Ross's Den

Welcome to Biology!!

BE READY

- Bring binder, books, pencils, pens
- Bring a good work ethic – full effort every minute
- Work as a team, we are only as strong as the members in our class
- Don't touch anything without permission
- Treat everyone with respect

BLAME NO ONE
EXPECT NOTHING
DO SOMETHING

Stereo Types

- Was a NCAA Div. 1 Scholarship Athlete
- Was a High Fashion Model
- Wrote my first Science Research Paper and conducted my first dissection in 2nd grade
- Won my High School Science Fair competition and went on to finals in the State
- Was in TV Commercial

Did Not Win the Science Fair

Name Game

- What is your name
- What do you like to do for fun

Class with the highest GPA wins a pizza party!

- Binder
- 3X5 cards
- Metal Ring

Lab Safety

Metric Olympics

What are the measurements?

- Volume
- Length
- Mass

1000 100 10 (Unit) .1 .01 .001

Metrics

- Meter = Length (Inches,feet, miles)
- Grams = weight (lbs, ounces)
- Liters = volume (Gallons, pints, quart)
- Celsius = Temperature

Chapter 1

- ***Biology*** is the study of life
- People have always been curious about living things around them.
- What have you ever wondered about living things around you?
- You are now a young biologist!

Kilo	Hecto	Deca	Meter. Liter Gram	Deci	Centi	Milli
1000	100	10	1	.1	.01	.001

Section 1.1

- There are many life forms which have not been discovered yet.
- Are there ***organisms*** or livings things that you can't see?
- There is an order in the natural world even if you think things look strange.

- Biologists study the interactions of life, or living things.
- There is a delicate balance to nature
- Living things depend on other living things and non-living things to survive.
- All living organisms fit into the dynamic pattern of life on our planet.

- Nothing can live in isolation, the study of biology includes investigation of living interactions.
- Human existence is closely related to the existence of other living things.
- It is only through the understanding of the intricate web of nature that humans can understand and preserve life.

- Biological research can lead to advances in medical treatment and disease prevention.
- Studies in biology can also teach you how you fit into the world and how to preserve it.

Characteristics of Living Things

- Is a flame alive?????

- Anything that that possesses all of the characteristics of life is considered to be an ***Organism.***

The characteristics of life are:

- Have an orderly structure
- Produce offspring
- Grow and develop
- Adjust to changes in the environment

- All living things show an orderly structure or ***Organization.***
- All living things have cells – one or more.
- Each cell contains genetic material – DNA
- All living things have a cell or cells that function together in an orderly living system.

- Living things make more living things: ***Reproduction.***
- Organisms don't live forever
- ***Species*** is a group of organisms that can interbreed and produce fertile offspring in nature.

- Life begins as a single cell
- ***Growth occurs***, and the living organisms begins to develop.
- ***Development:*** the changes that take place over time to an organisms.
- Did you start as one cell?
- Where are you now?
- Are you done growing?

- ***Environment:*** the water, air, weather, temperature, any other organisms in the areas and many other factors.
- ***Stimulus*** is an organisms reaction to external or internal environment.
- A reaction to a stimulus is a ***response.***

Homeostasis occurs in all living things. It is important to survival. Sweating for humans is an example of homeostasis.

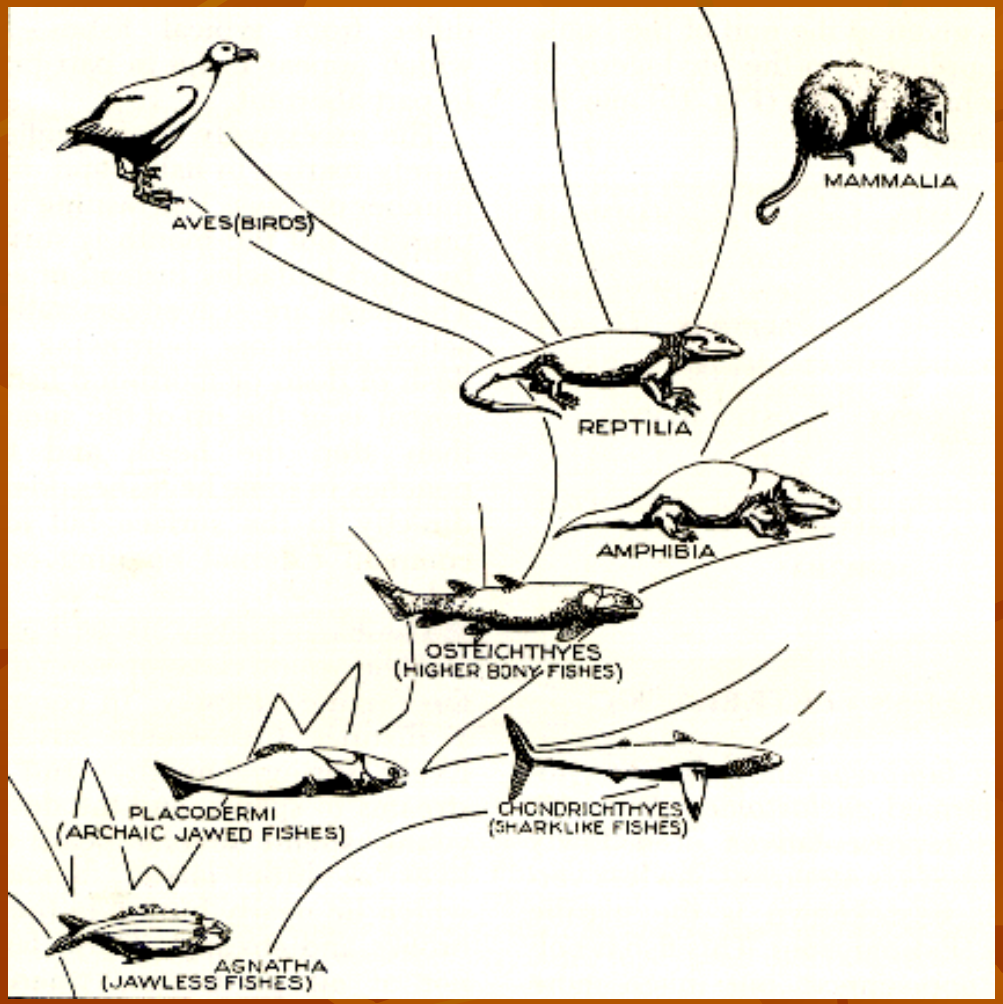
STAND UP!

Energy is the ability to cause change and organisms get it from food.

Living things adapt and evolve

- ***Adaptation*** is inherited structures, behaviors or internal process that enables an organism to respond to environmental factors and to reproduce.
- These are inherited from previous generations.

- When organisms adapt it allows them to change and survive.
- Gradual changes in a species is ***evolution.***



Observing and Hypothesizing

- To answer questions, scientists gather information using the ***scientific method.***
- Investigations begin with identifying a problem.
- Observation one of the strongest traits of a scientist.

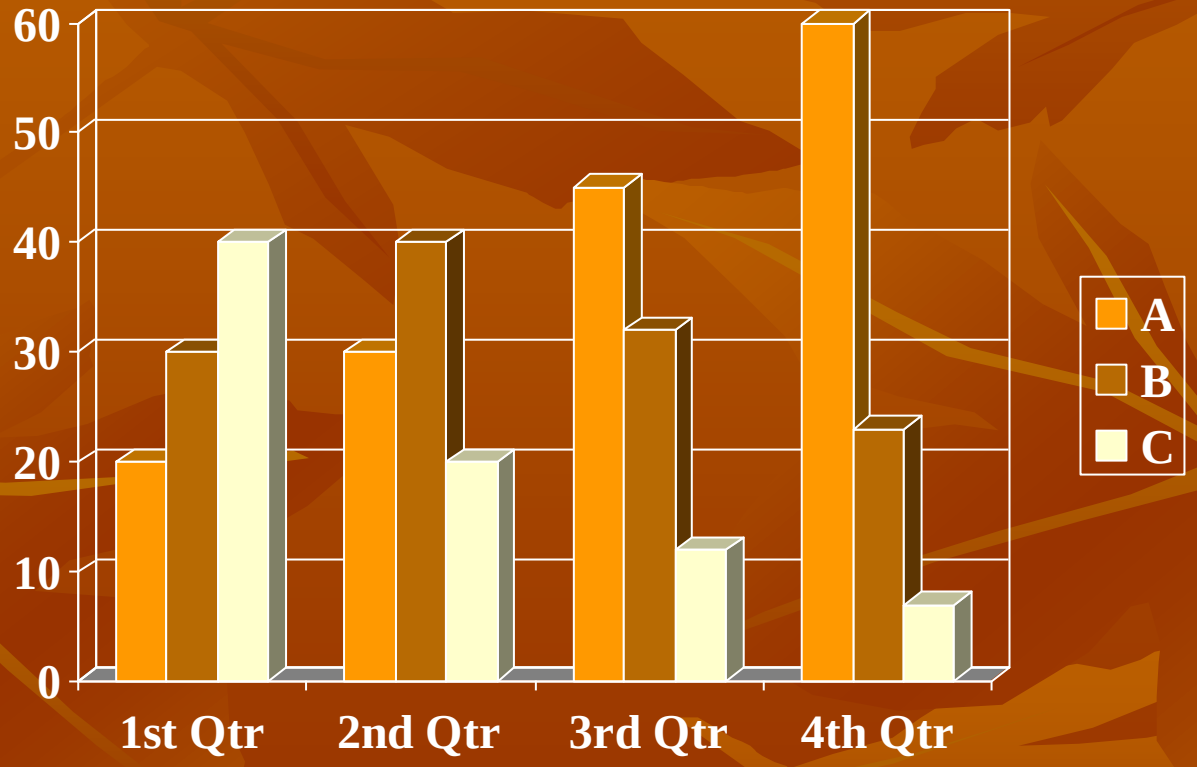
Read from page 12 through 18

"The questions of brown tree snakes"

Fill out guides notes – you have 15 minutes

- ***Quantitative*** information use numbers or measurements
- ***Qualitative*** information expresses qualities and behaviors

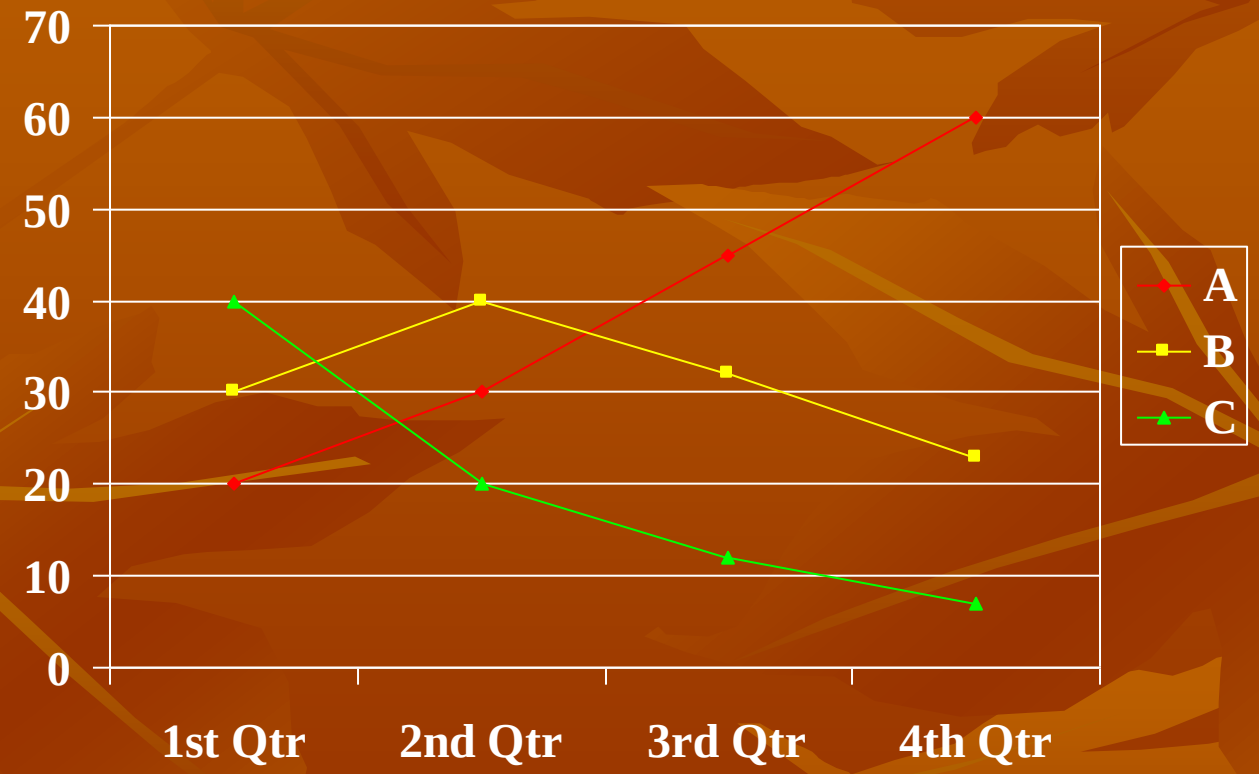
Grades in Mrs. Ross's Class Quantitative Information



What conclusions can you make reading this graph?

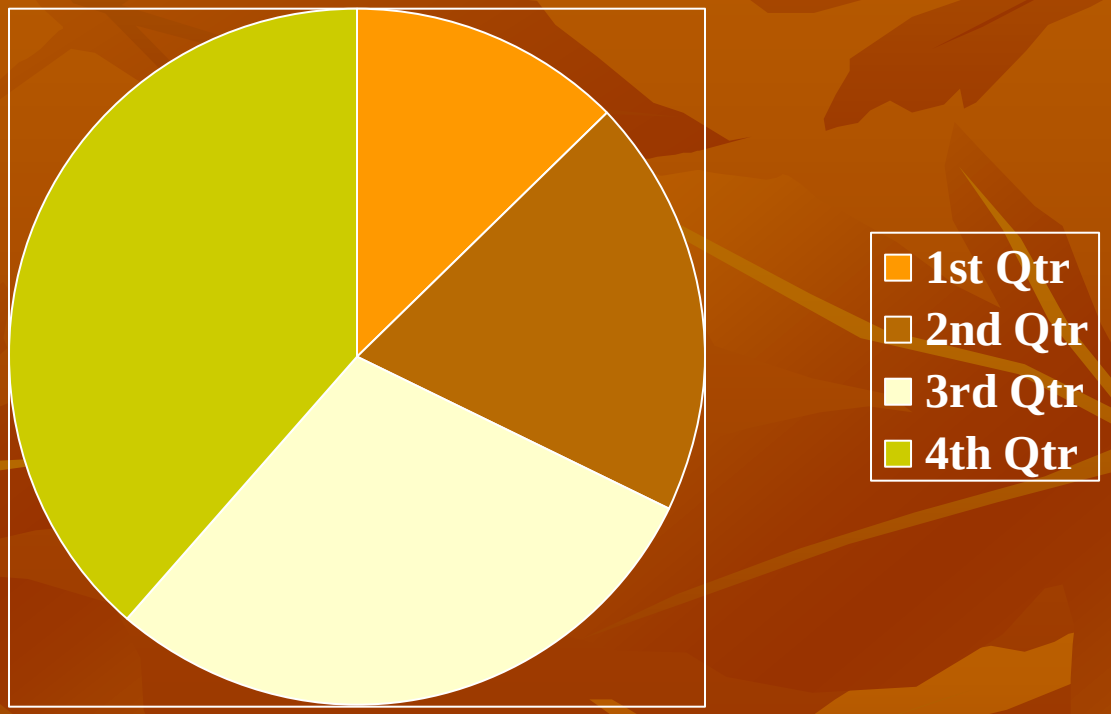
Bar Graph activity

Line Graph



Line Graph Activity

A pie chart with just the A’s



Pie Graph Activity

Qualitative Information

- How do you show behavior?
- Observational data – is just as important
- As a teacher, I need to collect observational data every day.
- How do you think scientists learned about the animal in the next clip?

Graph Lab


EXAMPLE 2
Qualitative and Quantitative Data —
Gardening
Discovery
EDUCATION

Scientific Discovery includes:

- Observations
- Formulating hypotheses
- Performing investigations
- Collecting and analyzing data
- Drawing conclusions
- Reporting results to scientific journals

What do you think happens when you run in place? What changes occur inside your body? Pg 17

Step #1 – Observing – what have you observed

Step #2 – Hypothesis – what is a testable explanation

Step #3 - Collect data, how can you do this?

Step #4 – Publish you theory

Step #5 – Form a theory – is you hypothesis supported through data?

Step #6 – Do you need a new hypothesis?

Step #7 – Do you need to revise your theory?

Ethics refers to the moral principles and values held by humans.

Can you think of any ethical issues in science at this time?

Read from page 21-23

Mummy Lab

Test Book Review

Do pages 28-29

Cross Word Puzzle

Test Review Game