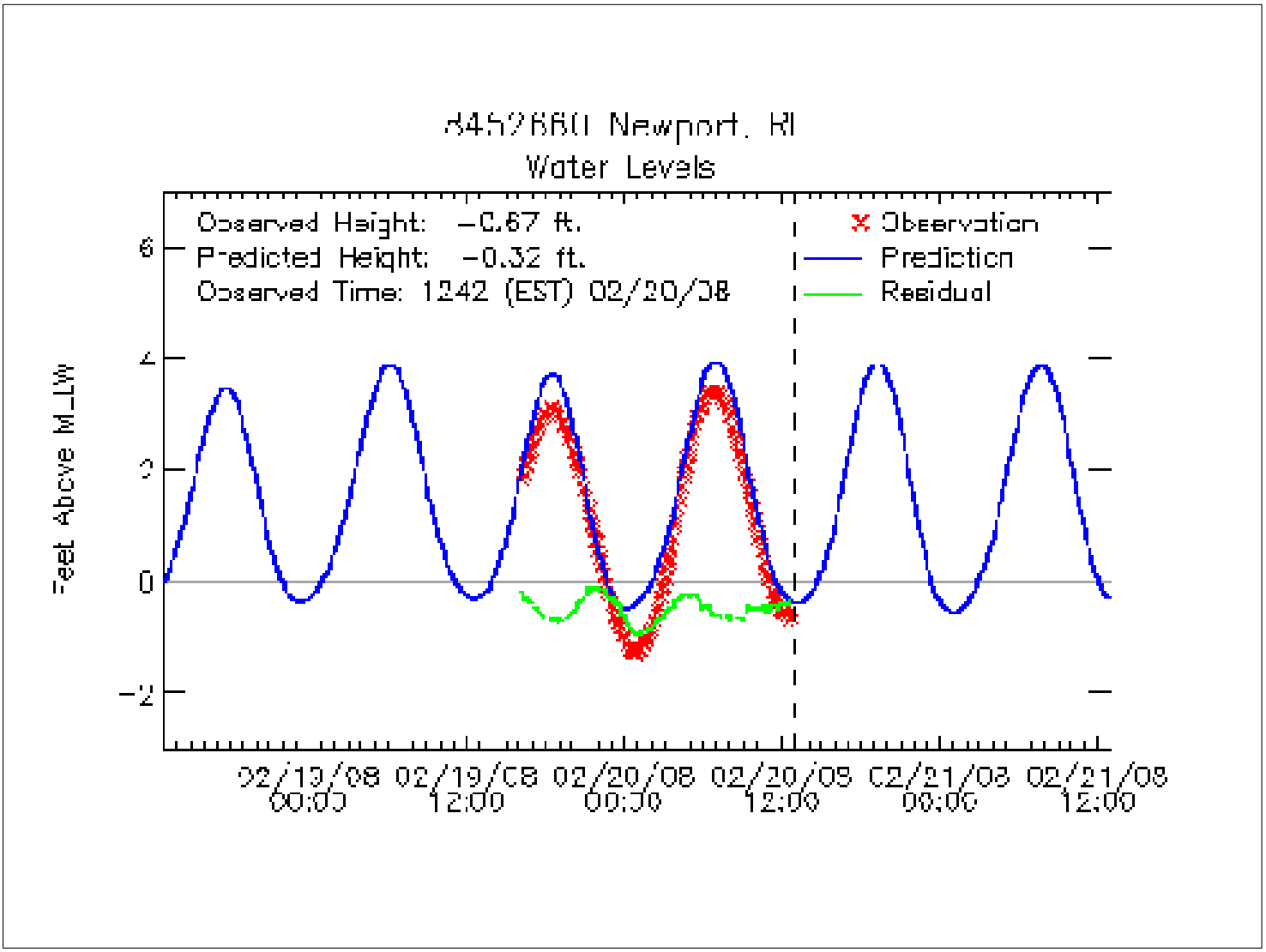
$1\,cm^3 = \frac{1}{}\,mL$

$cm^3 = cc$

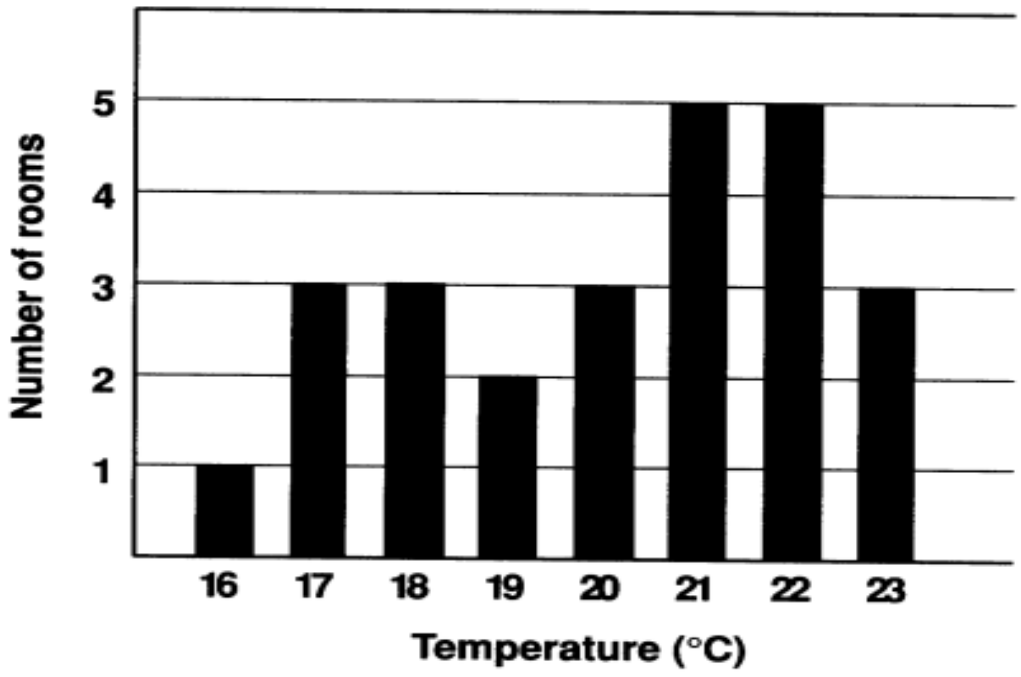
Aim: Identify three types of graphs and explain the correct use of each type.

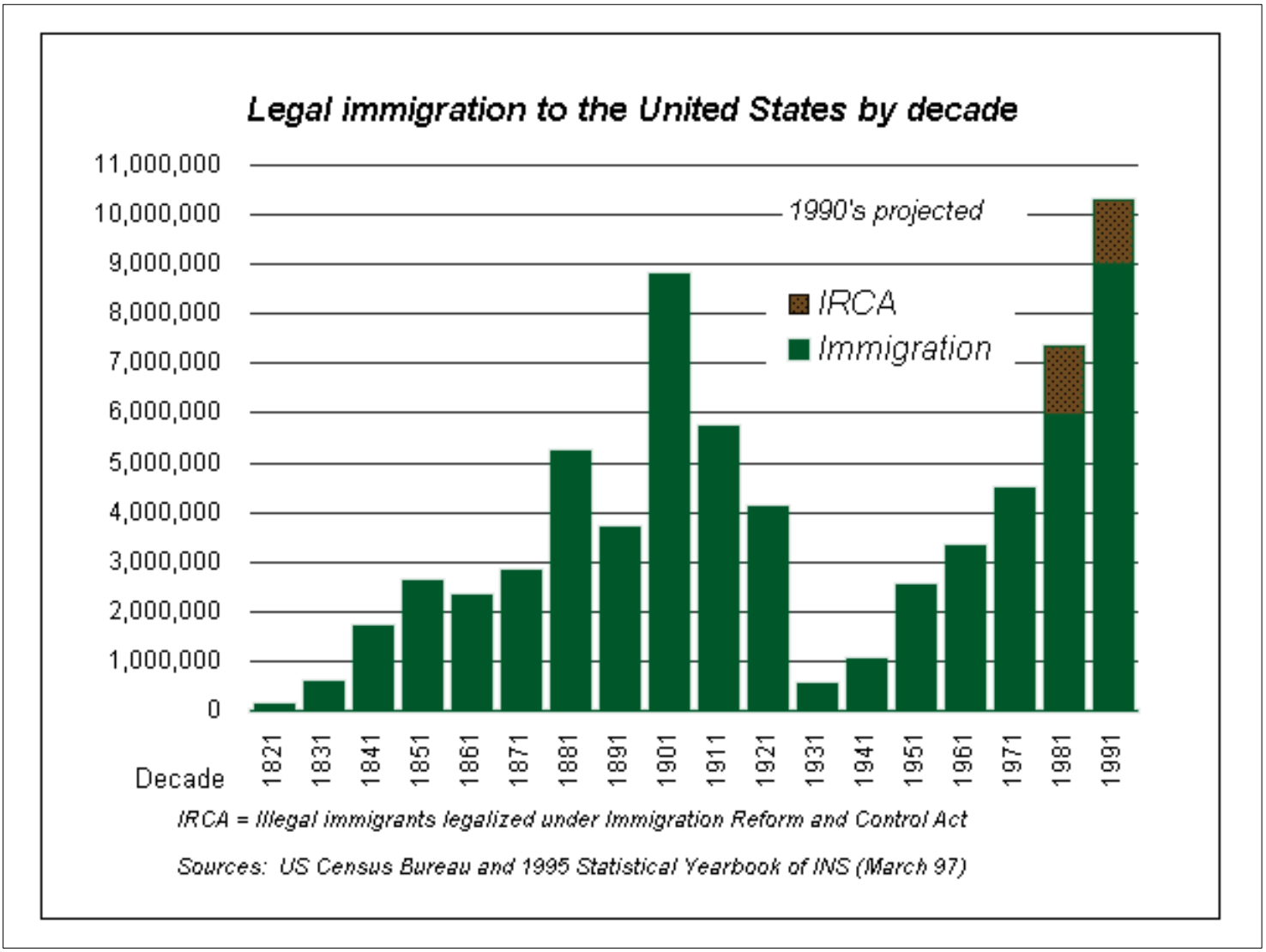
Line Graph:Show trends or continous change. The dependent variable is always plotted on the vertical y-axis. The independent variable is plotted on the x-axis.



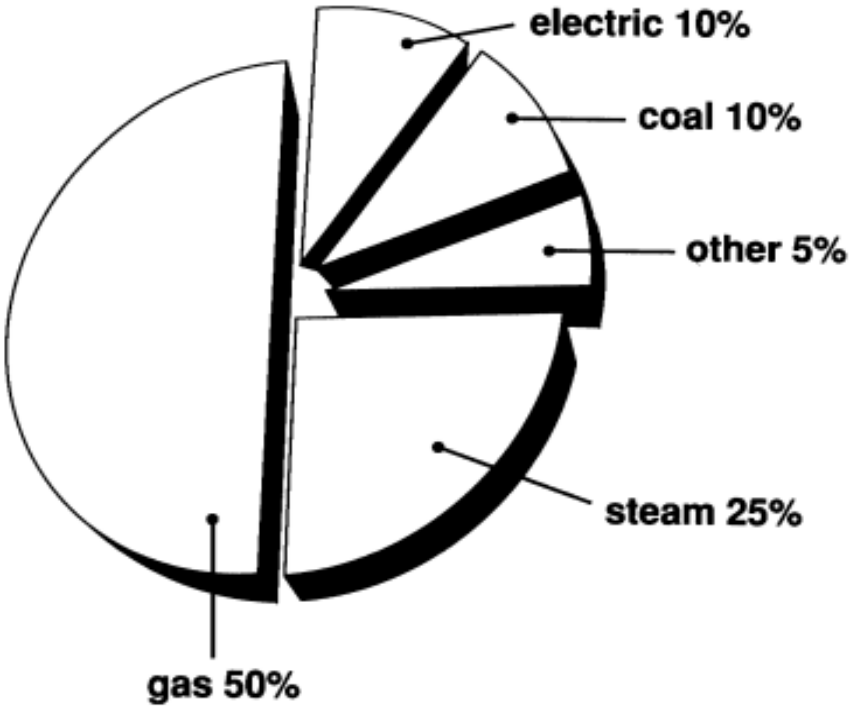

8452660 Newport, RI
Water Levels
Observed Height: -0.67 ft.
Predicted Height: -0.32 ft.
Observed Time: 1242 (EST) 02/20/08
Observation
Prediction
Residual
Feet Above MLLW
6
4
2
0
-2
02/19/08 00:00
02/19/08 12:00
02/20/08 00:00
02/20/08 12:00
02/21/08 00:00
02/21/08 12:00

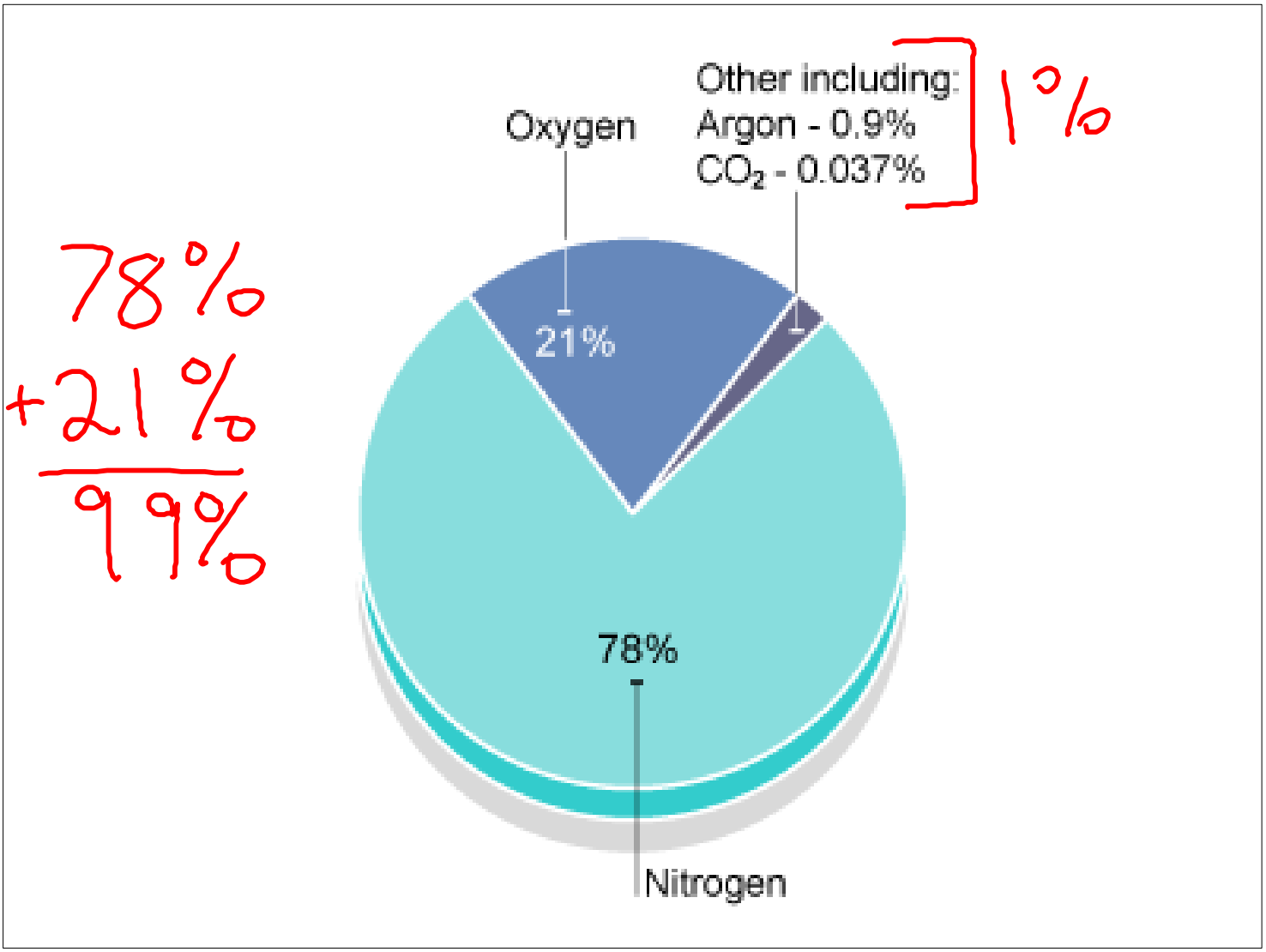
Bar Graph: Shows information collected by counting.
The bars are not connected.

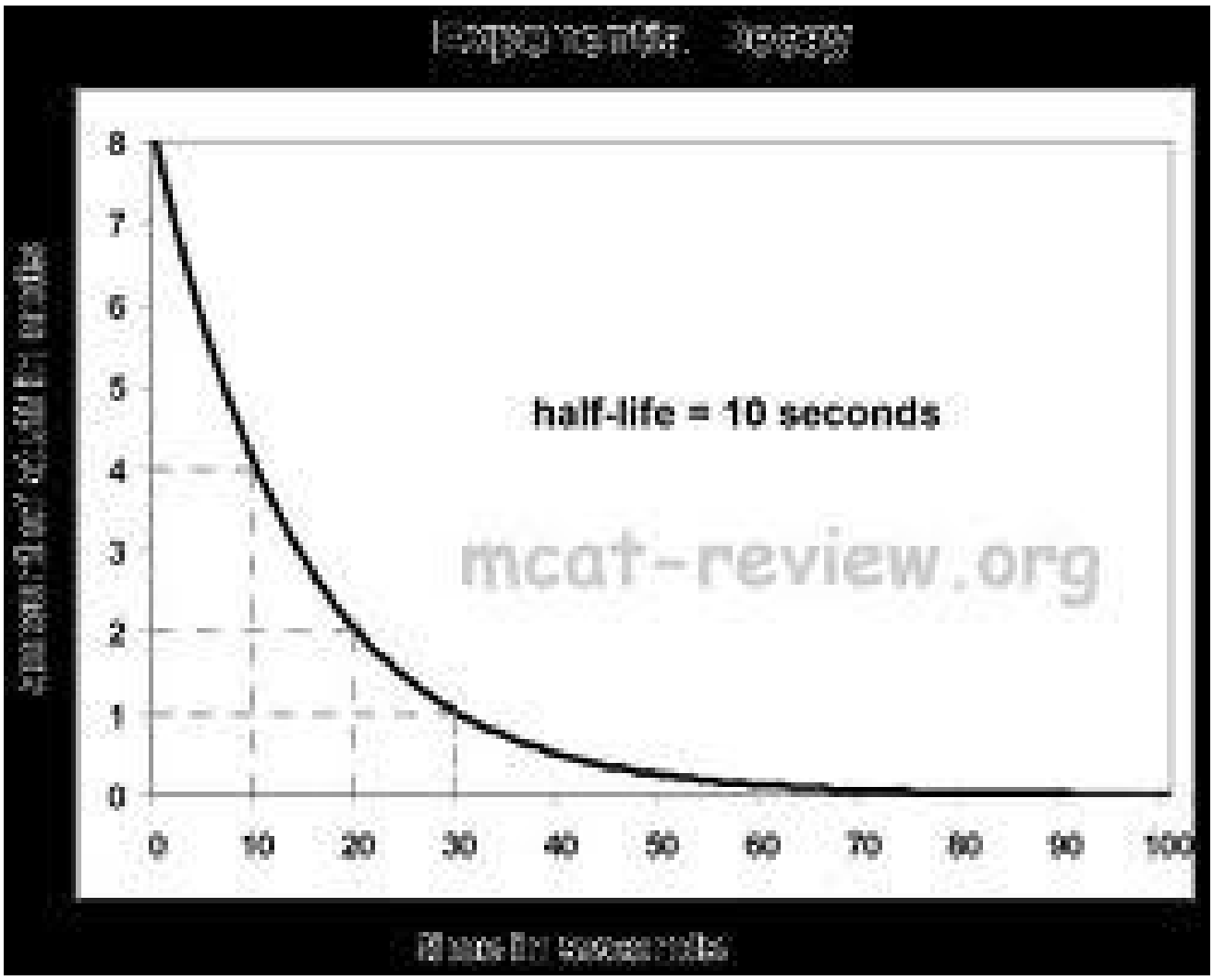



Legal immigration to the United States by decade
11,000,000
10,000,000
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
1990's projected
IRCA
Immigration
Decade
1821
1831
1841
1851
1861
1871
1881
1891
1901
1911
1921
1931
1941
1951
1961
1971
1981
1991
IRCA = Illegal immigrants legalized under Immigration Reform and Control Act
Sources: US Census Bureau and 1995 Statistical Yearbook of INS (March 97)

Pie Graph:Shows how a fixed quantity is broken down into parts.




Other including:
Argon - 0.9%
CO_2 - 0.037%
Oxygen
21%
78%
Nitrogen
1%
78%
+21%
99%


8
7
6
5
4
3
2
1
0
0
10
20
30
40
50
60
70
80
90
half-life = 10 seconds
mcat-review.org