

2018-2019

Illinois Elementary Science Olympiad
Rules Manual

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A IS FOR ANATOMY

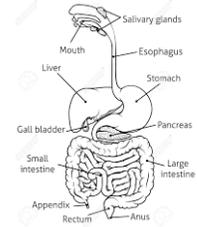
DESCRIPTION:

Teams will demonstrate knowledge of the human digestive system and proper nutrition.

A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 Minutes

EVENT PARAMETERS: Students may bring one 8.5 x 11 sheet with notes on both sides as a reference. Students should come with writing utensil.



THE COMPETITION:

1. This event will be run in a station format. Teams will rotate through stations (with equal time at each station) that assess any or all of the following topics:
 - a. Identify the major organs and body parts involved in the digestive process and understand the important job each body part has (Example: salivary glands ii. taste buds iii. teeth: incisors, premolars, molars, and canines iv. esophagus, stomach, liver, small intestine, large intestine v. kidney, urine, bladder)
 - b. Compare and contrast chemical and physical digestion.
 - c. Understand food and the benefits of vitamins & minerals. (Example: Vitamin List: A, B, C, D, E, K. Example Minerals List: Calcium, Iron, Magnesium, Phosphorus, Sodium)(For example Vitamin D helps with developing strong bones)
 - d. Be able to test for the presence of fats and oils using the paper bag test and know which foods tend to contain high amounts of fats and oils.
 - e. Know what foods are considered starches and the result of an iodine test on starch and non starch foods. For example, students may be shown pictures of the results of this test and asked to draw conclusions about the results.
 - f. Know how to use food labels to make better food choices, specifically identifying serving size, vitamin and mineral content, overall caloric content plus identifying where the calories are coming from (fat, protein, carbohydrate).
 - g. Know common foods in the major food groups: fruits, vegetables, grains, protein, dairy and where they fit in the food pyramid and in the USDA My Food Plate.
 - h. Understand the relationship among the amount of food energy (calories) consumed, weight, and metabolism.

SCORING:

Points will be awarded for the accuracy of responses. Ties will be broken by the accuracy or quality of responses to pre-selected questions chosen by the event leader.

BACKYARD BIOLOGIST: MAMMALS

DESCRIPTION:

Teams will be assessed on their knowledge of select IL mammals and their behavior and physical adaptations for survival and general natural history information.



A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 minutes

EVENT PARAMETERS: Students may bring a binder with one 8.5 x 11 sheet with notes on one side for each mammal as a reference. Students should come with writing utensil.

THE COMPETITION:

1. This event will be run in a timed station format. There will be at least as many stations as teams competing in a given running of the event. Teams will rotate through stations that assess any or all of the following topics:
 - a. Identification of the animal, by common name, from the designated mammal list. No more than 50% of the event will be identification.
 - b. Habitats where the organism typically lives, food requirements, migratory habits (if applicable), physical and behavioral adaptations the animal possess for survival, general characteristics and life history of the mammal, including protective status and consumption category (i.e. carnivore, herbivore, etc)
 - c. Vocabulary terms may include: adaptation, interdependence, various consumption categories for listed animals (i.e.),
2. Teams may bring, if they wish, a 3-ring binder up to 2 inches thick, with pages in any form, from any source.

SCORING:

Points will be awarded for the accuracy of responses. Ties will be broken by accuracy of pre-selected questions.

EXAMPLE QUESTIONS AT AN INDIVIDUAL STATION:

1. List the common name of the animal in the photo.
2. Is this animals a: A) carnivore B) herbivore C) omnivore
3. List the ecosystem type where this animal raises its young.
4. How many young does a female of this species give birth to at one time, typically?
 - a. Only b. 2-4 c. 4-6 d. more than 6

2019 Science Olympiad Backyard Biologist Mammal List

American badger
American mink
Beaver
Bobcat
Coyote
Deer mouse
Eastern chipmunk
Eastern cottontail
Eastern mole
Fox squirrel
Gray fox
Gray squirrel
Hoary bat
Little brown bat
Long-tailed weasel
Meadow jumping mouse
Meadow vole
Muskrat
Raccoon
Red bat
Red fox
River otter
Short tailed shrew
Southern flying squirrel
Striped skunk
Thirteen-lined ground squirrel
Virginia opossum
White-footed mouse
White-tailed deer
Woodchuck

CIRCUIT WIZARDRY

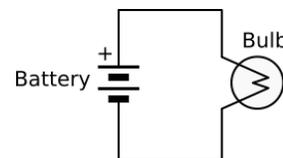
DESCRIPTION:

Students will compete in activities involving basic understanding of electricity, magnetism, and simple electric devices.

A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 Minutes

EVENT PARAMETERS: Students should come with writing utensil.



THE COMPETITION:

1. The competition will consist of both hands-on tasks and questions related to electricity, magnetism, and electrical devices such as light bulbs, batteries, and motors. The competition may consist of at least one task/question from each of the following areas:
 - a. Basic electrical DC circuit theory (e.g., concepts of voltage levels, current flow and direction, electrical pathways, volts, amperes, ohms, and ohms law).
 - b. Basic electrical device concepts (e.g., battery polarity, parallel v series wiring of components, light bulb and motor connections).
 - c. Basic electrical circuit construction/analysis (e.g., switches, power source, voltmeter measurements, light bulb/motor connections).
 - d. Basic magnetism concepts (e.g., North and South poles, Earth's magnetic field, electromagnet principles, magnetic v nonmagnetic materials).
 - e. Basic magnetic applications (e.g., use of a compass to determine directions/poles of a magnet, operation of an electromagnet, use of magnets in motors).

EXAMPLES OF CIRCUIT WIZARDRY STATIONS/QUESTIONS:

1. Students may be provided with circuit components including wires, batteries, and light bulb. Students could be asked to connect components in such a way that the bulb shines the brightest it can. Students may also be asked to draw and label a diagram of their circuit.
2. Students may be asked to connect components in such a way that the light bulbs light in a series or parallel circuit.
3. Students may be asked to draw and label a diagram of their circuit and asked to explain why this is the optimal configuration for this circuit.

SCORING:

Points will be awarded for correct answers and/or proper technique. An answer must be totally correct to receive credit. No credit for partially correct answers (if a circuit includes ABC and a team lists AB, it receives no credit.)

CRIMEBUSTERS

DESCRIPTION:

Students will be given a Crime Scene then be asked to solve the crime by identifying unknowns related to the Crime Scene, performing a Chromatography test, and matching fingerprints, shoe prints, and DNA from the Crime Scene to Suspects'. The lab results along with their explanation will determine their score. Event supervisor will provide time guidance throughout event to help students pace themselves.



A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 Minutes

SAFETY REQUIREMENTS: Students must wear goggles and a smock, lab coat or apron

EVENT PARAMETERS:

Students may bring with them these items:

- Small containers for mixing and testing
- Something to scoop and stir with
- Magnifying glass
- 1 8.5 x 11 two-sided sheet with list of unknowns and how to identify them. Can include anything they think will help them on the event.
- Something to write with
- Goggles

Note : Students not bringing these items will be at a disadvantage. The event supervisor will not provide containers, stirrers, scoops or magnifying glass. The Event Supervisor will provide all other needed supplies, including unknowns any chromatography materials, and

THE COMPETITION:

Qualitative Analysis:

Every team gets the same set of unknowns (evidence) from the “crime scene.” The evidence will be “analyzed” by performing tests such as dissolving or mixing, color, and odor. There will be no more than 5 unknowns. The unknown common materials will be taken from the following lists:

- **Solids:** Baking Soda, Powdered vitamin C, Salt, Sugar, Cornstarch, Powdered Alka Seltzer, Sugar, Yeast, Gelatin
- **Liquids:** Vinegar, Lemon Juice, Water

Chromatography:

Students will be asked to use 2 different pens to collect Chromatography samples to compare with an evidence sample.

Crime Scene Physical Evidence: (Provided by event supervisors)

Students will also demonstrate their skill in analyzing evidence from a variety of other sources such as:

- Fingerprints: Match sample crime scene fingerprints to suspect's fingerprints
- Shoe prints: Compare shoe prints
- DNA samples

Students will be given: (Provided by event supervisors)

- 5 or 6 sample unknowns in small ziplock bags or cups that are labeled
- A Crime Scene Story
- 3 Suspects with sample of their fingerprints, shoe prints, and a story including what they like or do that may relate to the crime scene and unknowns.
- 2 sample pens (could be at a station) and filter or chromatography paper to do 2 chromatograms. Pens will be identified with suspects and there will be a sample of a chromatogram from note found at crime scene for students to compare.
- Score Sheet

SCORING: See next page for sample

Crimebusters Sample Score Sheet

Identify the Unknowns (15 pts)

NOTES: Should take 25 minutes

Identify Unknown	What made you decide that	What suspect does it go to
1a.	b.	c.
2a.	b.	c.
3a.	b.	c.
4a.	b.	c.
5a.	b.	c.

Chromatography

NOTES:

- Set this up 1st, then go back after 20 minutes of powder testing to analyze
- Should take 5 minutes to set up and a few minutes to analyze

Points:

- 1 point for each test attached and done correctly
- 1 point for identifying right pen

Attach pen 1

Attach pen 2

Whose pen was used at the crime scene

Fingerprint/Shoe prints/DNA

NOTES: Should take 5 minutes

Whose fingerprints were found at the crime scene (can have up to 2)

Shoe prints 2 points for matching each sample print to each suspect (up to 2)

Conclusion

NOTES: Should take 10 minutes and students should have 5 minutes to clean up

Claim

We claim that the guilty person is _____

Evidence

(Students should use evidence from unknown id, fingerprints and shoe prints, should be 5 pieces of evidence to support guilty party)

The evidence that supports our claim is:

- 1.
- 2.
- 3.
- 4.
- 5.

Reasoning

- 1. _____ matches because
- 2. _____ matches because
- 3. _____ matches because
- 4. _____ matches because
- 5. _____ matches because

_____ isn't guilty because _____

_____ isn't guilty because _____

EXPERIMENTAL DESIGN

DESCRIPTION:

Students will be given a question that can be tested, and supplies to design an experiment to complete testing.



A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 Minutes

SAFETY REQUIREMENTS: Students must wear goggles and a smock, lab coat or apron

EVENT PARAMETERS:

Students must bring writing utensils. The Event Supervisor will provide everything necessary for the event including a lab sheet.

THE COMPETITION:

Sample ideas:

1. How does the height of a ramp affect the speed a car rolls down the ramp?
2. Does the height you drop a ball from affect how many bounces it takes
3. Which bounces higher a tennis ball, golf ball, or ping pong ball?
4. If you add baking soda to vinegar, will it change temperature? Does the amount of baking soda matter?

Students will need to know:

- What is their independent variable (what are they testing)
- What is their dependent variable (how will they measure their results)
- What their constants are
- Write a procedure
- How to complete data table. They will test each version of independent variable 3 times
- How to use evidence to accept or reject their claim

SCORING:

Score sheet next page

Experimental Design Sample Score Sheet

Question to answer is provided

1. Students make a claim of what will happen in their test. (1 point)
2. Students list 3 levels of independent variable (3 points)
 - 1.
 - 2.
 - 3.
3. Students explain their dependent variable (how they will measure their results) (1 point)
4. Students will explain their constants (all the things they are keeping the same) (at least 3 items for 3 points)
 - 1.
 - 2.
 - 3.
5. Students will write their procedure (at least 5 steps up to 5 points)
 - 1.
 - 2.
 - 3.
 - 4.
 - 5.
6. Data Table

Independent Variable	Trial 1	Trial 2	Trial 3	Average
1.				
2.				
3.				

7. Our claim was right or wrong (circle one) (1 point)
We can say that because our evidence showed that (up to 3 points for using evidence to support statement)

FOSSIL FRENZY

DESCRIPTION:

Teams will be assessed on their knowledge of geologic time, fossils and the fossilization process.

A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 minutes

EVENT PARAMETERS:

Students must bring writing instruments. Teams may bring ONE 8.5" x 11" two-sided page of notes with information in any form from any source (can gather from National Geographic, field guide or other sources) Event Supervisors will provide a hands-on event with all necessary items, objects, materials, questions, and response sheets for participants to complete stations.

THE COMPETITION:

1. This event will be run as a station test. Teams will rotate through stations of equal time periods that assess any or all of the following topics:
 - a. Be able to identify conditions required for a plant or an animal to become fossilized.
 - b. Be able to distinguish between modes of preservation: petrification, mineral replacement, cast/mold, imprint, encasement in amber/copal, mummification, freezing, entrapment in tar/asphalt.
 - c. Be able to make inferences about dinosaurs from footprints, teeth, body structures and coprolites.
 - d. Understand the Geologic Time Scale and be able to distinguish between era, period, and epoch and know where the dinosaurs and humans fit in on that time scale.
 - e. Identification of the dinosaurs & fossils on the Official Fossil list from pictures, replicas, actual specimens, descriptions, etc.
 - f. Dinosaurs: distinguish between carnivore, herbivore, and omnivore. Identify the geologic time period (Triassic, Jurassic, or Cretaceous) the dinosaur is from.
 - g. Identify the environments: marine, terrestrial, freshwater, etc. for all species listed on the Official Fossil List.

SCORING:

Points will be award for the accuracy of responses. Ties will be broken by the accuracy or quality of answers to pre-selected questions chosen by the event supervisors.

EVENT RESOURCES:

1. <http://www.discoveryeducation.com/teachers/free-lesson-plans/discovering-dinosaurs.cfm>
2. <https://pbskids.org/dinosaurtrain/fieldguide/>
3. www.aurorafossilmuseum.org
4. <http://sciencenetlinks.com/lessons/fossils-1-fossils-and-dinosaurs/>
5. <http://www.sheppardsoftware.com/scienceforkids/dinosaurs/fossils.htm>
6. National Fossil Day: <https://www.nps.gov/subjects/fossilday/index.htm>

BIG IDEA: What can fossils tell us about the way/how they lived.

STANDARD ALIGNMENT: Sci.4-ESS2-2, Sci.4-ESS3-2, Sci.4E.2.

JUNK CARS

DESCRIPTION:

This event will consist of contestants constructing, on site and within a specified time period, a four wheeled vehicle out of a miscellaneous collection of materials supplied by the event supervisor(s), and then release them to roll down a ramp with the objective of their vehicle rolling the longest distance in a straight line.



A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 Minutes

THE COMPETITION:

Each team will be given the same set of materials. Competitors may supply their own scissors and measuring device. Using those materials only, within a 20-25 time span, they will construct a four wheeled vehicle, of any dimensions, consisting of a frame or body, and two separate axles with two wheels each. All materials do not have to be used. The vehicle **MUST** have two axles and four wheels, connected and separated by some form of frame or chassis. There are otherwise no restrictions on, e.g., diameter of wheels, overall length, minimum or maximum mass, etc., other than what is limited by the types of materials provided. Competitors may, if they choose, use provided materials as mass or balance for the vehicle. At the end of the construction period, all vehicles will be submitted to the event supervisors, and identified as built by which team. The event supervisors shall judge that the vehicles meet the construction rules above. If there is some construction violation, the vehicle may still compete, but in a lower tier of competitors.

In an order randomly assigned, each team will release their vehicle down a ramp from a designated “start” line marked on the ramp. The distance will be measured from a spot marked at the center of the base of the ramp to the center of the leading or forward side of the vehicle at its stopping place. Each team will be allowed two releases if they wish, but only the longer distance measured will be used for the competition. Competitors may adjust positioning or attachment of the parts of their vehicle between releases (such as tape) but may not alter the arrangement of parts or add to the construction of the vehicle in any other way.

The ramp may be of any length at least one meter or longer, should be set at an angle of between 20 and 30 degrees slope, and allow for a smooth movement onto the floor surface. Competitors shall be allowed to see the ramp and floor surface at the beginning of the competition.

SCORING:

Vehicles will be ranked by the longest measurement. If the vehicle should come apart during movement, such as loss of a wheel, the distance will be measured to the point of the first parts lost. In case of a tie, the vehicle which stops closest to the center line perpendicular to the base of the ramp will be the higher ranked vehicle, for which purpose such center line will be marked in advance with tape.

MYSTERY ARCHITECTURE

DESCRIPTION:

At the beginning of the event, teams will be given a bag of building materials and instructions for designing and building a structure that can be tested for supporting a load.

A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 Minutes

EVENT PARAMETERS:

Each student must bring safety goggles and may bring a scissors and a ruler. No other materials, tools, notes or resources are permitted.

THE COMPETITION:

1. Each team will be given a bag containing the same materials. Examples of materials are: paper cups, drinking straws, paper clips, string, tape, paper, thumbtacks, and Popsicle sticks. Materials are not limited to this list. Only those materials contained in the bag may be used to build the structure. The bag may not be used. No other materials or adhesives may be part of the finished structure.
2. The instructions from the Event Supervisor will identify the primary testing measurement of the structure, and a secondary one for breaking ties, such as whether the structure must support a load (and for how long). The instructions will also state how measurements will affect rank (Tier one holds greatest mass for longest time, tier 2 could be holds the most mass, or time mass is held based on judges discretion, but will be identified ahead of time)
3. If the structure must support a load, a separate load of the same size and weight as used for testing will be provided to each team so they can test their structure before the judges. Judges may use one "official" load for testing all devices.
4. Some examples of structures and measurements are: The tallest tower to hold a ball at the top, the longest bridge, the longest cantilever to hold a chalkboard eraser at the end, or the smallest boat/barge to float holding a small weight. Structures are not limited to these examples. Tiebreaker examples: the smallest width of a tower base or width of bridge or cantilever. The students will not know the assignment until they begin the competition.
5. The team of students will have approximately 30 min. to build, set by the Event Supervisor.
6. Unless specifically stated in the instructions, structures must be freestanding and may not be attached to a tabletop, floor, ceiling or other support.

SCORING:

Devices will be ranked according to the following:

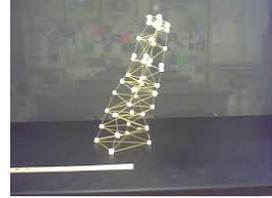
1. The measurements specified in the building instructions will be measured and recorded as accurately as possible by the judges prior to placing any required load on the structure.
2. Structures that are required to support a load will be tiered based on whether or not they support the load for the specified time. Structures that support the load will be ranked higher than all structures that do not.
3. Structures within a higher or lower group will be ranked by the primary measurement specified
4. The specified tiebreaker measurement be used to break any ties.

We will identify choices of build at least one week before competition

NOODLING WITH TOWERS

DESCRIPTION:

Teams will be asked to build a tower from the supplies provided by the event supervisor. The goal is to construct the tallest tower.



A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 Minutes (20 Minutes to build - 25 Minutes to measure)

MATERIALS:

- 15-20 pieces of one of the following types of commercially available pasta (spaghetti, fettuccine, angel hair, vermicelli or linguine)
- 1 meter of string
- 1 meter of masking tape
- 1 standard-size marshmallow
- A pair of blunt-ended scissors
- Safety goggles

THE COMPETITION:

1. This event will be run in two segments a) a building time b) a measurement time.
2. Teams may bring no materials into the competition space. All materials will be provided by the event supervisor. Pasta will not be altered in any way – the individual pieces of pasta will be straight from the package. (When students start they will have the same number of pieces of pasta with the same length (as much as possible))
3. Teams will have 20 minutes to build the tallest tower using the materials provided by the supervisor.
4. The towers can be of any design but must be free-standing and be completed with the marshmallow attached to the top.
5. There is no requirement to use all the materials provided.
6. Measurement of each tower will be from the **floor** (will build on floor not table) to the uppermost edge of the tower. (Note: if the pasta bends under the weight of the marshmallow, the upper edge of the marshmallow is the point of measurement, not the pasta.)
7. Teams will be spread throughout the room providing space to work, so as to not interfere with other teams.
8. Teams may remain present for the measurement segment of the event but must remain in the area designated by the event supervisor.

SCORING:

1. Towers will be measured from the floor to the uppermost edge of the tower.
2. Tiebreakers:
 - a. **FIRST TIE BREAKER:** The team with the tallest tower measurement from the floor to the uppermost piece of pasta wins the tie. (Assuming one team has higher marshmallow and one pasta) If pasta pieces are both highest and same then.....
 - b. **SECOND TIE BREAKER** (if needed): The team with the largest sum total measurement of all unused pieces of pasta or string (in centimeters) wins the tie. (They got best height with least amount of material) If 1 and 2 are tied then.....
 - c. **THIRD TIE BREAKER** (if needed): The team with the largest distance, when measuring from the floor to the nearest edge of the tallest marshmallow, wins the tie.

READY AIM FIRE

DESCRIPTION:

Build a catapult capable of firing an object (To be determined) at least 1 meter at a regulation target.



A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 Minutes (30 Minutes to build)

EVENT PARAMETERS:

Each student must bring safety goggles

THE COMPETITION:

1. Each team will be given a bag containing the same materials which includes popsicle sticks, tongue depressors, rubber bands, plastic spoons, and straws.
2. There will be 3 targets:
 - a. Target #1 has the bullseye exactly 1 meter from the start line.
 - b. Target #2 has the bullseye exactly 2 meters from the start line.
 - c. Target #3 has the bullseye exactly 3 meters from the start line.
3. Each team will have 30 minutes to build and test their catapult.
4. Each team will be given 3 objects to launch and must declare which target they are aiming at before launching the object.

SCORING:

1. Total Points = Points in Launch 1 + Points in Launch 2 + Points in Launch 3
2. All points are based on where the launched object lands **at initial impact**
3. Points are awarded if the launched object lands in the target that the student designated as the target (either Target #1, Target #2, or Target #3). The points are awarded for each target as follows:
 - a. Objects fired at Target #1 will get the points on the target where the objects land plus 15 points for landing in the X ring
 - b. Objects fired at Target #2 will get 2x the points on the target where the objects land plus 30 points for landing in the X ring.
 - c. Objects fired at Target #3 will get 3x the points on the target where the objects land plus 45 points for landing in the X ring.
4. No points are awarded if the object launched lands on a target other than the one declared as the target.
5. When a launched object lands on a line between two scoring rings, the higher score is awarded except in the case of the X ring where the object must be entirely within the ring.
6. TIEBREAKERS:
 - a. Tiebreaker #1: The most points from Target #3
 - b. Tiebreaker #2: The most points from Target #2

WILD WEATHER

DESCRIPTION:

This competition will test a team's ability to understand, identify, explain, interpret and predict **severe weather events** from the use of weather maps, photographs, diagrams and data.

A TEAM OF UP TO: 3

APPROXIMATE TIME: 45 Minutes

EVENT PARAMETERS:

Teams must bring writing instruments. Teams may also bring on 8 1/2 X 11 sheet of paper, written on both sides.

THE COMPETITION:

The competition will consist of 10 to 15 stations of no more than 3 minutes per station. Each station may have one or more maps, photographs, diagrams or graphs, listing or illustrating weather information or phenomena, and ask teams to answer multiple questions, recording their answers on a sheet provided. The event will focus on **thunderstorms, tornadoes, hurricanes, lightning, and hail**. Teams will be asked about the following:

1. Have a knowledge and understanding of basic weather terms and factors, such as humidity, pressure, temperature, wind, cloud types, forms of precipitation, cold and warm fronts and the names of instruments that measure humidity, wind speed ect.
2. Identify, explain, interpret and predict conditions relating to severe weather events by their size and the area they cover, cloud types, winds, precipitation, locations where they can form and occur, damaging effects, and unique safety concerns.

SCORING:

The winner will be the team which achieves the highest score. If questions are of unequal point value, the points will be indicated. Ties will be broken with specific questions that will be compared for correctness between the teams tied.

RESOURCES:

These web pages may be useful as study resources for this event. Note that all questions will not be based only on these resources.

Patterns - <http://www.noaa.gov/resource-collections/weather-systems-patterns>

Clouds - <https://scied.ucar.edu/shortcontent/how-clouds-form>

Cloud Types - <https://scied.ucar.edu/cloud-image-gallery>

Tornadoes - <http://www.noaa.gov/resource-collections/tornadoes>

Hurricanes - <http://www.noaa.gov/resource-collections/hurricanes>

Climate - <https://scied.ucar.edu/shortcontent/climate>

Others: <http://eo.ucar.edu/webweather/>, <http://www.weatherwizkids.com/>

EXAMPLE QUESTIONS:

A. A weather map movement of a cold front across the Central Plains, and extreme temperature differences on the opposing sides of the front. Students are asked to indicate which of these kinds of severe weather could occur: thunderstorm, hail, tornado, hurricane? (All but a hurricane are possible.)

B. Students are shown a large map of the eastern US and Atlantic, and are asked to identify which of several marked spots is the most likely for a hurricane to form (off the NW coast of Africa). Which direction (N, S, E or W) will it most likely move from that spot? (West).

C. Students are shown a photograph of storm damage and asked which kind of storm was most likely to cause it (e.g., a tornado, based on the scale and pattern of damage, and the path of the damage).

D. Students are shown a diagram of an outdoor scene, and asked where in the scene would be safest to go in case of lightning - lay in a depression, stand under a tree, under a group of trees, or in a car? (In the car.)

WRITE-IT DO-IT

DESCRIPTION: This event tests competitor's ability to clearly communicate in writing and follow written directions. One student/team of students will write a description of an object and how to build it, and then the other will attempt to construct the object from this description.



A TEAM OF UP TO: 4 (maximum of 2 writers and 2 builders)

APPROXIMATE TIME: 45 minutes (25 minutes to write and 20 minutes to build)

EVENT PARAMETERS:

Students must bring a writing utensil. Event Captain/Supervisor will provide paper and any other needed supplies.

THE COMPETITION:

A. Students are shown an abstract 3D object built from (but not limited to)...

- | | | | |
|--|----------------|-------------------------------|-------------|
| ✓ blocks | ✓ straws | ✓ push pins | ✓ Styrofoam |
| ✓ popsicle sticks | ✓ Tinker Toys | ✓ Legos | ✓ K'NEX |
| ✓ Construx | ✓ Lincoln Logs | ✓ science materials/equipment | |
| ✓ other inexpensive common materials (cups, pipe cleaners, plates, straws, etc.) | | | |

B. The object shown will be the same object for all teams (either one for the group to observe or one for each individual team).

C. Students are allowed to make a "secret code word" for the materials if they chose to.

D. A student/team of 2 students have twenty-five (25) minutes to write a description of the object and how to build it. Only numerals, words and single letters may be used. Symbols, drawings, and diagrams are not allowed with the exception of common punctuation and editing symbols. All abbreviations (not symbols) must be defined either at the beginning or when the abbreviation is first used.

E. The event Captain will pass the description to the remaining member(s) of the team in another room who will take the written description and attempt to build the original object in twenty (20) minutes).

F. No diagrams are allowed and no verbal communication is allowed during passing.

SCORING:

A. The team that builds the object nearest the original and has properly written instructions is declared the winner.

B. Points will be given for each piece of material placed in the proper connection and location compared to the model. For each object, one point will be given if placed in the proper location, one point for orientation, and one point for relativity to other objects.

C. Pieces that are connected correctly beyond the incorrect connection will be counted in the score. No penalty will be assessed for parts that are not used.

D. Scoring violations: Use of diagrams or drawings will result in disqualification. A penalty will be assessed for each minor infraction, such as, unlabeled abbreviations or improper use of symbols or codes.

TIEBREAKER:

Time may be used as a tiebreaker.

