

ELECTROGAMES*

OBJECTIVES:

- To introduce ROCAME students to the wonders and excitement of the fields of electricity and electronics.
- To provide hands on experience in reading and understanding symbols, schematic diagrams and wiring circuits of various descriptions.
- To expose students to systematic note taking, drawing schematic diagrams, utilizing scientific and mathematical based problem solving and team work.

DESCRIPTION OF JAMBOREE: (GENERAL)

This event will test the team's knowledge of basic electrical and electronic principles. Each team member should prepare a notebook, but the official entry can be submitted as a single document (digital). A written test on basic electricity / electronics will be given to each student during the competition. Finally, the team will be given a schematic diagram for an electrical circuit. Judging for this circuit will be based on time of completion and successful operation.

Covid-19 Changes – No resources (EG kit, notes, etc.) are allowed with this test because the information for circuit building activity will be provided.

NUMBER OF PARTICIPANTS: 2

APPROXIMATE TIME: 50 minutes

EVENTS COMPETITIONS:

NOTEBOOK: (Maximum Limit of 20 Pts. Increased to 40 pts – COVID-19 Change)

Each member of the team **must** keep a comprehensive notebook which will include definitions, symbols, and a schematic design of circuits built along with a description for each one. All notebooks must include dates, materials used, results, and time spent for each practice session. Students are encouraged to build as many circuits as possible and draw diagrams in their notebooks. **[COVID-19 Note: Information in individual notebooks should be combined into a single file and submitted digitally to the Board by a designated date.]**

WRITTEN TEST: (Maximum of 40 Pts Remains the Same)

Questions for the written test will be based upon information in the user's manual for the 75 in 1 kit (~ 20 CFCC sample questions available) and resources (YouTube videos and handouts on the Ohm's Law Equation and Color Code Table for Resistors). The test score for each team member will be added and then divided by 2 to obtain the team's final score.

CIRCUIT BUILDING: (Maximum Limit of 40 Pts. Decreased to 20 pts. – COVID-19 Change)

It is not necessary for students to have a circuit board or any other part of the EG kit. A circuit diagram **with labeled (numbered) parts** will be provided for students to create a wiring sequence (ex. 3-5, 6-108, etc.) Write the sequence for a complete or closed circuit.

COVID-19 Update on 4/5/2022 by W. Flythe

SAMPLE LABORATORY REPORT FOR ROCAME NOTEBOOKS*

[*Note: Although notebooks must be prepared for only two events--Robotics and ElectroGames, an IMAGINARY event (Lemon Drop) is used as an example for a report. Students should include the "Who, What, When, How, and Results".]

Training Session – Lemon Drop Students: Mary Smith and James White Date: 11/10/21

Materials: Large lemon, goldenrod paper (one sheet), ten straws, eight popsicle sticks, string (one meter), masking tape (one meter), rubber bands (three), yard stick, scissors, and ladder (10 feet).

Activity: We met after school in Mrs. Jones' classroom. **Dr. William Flythe, ROCAME training coordinator**, gave us tips on building a protective device for a large lemon. All of the materials were received in a bundle except for the sting and tape. Mary cut the straws in half while James obtained one meter each of string and tape from Dr. Flythe. We were allowed **20 minutes** to build the device. The paper was wrapped around the lemon. The tape, string, and rubber bands were used to place the straws and sticks around the lemon.

Results: James took turns with students from the other teams climbing the ladder and dropping our protected lemon from two feet. Since our lemon did not leak, we moved to the next level (three feet) with one other team. **Both lemons leaked, but we lost the tiebreaker. The other team won first place because its device landed closer to the "bullseye".** We can still compete in the BC Jamboree because two teams are allowed from each school.

William Flythe 11/11/2021