SCIENCE OLYMPIAD EVENTS

23 EVENTS – 3 CATEGORIES

- BUILDS – STUDENTS PRODUCE A PROTOTYPE THAT IS COMPLETE AND TESTED THAT IS BROUGHT TO THE COMPETITION
- LABS – STUDENTS PRACTICE BEFORE THE EVENT, AND THEN PERFORM LAB TESTS AT THE COMPETITION TO SOLVE A PROBLEM.
- TESTS – STUDENTS TAKE EXAMS ON A TOPIC WITH A PARTNER AND CAN BRING ALONG ‘CHEAT SHEETS’

SCIENCE OLYMPIAD™

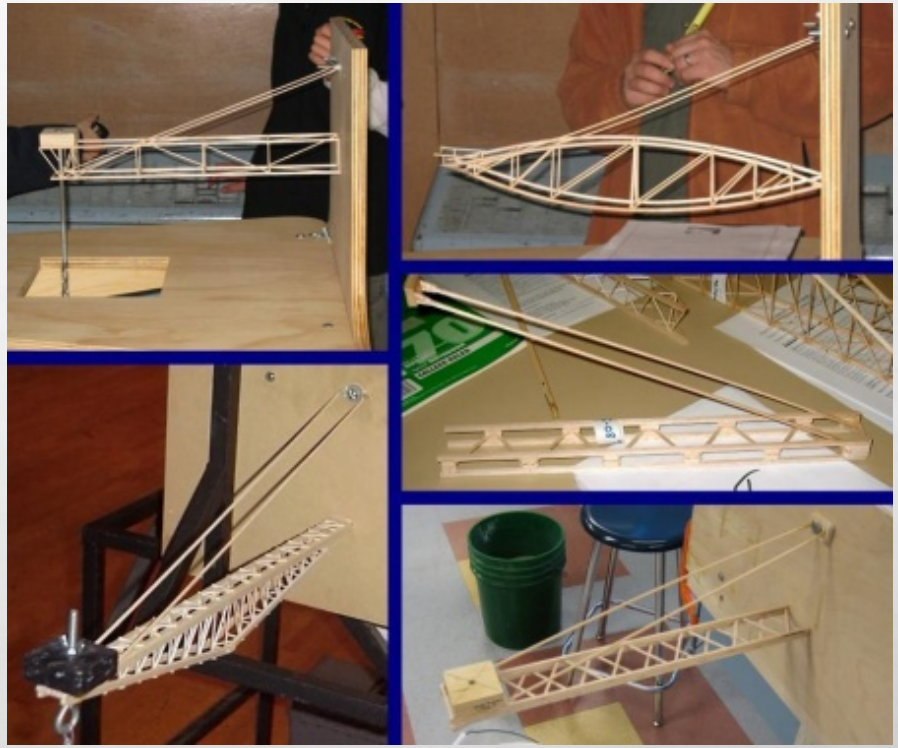
Exploring the World of Science

BUILDS

- BOOMILEVER
- BATTERY BUGGY
- THERMODYNAMICS
- ELASTIC LAUNCHED GLIDER
- ROLLER COASTER

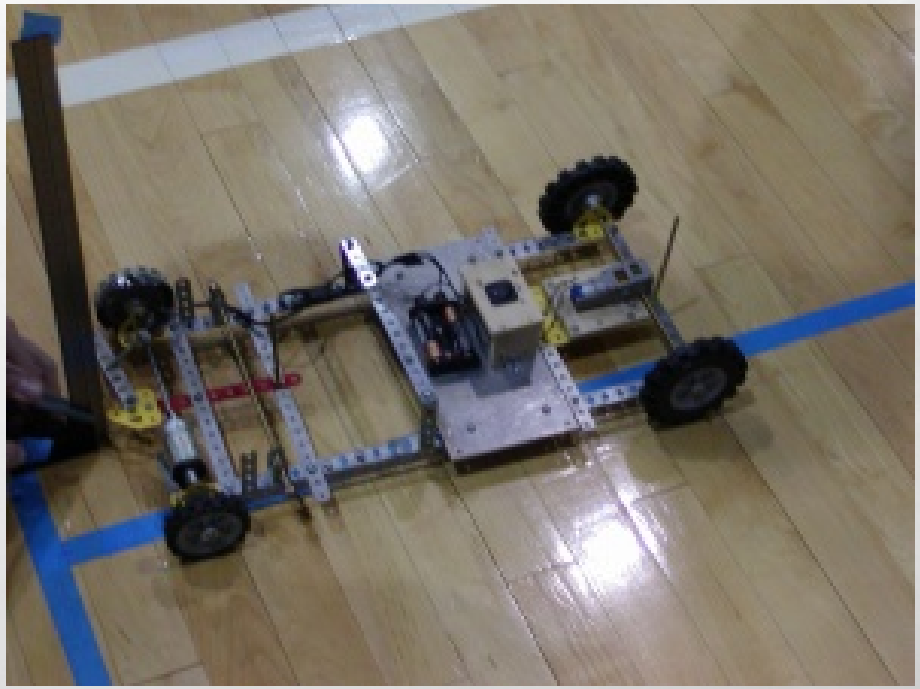
BOOMILEVER – TEAM OF 2

- TEAMS WILL DESIGN AND BUILD A BOOMILEVER MEETING REQUIREMENTS SPECIFIED IN THE RULES SUPPORTING A MINIMUM LOAD AND TO ACHIEVE THE HIGHEST STRUCTURAL EFFICIENCY.
- GOAL IS TO SUPPORT THE MOST WEIGHT BEFORE BREAKING
- MADE OF BALSA WOOD



BATTERY BUGGY – TEAM OF 2

- TEAMS WILL CONSTRUCT A VEHICLE THAT USES ELECTRICAL ENERGY, TRAVELS A SPECIFIC DISTANCE, AND STOPS AT A GIVEN POINT
- BONUS FOR CURVING AND PASSING BETWEEN 2 CANS



THERMODYNAMICS – TEAM OF 2

- TEAMS MUST CONSTRUCT AN INSULATED DEVICE PRIOR TO THE TOURNAMENT THAT IS DESIGNED TO RETAIN HEAT
- MUST FIT IN A 20 CM X 20 CM X 20 CM CUBE
- COMPLETE A WRITTEN TEST ON THERMODYNAMIC CONCEPTS.
- CAN BRING A 3 RING BINDER FULL OF INFO TO HELP ON THE TEST

ELASTIC LAUNCHED GLIDER – TEAM OF 2

- PRIOR TO THE TOURNAMENT TEAMS DESIGN, CONSTRUCT, AND TEST ELASTIC LAUNCHED GLIDERS TO ACHIEVE THE MAXIMUM TIME ALOFT.
- MUST WEIGH 3.5 GRAMS AND LESS THAN 10.5 GRAMS
- WING SPAN LESS THAN 30 CM
- CAN BE FROM A KIT OR OWN DESIGN

ROLLER COASTER – TEAM OF 2

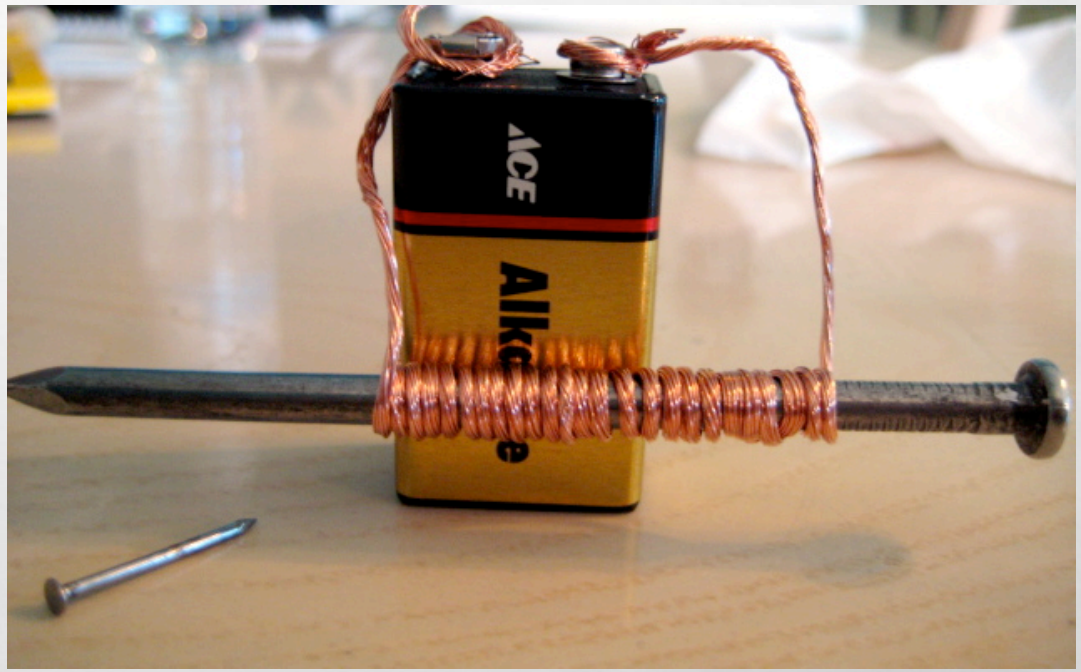
- PRIOR TO THE COMPETITION, TEAMS DESIGN, BUILD, AND TEST A ROLLER COASTER TRACK TO GUIDE A BALL OR SPHERE THAT USES GRAVITATIONAL POTENTIAL ENERGY AS ITS SOLE MEANS OF PROPULSION TO TRAVEL AS CLOSE AS POSSIBLE TO A TARGET TIME
- ROLLER COASTER MUST FIT IN 50 CM X 50 CM X 60 CM CUBE

LABS

- CIRCUIT LAB
- CRIME BUSTERS
- DENSITY LAB
- EXPERIMENTAL DESIGN
- MYSTERY ARCHITECTURE
- POTIONS AND POISONS
- WRITE IT, DO IT

CIRCUIT LAB – TEAM OF 2

- PARTICIPANTS MUST COMPLETE TASKS AND ANSWER QUESTIONS ABOUT ELECTRICITY AND MAGNETISM.
- CAN BRING A 3 RING BINDER FOR HELP ON THE TEST
- LAB PORTION CONSISTS OF MAKING AN ELECTROMAGNETIC, AND BUILDING DIFFERENT TYPES OF CIRCUITS

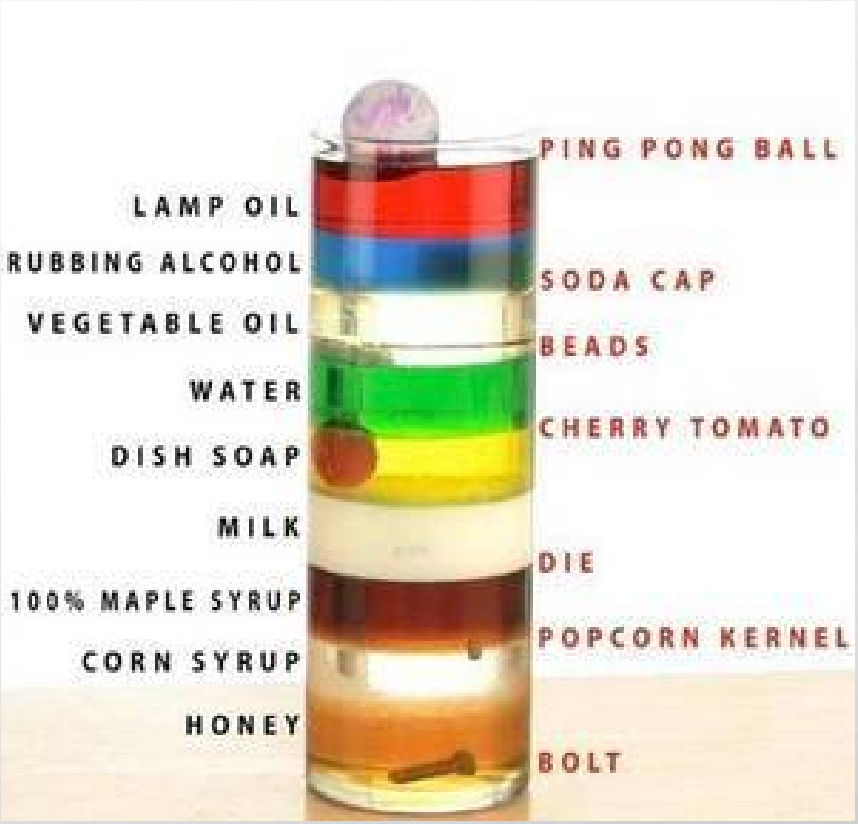


CRIME BUSTERS – TEAM OF 2

- GIVEN A SCENARIO, A COLLECTION OF EVIDENCE, AND POSSIBLE SUSPECTS, STUDENTS WILL PERFORM A SERIES OF TESTS THAT ALONG WITH OTHER EVIDENCE WILL BE USED TO SOLVE A CRIME.
- MAY BRING DOUBLE SIDED 8 ½ X 11 IN SHEET OF PAPER WITH HELPFUL INFO TO AID IN THE LA

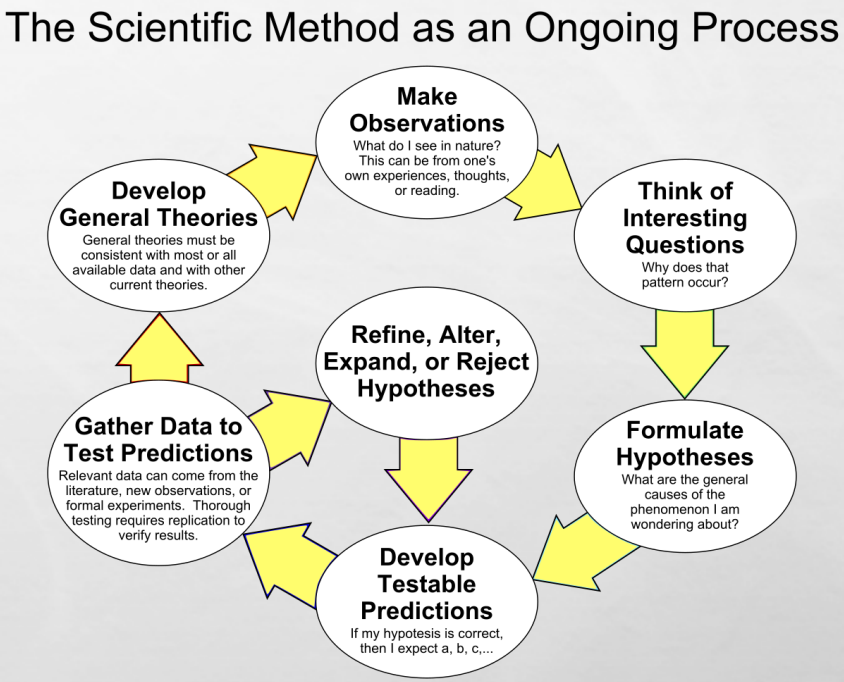
DENSITY LAB – TEAM OF 2

- PARTICIPANTS COMPETE IN ACTIVITIES AND ANSWER QUESTIONS ABOUT MASS, DENSITY, NUMBER DENSITY, AREA DENSITY, CONCENTRATION, PRESSURE AND BUOYANCY.
- CAN BRING A 3 RING BINDER WITH HELPFUL INFO AND CALCULATORS
- LAB AND TEST PORTION



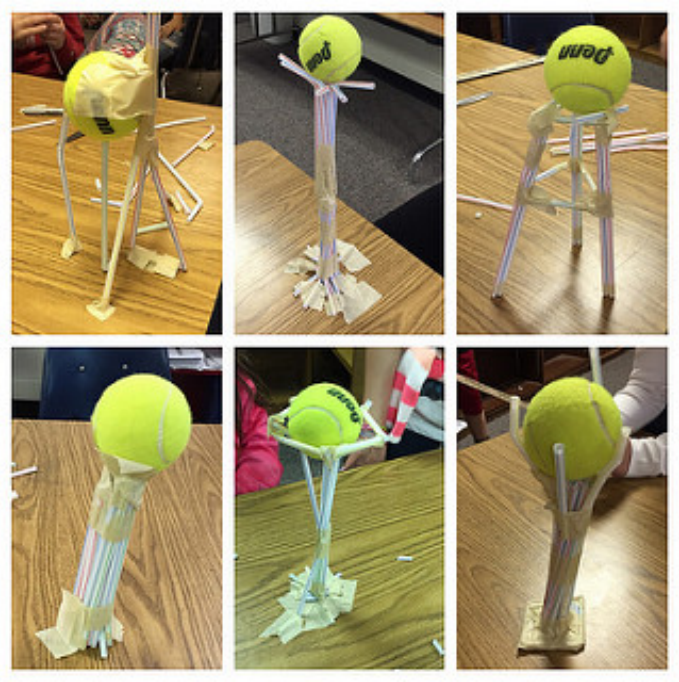
EXPERIMENTAL DESIGN – TEAM OF 3

- THIS EVENT WILL DETERMINE A PARTICIPANT'S ABILITY TO DESIGN, CONDUCT AND REPORT THE FINDINGS OF AN EXPERIMENT CONDUCTED ENTIRELY ON SITE.
- QUESTION OR PROBLEM WILL BE GIVEN ON SITE. 20 MINS TO DESIGN THE TEST, 20 MINS TO ANALYZE FINDINGS



MYSTERY ARCHITECTURE – TEAM OF 2

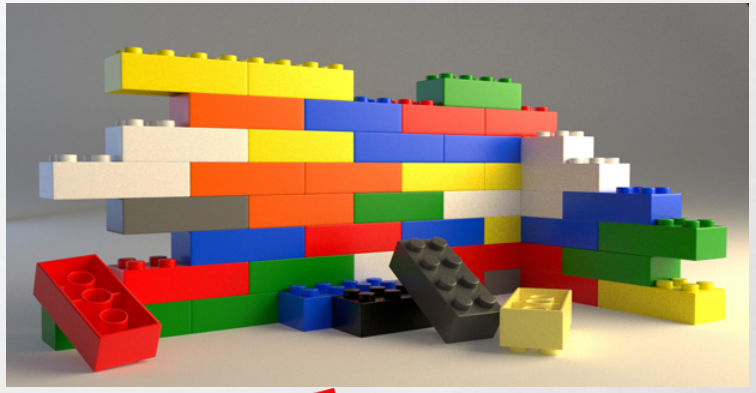
- AT THE BEGINNING OF THE EVENT, TEAMS WILL BE GIVEN A BAG OF BUILDING MATERIALS AND INSTRUCTIONS FOR DESIGNING AND BUILDING A DEVICE THAT CAN BE TESTED.
- EACH TEAM MAY BRING 1 PAIR OF SCISSORS, 1 FLAT STANDARD 30 CM (12”) RULER, AND 1 PAIR OF PLIERS.
- THE DEVICES TO BE BUILT ARE LIMITED TO AN ELEVATED BRIDGE, CANTILEVER, ARCH OR TUNNEL



POTIONS AND POISONS – TEAM OF 2

- THIS EVENT IS ABOUT CHEMICAL PROPERTIES AND EFFECTS OF SPECIFIED TOXIC AND THERAPEUTIC CHEMICAL SUBSTANCES, WITH A FOCUS ON HOUSEHOLD AND ENVIRONMENTAL TOXINS OR POISONS.
- MAY BRING 1 SHEET OF NOTES, AND 2 CALCULATORS
- LAB AND TEST PORTIONS

WRITE IT, DO IT – TEAM OF 2



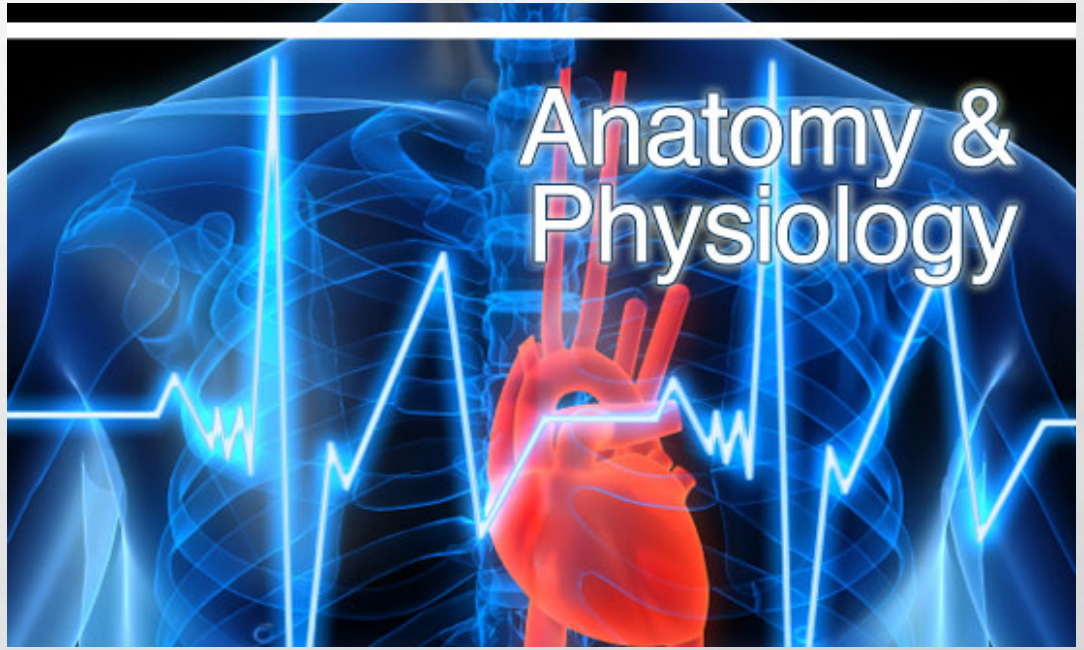
- ONE STUDENT WILL WRITE A DESCRIPTION OF AN OBJECT AND HOW TO BUILD IT, AND THEN THE OTHER STUDENT WILL ATTEMPT TO CONSTRUCT THE OBJECT FROM THIS DESCRIPTION.
- 25 MINS TO WRITE THE DESCRIPTION, 20 MINS TO BUILD

TESTS – WORK IN PARTNERS WITH PAGES OR BINDERS OF NOTES

- ANATOMY AND PHYSIOLOGY
- DISEASE DETECTIVES
- DYNAMIC PLANET
- FOSSILS
- CODE BUSTERS
- HEREDITY
- HERPETOLOGY
- METEOROLOGY
- ROAD SCHOLAR
- SOLAR SYSTEM
- WATER QUALITY

ANATOMY AND PHYSIOLOGY – TEAM OF 2

- UNDERSTAND THE ANATOMY OF THE HUMAN BODY SYSTEMS: CARDIOVASCULAR, LYMPHATIC AND EXCRETORY.
- 8 ½ X 11 SHEET OF NOTES AND 2 CALCULATORS



DISEASE DETECTIVES – TEAM OF 2

- PARTICIPANTS WILL USE INVESTIGATIVE SKILLS IN THE SCIENTIFIC STUDY OF DISEASE, INJURY, HEALTH AND DISABILITY IN POPULATIONS OR GROUPS OF PEOPLE.
- 8 ½ X 11 SHEET OF NOTES AND 2 CALCULATORS

DYNAMIC PLANET – TEAM OF 2

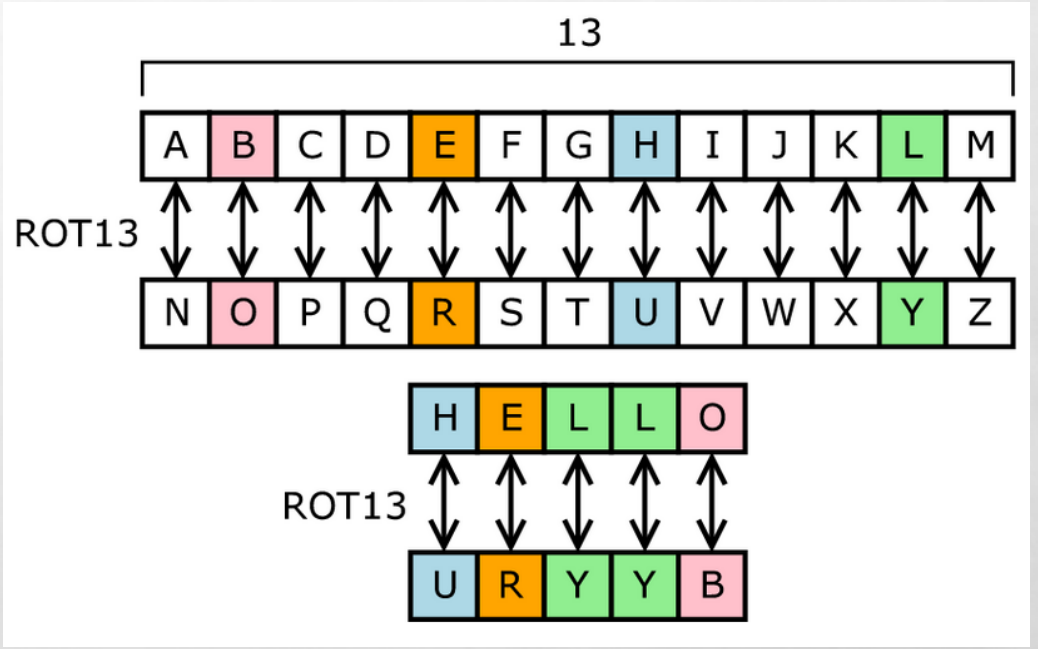
- STUDENTS WILL USE PROCESS SKILLS TO COMPLETE TASKS RELATED TO GLACIERS, GLACIATION AND LONG-TERM CLIMATE CHANGE.
- 4 - 8 ½ X 11 SHEET OF NOTES AND 2 CALCULATORS

FOSSILS – TEAM OF 2

- TEAMS DEMONSTRATE THEIR KNOWLEDGE OF ANCIENT LIFE BY COMPLETING SELECTED TASKS AT A SERIES OF STATIONS INCLUDING FOSSIL IDENTIFICATION, ANSWERING QUESTIONS ABOUT CLASSIFICATION, HABITAT, ECOLOGIC RELATIONSHIPS, BEHAVIORS, ENVIRONMENTAL ADAPTATIONS AND THE USE OF FOSSILS TO DATE AND CORRELATE ROCK UNITS.
- MAY BRING A MAGNIFYING GLASS, A FOSSIL LIST, AND A 3 INCH 3 RING BINDER OF NOTES

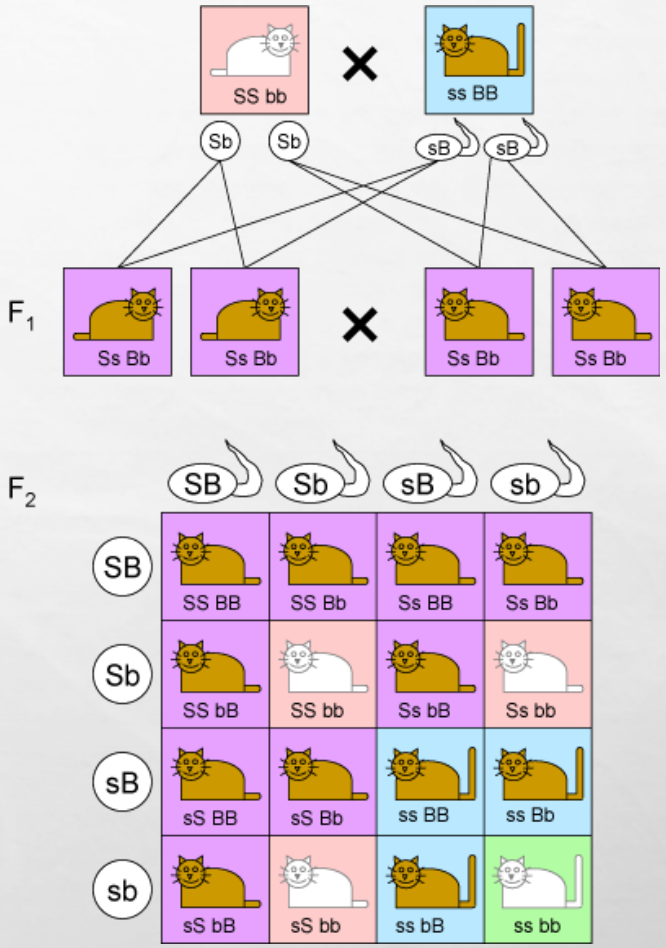
CODE BUSTERS – TEAM OF 3

- TEAMS WILL CRYPTANALYZE (DECODE) ENCRYPTED MESSAGES USING CRYPTANALYSIS TECHNIQUES AND SHOW SKILL WITH ADVANCED CIPHERS BY ENCRYPTING OR DECRYPTING A MESSAGE.
- MAY BRING CALCULATORS



HEREDITY – TEAM OF 2

- PARTICIPANTS WILL SOLVE PROBLEMS AND ANALYZE DATA OR DIAGRAMS USING THEIR KNOWLEDGE OF THE BASIC PRINCIPLES OF GENETICS.
- MAY BRING 8 ½ X 11 SHEET PAGE OF NOTES AND 2 CALCULATORS
- WILL BE RAN AS STATION LAB WITH GENETICS PROBLEMS

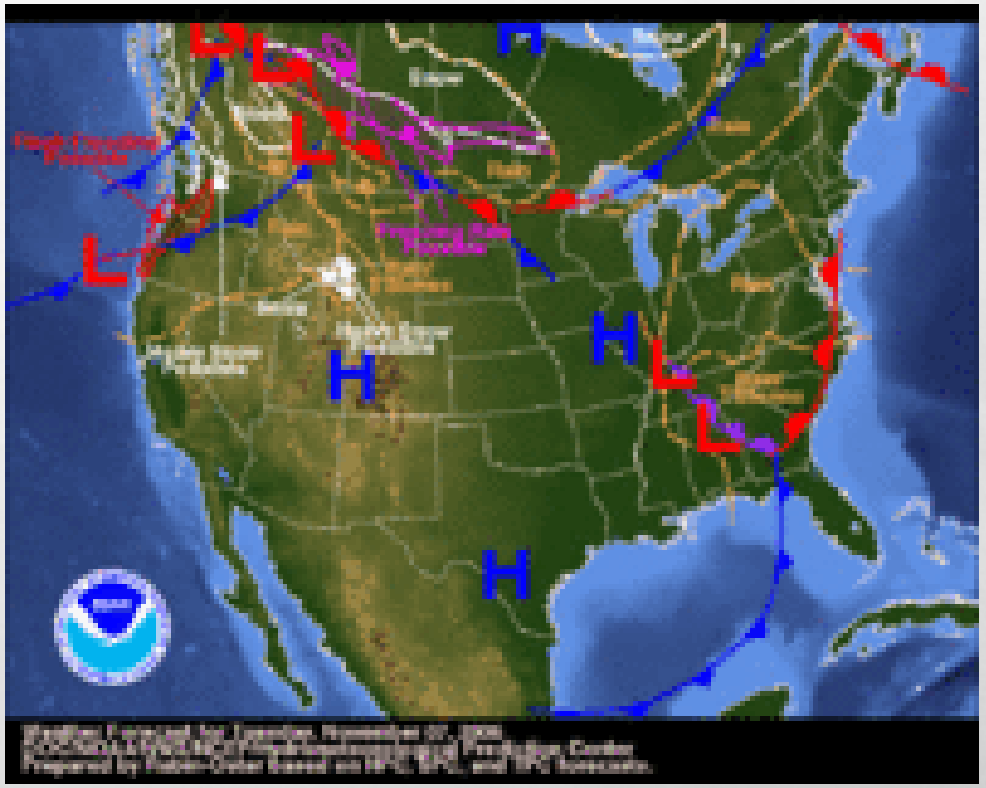


HERPETOLOGY – TEAM OF 2

- PARTICIPANTS WILL BE ASSESSED ON THEIR KNOWLEDGE OF AMPHIBIANS AND REPTILES.
- MAY BRING 2 INCH 3 RING BINDER OF NOTES AND CHARTS
- EACH TEAM MAY BRING ONE 2019 OFFICIAL NATIONAL HERPETOLOGY LIST

METEOROLOGY – TEAM OF 2

- THIS EVENT EMPHASIZES UNDERSTANDING OF BASIC METEOROLOGICAL PRINCIPLES WITH EMPHASIS ON ANALYSIS AND INTERPRETATION OF METEOROLOGICAL DATA, GRAPHS, CHARTS, AND IMAGES.

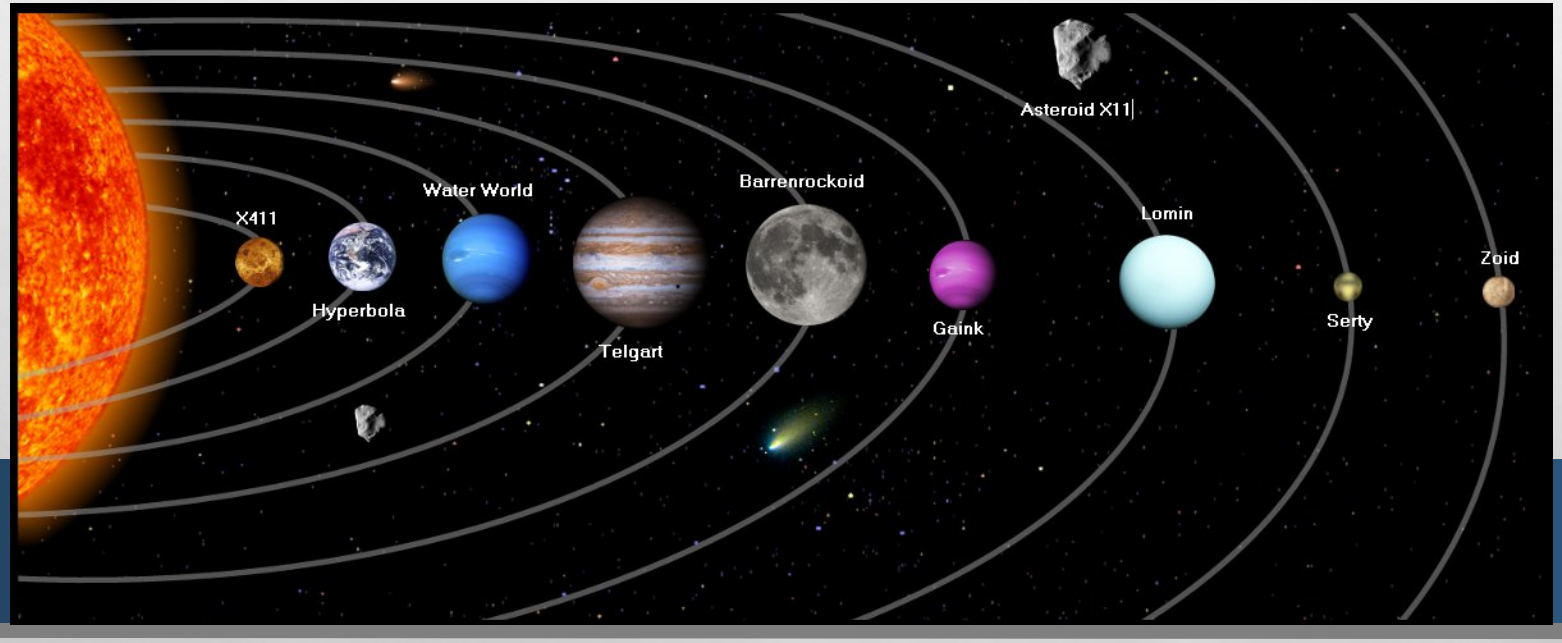


ROAD SCHOLAR – TEAM OF 2

- PARTICIPANTS WILL ANSWER INTERPRETIVE QUESTIONS THAT MAY USE ONE OR MORE STATE HIGHWAY MAPS, USGS TOPOGRAPHIC MAPS, INTERNET-GENERATED MAPS, A ROAD ATLAS, OR SATELLITE/AERIAL IMAGES.
- TEAMS MAY BRING A CALCULATOR, A PROTRACTOR, A RULER, USGS MAP SYMBOL SHEET, COLORED PENCILS, AND A 3 RING BINDER OF RESOURCE MATERIAL.

SOLAR SYSTEM – TEAM OF 2

- PARTICIPANTS WILL DEMONSTRATE AN UNDERSTANDING AND KNOWLEDGE OF THE GEOLOGIC CHARACTERISTICS AND EVOLUTION OF THE EARTH'S MOON AND OTHER ROCKY BODIES OF THE SOLAR SYSTEM.
- MAY BRING 2 8 ½ X 11 SHEETS OF NOTES



WATER QUALITY – TEAM OF 2

- PARTICIPANTS WILL BE ASSESSED ON THEIR UNDERSTANDING AND EVALUATION OF AQUATIC ENVIRONMENTS.
- INCLUDES FRESHWATER ECOLOGY, IDENTIFYING PLANTS AND INSECTS IN WETLANDS, AND BUILDING AND TESTING A HYDROMETER TO MEASURE SALT CONTENT IN OCEAN WATER