



MESA DAY CONTEST RULES 2001-2002

Brain Power

- LEVEL:** Senior High School
- TYPE OF CONTEST:** Individual/Team
- COMPOSITION OF TEAMS:** 1 - 2 students per team
- NUMBER OF TEAMS:** 3 teams per Center
- SPONSOR:** Vonna Hammerschmitt, Director, CSU Fullerton MSP Center
- OVERVIEW:** Students will build a model of a bisected head and will answer questions drawn from related assigned reading provided in the MESA Day curriculum.
- MATERIALS:** The following materials will be provided by the student:
- “dried food items” with which to build their model

RULES:

- 1) Designated materials must be used in the model's construction.
- 2) The model should meet minimum and maximum size requirements.
- 3) The model should be clearly labeled.
- 4) The hand drawn diagram of the bisected head should be displayed on the model.
- 5) A materials table should be attached to the model.
- 6) The competitors will attempt to answer five questions.
- 7) An audience **will not** be allowed during the judges' questioning session.

JUDGING:

- 1) The competition will be judged in two parts. Judges will receive a score sheet.
- 2) The first element judged will be the model of the bisected head.
- 3) One point will be awarded for each of the following: **(3 points maximum)**
 - a) The display including the stand and all of its components should fit into a space that is 3 ft. high x 3 ft. wide x 2 ft. deep. The model of the brain is no smaller than 2 ft. high x 2 ft. wide.
 - b) The display is freestanding at the time of judging.
 - c) The display has a clearly labeled (14 required elements), hand-drawn diagram of the bisected head on the front.

- 4) The designated materials for 2001-2002 are referred to as “**dried food items.**” These include items commonly found in the average household such as: pasta, rice, cereal, dried fruit, etc. **(NO CANDY). Use of any other items will result in disqualification.** Points will be awarded to models that most fully incorporate a variety of designated materials. A table of all materials utilized and how the material was acquired should be included in the display. A sample follows:

BRAIN POWER – MATERIALS TABLE

Structure	Item	Acquired
1. Frontal Lobe	Elbow macaroni	Kitchen Cupboard
2. Cranium	Dried cranberries	Box in refrigerator
3.		
4.		

- 5) One point will be awarded for each of the required elements listed below (0.5 points if the item is present and an additional 0.5 points if the item is labeled, **14 points maximum**)

Item	Present (0.5 points)	Labeled (0.5 points)
Frontal Lobe		
Parietal Lobe		
Temporal Lobe		
Occipital Lobe		
Limbic Lobe		
Cranium		
Cerebrum		
Corpus Collosum		
Cerebellum		
Cerebral Cortex		
Brain Stem		
Mid Brain		
Pons		
Medulla Oblongata		

- 6) Bonus points may be awarded for additional structures that are present, clearly labeled, and included in the materials table (1 point per additional structure, **6 points maximum**).
- 7) Points will be awarded for accuracy. **(4 points maximum)**
- 8) Points will be awarded for creativity. **(4 points maximum)** Does the model display characteristics of originality and creativity in terms of overall composition? Has a creative use of materials been demonstrated?
- 9) The second element judged will be the students’ understanding of brain anatomy. **(10 points maximum)**
- Students will receive a reading packet and a list of questions that will be asked at the competition.
 - Judges will determine the order of competition.
 - Students will randomly select 5 questions from a jar.
 - Each correct answer will be awarded 2 points.
 - There will be a set of 5 previously **unpublished** tiebreaker questions available on the day of competition.

AWARDS: Awards will be given for 1st, 2nd and 3rd place.

ATTACHMENTS: Questions & Answers
Model Score Sheet
Judging Guidelines

QUESTIONS FOR BRAIN POWER CONTEST
Senior High School

1. Which lobe of the brain is important for vision?
2. Which lobe of the brain is important for the sense of touch?
3. Which lobe of the brain is important for hearing?
4. Which part of the brain is important for reasoning?
5. The temporal lobe is located on which part of the brain?
6. The occipital lobe is located on which part of the brain?
7. The parietal lobe is located on which part of the brain?
8. The frontal lobe is located on which part of the brain?
9. What is the approximate weight of an adult brain?
10. What is the approximate size of the brain?
11. Which lobe of the cerebrum controls motor functions?
12. Define reflex.
13. Define seizure.
14. Define amnesia.
15. Define migraine.
16. What is the Latin name for brain?
17. What is the job of the Mid Brain?
18. Which side of the brain contains the nerves for the left side of the body?
19. Which side of the brain contains the nerves for the right side of the body?
20. Which lobe of the brain is primarily concerned with emotions and memory?
21. Which section of the brain connects the cerebral hemispheres?
22. Which section of the brain is important for coordination of movement?
23. What is the function of the medulla oblongata?
24. What does “pons” mean?
25. What happens to the brain after a meal rich in carbohydrates?
26. Norepinephrine, released after a protein-rich meal, has what effect on the brain?

ANSWERS FOR BRAIN POWER CONTEST
Senior High School

1. Occipital Lobe
2. Frontal Lobe
3. Temporal Lobe
4. Parietal Lobe
5. Right and left hemisphere above the ear
6. Posterior area or back of the brain above the cerebellum
7. Near the back and top of the head
8. Anterior area or front of the brain
9. Three pounds
10. The size of 2 fists
11. Frontal lobe
12. An automatic, involuntary response to some change either inside or outside the body
13. An involuntary shaking of the body or any of its parts.
14. Partial or total memory loss usually caused by a brain injury
15. A sudden, severe headache characterized by pain on only one side of the head.
16. Cerebrum
17. Provides connections from the cerebrum to the spinal cord
18. The right side of the brain
19. The left side of the brain
20. The limbic lobe
21. The corpus callosum
22. The frontal lobe
23. It controls the basic life functions; muscles of respiration, heart rate and blood pressure.
24. It means "bridge."
25. It increases the serotonin and induces a relaxed or even sleepy state.
26. It promotes increased alertness, assertiveness and the ability to make decisions under pressure.

MODEL SCORE SHEET FOR BRAIN POWER CONTEST
Senior High School

Copies of this score sheet will be provided by the MESA Day Host Center.

Competitors: _____

Center & School: _____

Judges: _____

Part I: General Model Criteria (3 points total)

One point for each criterion met:

Size _____ Freestanding _____ Diagram _____ **Subtotal for Part I** _____

Part II: Specific Model Criteria (14 points, plus 0-6 bonus points, total)

Item	Present (0.5 points)	Labeled (0.5 points)
Frontal Lobe		
Parietal Lobe		
Temporal Lobe		
Occipital Lobe		
Limbic Lobe		
Cranium		
Cerebrum		
Corpus Collosum		
Cerebellum		
Cerebral Cortex		
Brain Stem		
Mid Brain		
Pons		
Medulla Oblongata		
TOTAL		

Bonus Points: One point per additional structure present, clearly labeled and included in materials table
(0-6 points total)

Item	Bonus Points
TOTAL	

Subtotal for Part II _____

Part III: Overall Accuracy of Model (0-4 points total)

- 1. Accuracy of the overall model _____
- 2. Accuracy of the individual parts _____

Subtotal for Part III _____

Part IV: Creativity (0-4 points total)

- 1. Overall creativity of model _____
- 2. Creative use of materials _____

Subtotal for Part IV _____

Part V: Brain Power Questions (10 points total)

Up to 2 points for each answer.

Question 1 _____

Question 2 _____

Question 3 _____

Question 4 _____

Question 5 _____

Subtotal for Part V _____

GRAND TOTAL _____

JUDGING GUIDELINES FOR BRAIN POWER CONTEST

Senior High School

- **Model Scoring Sheets**
- **Set of answers to the Brain Power Questions (set for each judge)**
- **A jar containing the Brain Power Questions cut up and folded**
- **Pens**
- **Calculator to total score sheets (optional)**
- **Ruler or tape measure**

How To Administer The Brain Power Competition:

The main focus of the “hands-on” competition is the building of a model of the brain prior to the competition. In addition, students will be given reading materials on the brain as well as questions, prior to the competition. A maximum of 5 questions will be chosen randomly on the day of the competition and students will be expected to provide answers within a set time limit (30 seconds).

The displays of the brain are to be judged prior to inviting the students into the room for the questioning phase of the competition. As indicated on the scoring sheet, displays should meet minimum and maximum standards, be freestanding and have a clearly labeled, hand-drawn diagram of the bisected head displayed on the front. Points are awarded for displays that meet these specifications. Displays that do not meet these specifications are **not to be disqualified**. Dried food items (no candy) are to be used in the construction of the model of the brain. **Use of any other items will result in disqualification.** Fourteen elements should be present and labeled in the model of the brain. One-half point is given if the element is present and one-half point if it is labeled. An additional 6 points may be awarded for additional structures that are present, clearly labeled and included in the materials table. Where appropriate, constructive comments may be written on the scoring sheet. It is important to remember that scoring sheets are returned to the students.

Teams should be called in individually for the questioning phase of the competition so that teams who are questioned later in the competition do not have the unfair advantage of hearing the answers provided by preceding teams. A team member will draw a question from the jar, inform the judge of the number of the question and read the question aloud. The team will then have 30 seconds to answer the question. Each correct answer is worth 2 points. Partially correct answers may receive partial credit at the judges' discretion.

When all teams have completed the questioning phase of the competition, judges should convene for the scoring portion of the competition. No students should be present during scoring. After totaling the scores of all teams, 1st 2nd and 3rd place teams should be determined. All results, scoring sheets and any other materials should be submitted to the MESA Day Host Center.