San Ramon Valley Science Olympiad

2022 - 2023

COACH SEMINAR

Our Team

Executive Director: Arav Bhattacharya

Associate Director: Sundar Subramanian

Operational Sector: Pranav Hegde, Fatimah Hussain, Pranav Vudumula

Build Events Committee: Praveer Balaka, Ayan Bhatia, Auron Bhattacharya, Ansh Gandhi

Theory Events Committee: Akshay Kannan, Ali Siddiqui, Megha Guntuku, Arush Jain

Instant Challenge Committee: Adviti Aleti, Nikitha Bangalore

2022 - 2023 SRVSO Teams - 48 total

Bella Vista: 3

Bollinger Canyon: 5

Country Club: 3

Coyote Creek: 5

Creekside: 1

Golden View: 1

Greenbrook: 1

Hidden Hills: 4

Live Oak: 6

Montevideo: 5

Neil Armstrong: 1

Quail Run: 6

Sycamore Valley: 1

Twin Creeks: 3

Vista Grande: 2

Walt Disney: 1

Instead of email updates, we will be sending bi-weekly **Remind** announcements!
How to join: text “@srvso22-23” to 81010 to join the Remind for SRVSO!

Need more help joining Remind? Watch this YouTube video for assistance (see next slide):
https://m.youtube.com/watch?v=DLP QYSOj4


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Event Pairings

The following events are paired together, meaning that the same two competitors must complete both events in the pair:

Pairing 1

- **Weather or Not**
- **Egg Drop**

Pairing 2

- **We've Got Chemistry**
- **Trebuchet**

Pairing 3

- **Food For Thought**
- **Mission Possible**

How to Prepare for Events

Study/practice using resources from the SRVSO website!

Click on the “Resources” tab of the website to access resources for all events, including:

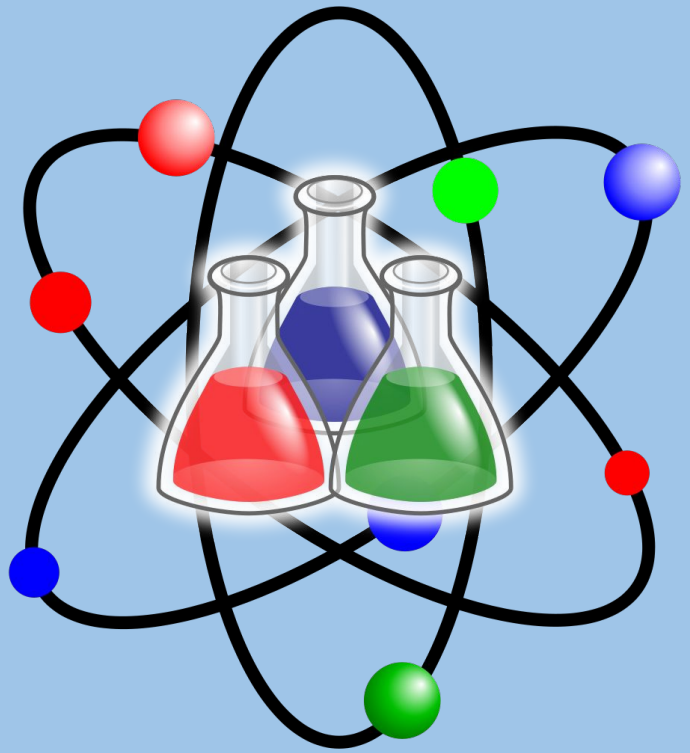
1. Event rules / descriptions
2. Scoring criteria
3. Practice tests (for Theory and Instant Challenge)

2022-2023 Theory Events

Weather or Not

Food for Thought

We’ve Got Chemistry



Competition

For all theory events, competitors will be working in pairs (2 competitors per event) and will have 30 minutes to complete the test.

The tests will consist of 15 multiple choice questions (MCQ) and 5 free response questions (FRQ):

5 critical thinking MCQ

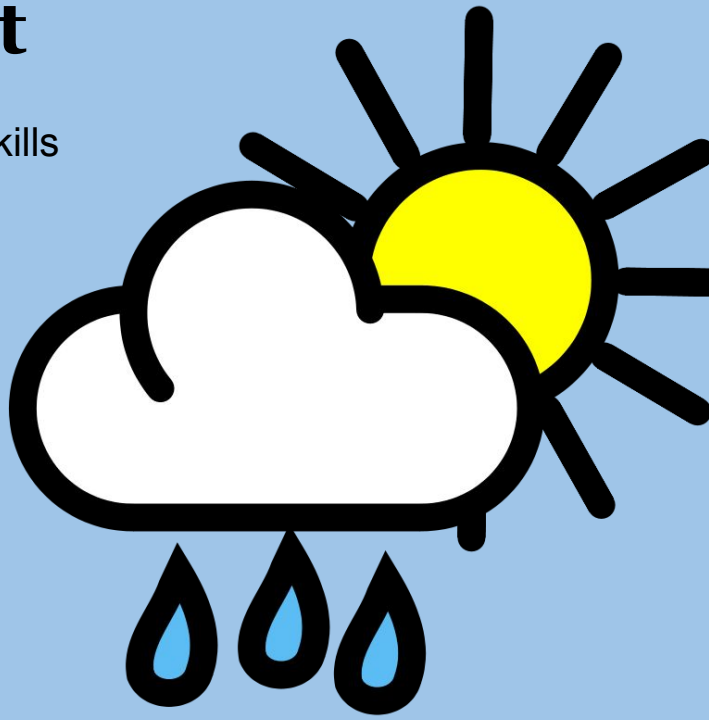
10 general knowledge MCQ

5 critical thinking FRQ

FRQs are worth 3 points and MCQs are worth 1 point

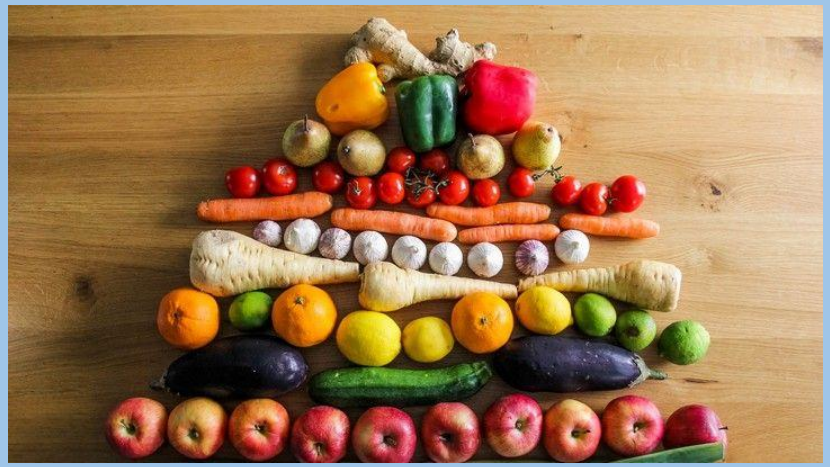
Theory Event: Weather or Not

- This Theory event tests the participants' critical thinking skills involving logic and vocab on weather and systems.
- Topics:
  - Weather
  - Sun/Heat systems
  - Earth weather systems
  - Water cycles
  - Weather instruments
  - Weather storms and disasters
- Ultimately develops the participants' problem solving and weather/Earth creativity.
- Students must think critically to answer questions regarding the Earth's weather, heat, water cycle, energy, and water resources.



Theory Event: Food for Thought

This theory event will test participants' knowledge of macromolecules and food groups.

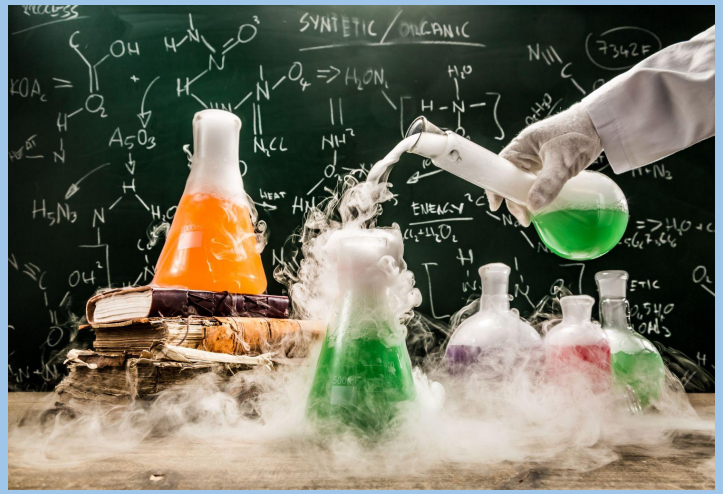


- Topics
  - Proteins
  - Carbohydrates
  - Lipids
  - Nucleic Acids
  - Food groups
  - Structure
  - Function
- Students will be tested on identification and application of topics.

Theory Event: We've Got Chemistry

This theory event will will test participants' knowledge on chemistry.

- Topics
  - States of Matter
  - Atoms
  - Reading the Periodic Table
  - Periodic Trends
  - Periodic Families
  - Reactions
  - Protons, Electrons & Neutrons
  - Ions and Isotopes
  - Chemical Bonds
- Students will need to apply their understanding of chemistry to answer knowledge based questions.



2022-2023 Build Events

Egg Drop

Mission Possible

Trebuchet

Build Binders

Criteria:

1. Table of Contents
2. Background
    - Describe the concepts that are relevant
3. Materials
    - Include all used materials and cost breakdown (with a max budget)
4. Predictions
    - What can be done to maximize the score? How will you carry this out?
5. Design/diagram
    - Detailed drawing before and after completion of the build
6. Prototypes
    - Need photos of each major development (at least 3)
7. Experimental Procedure
    - Include CER (Claim, Evidence, Reasoning)
8. References
    - (Include external links to websites/ videos used)
9. Conclusion

Build Event: Egg Drop

- Competitors must design and construct a contraption no more than 20cm by 20cm by 20cm prior to the competition that can hold and protect one large raw egg from a fall of 3 meters high.
- The only materials allowed are
  - Straws
  - Rubber bands
  - Popsicle Sticks
  - Pipe cleaners
  - Glue
  - Tape
  - Staplers
  - Paper
  - Fabric
  - String

Egg Drop Scoring Criteria
(Ordered Based on Importance)

1) Intactness of the egg
2) The weight of the contraption
3) Adhering to the guidelines

Build Event: Trebuchet

- Competitors must design and construct a Bean Bag Catapult/Trebuchet prior to the competition such that the last point the launcher touches the Bean Bag is no more than 1.5 meters from the ground and the length and width of the launcher is no more than 0.5 meter by 0.5 meter
- The launcher can utilize springs, rubber bands, and other means of elastic force as well as gravity to launch the Bean Bag (You may pull back the catapult prior to launching it or have the catapult be in the pulled back position from the start)
- The participants can decide how far from the landing area they want to place their catapult/trebuchet so that the catapult/trebuchet would launch the Bean Bag in the landing area. The further the catapult/trebuchet launches the Bean Bag is the more points you can gain.

Disclaimer

- This event will be held outside

Trebuchet Scoring Criteria
(Ordered Based on Importance)

1) Distance the trebuchet can launch bean bag
2) How accurate prediction of how far the bean bag will go

Build Event: Mission Possible

- The goal is to build a contraption (also called a Rube-Goldberg machine) which completes the following tasks.
- The tasks include a buzzer sound going off at the 1-minute mark, and a flag being raised at the end of 2 minutes
- Participants will be judged for how close the buzzers are to the exact second. (Scores may be deducted for inaccuracy)
- Teams have a possibility of getting a higher score by having more action transfers.
- Action transfers require a shift in motion (kinetic energy) in the Rube-Goldberg
- Each action transfer must be unique (No points added for repeating the same material or action twice)
- The contraption must fit in the dimensions of 2-meters long by 1-meter wide by 1.5-meters high

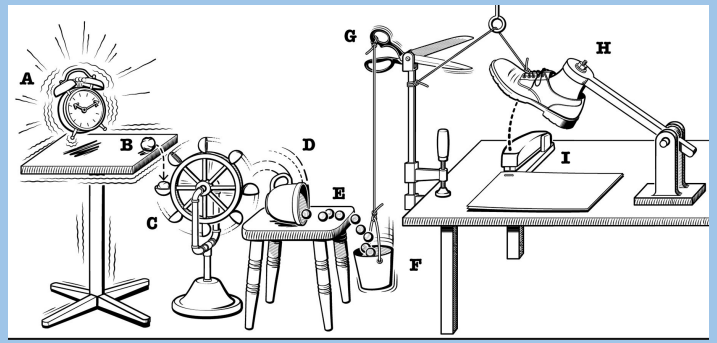
Mission Possible Scoring Criteria (Ordered Based on Importance)

Scoring criteria in order of importance:

1) Successful completion of raising the flag at 2 minutes.
2) Each unique action transfer in the contraption.
3) Buzzer sound at the 1 minute mark.

Scoring penalties in order of importance:

1) The rube-goldberg must fit in the dimensions given (2 meter long by 1 meter wide by 1.5meter high)
2) The device may NOT be touched, stopped, or restarted by participants without the judge's direct instructions to do so.
3) Every time an object from the contraption falls out of the given dimensions area. (The dimensions will be marked)



Instant Challenge Events

These events will be done with their full team on the day of the competition in order to test students ability to think on their feet.

The content will not be provided until the moment the team begins competition.

No information may be shared outside the walls of the challenge premises during the day of the event.

Prepare for these events by practicing instant challenge activities with your team.

Instant Challenge Format

1. Reading period (no time limit)
    - Competitors read through the instant challenge description and can ask the judge questions about the description.
2. Brainstorming Period: 3 mins
    - Competitors brainstorm ideas to solve the instant challenge. They can no longer ask questions of the judge but are also not allowed to use materials to build a contraption during this period.
3. Building Period: 5 mins
    - Competitors use the given materials to build a contraption that solves the given problem, but still may not ask questions during this period.
4. Testing Period: 2 mins
    - Competitors test the effectiveness of their contraption as specified by the event guidelines.

Instant Challenge Scoring Criteria

a. Following directions
b. Completion
c. Creativity
    i. Uses materials in a cohesive way
    ii. Has a “wow” factor
d. Teamwork
    i. Deductions for disputes
e. Overtime (deduction)

Remind and Update Form

All communication will be sent out via **Remind** going forward, so please join ASAP.

All coaches must fill out an **update form** with the following information by January 7th:

- Team name
- Event pairings

Coaching Tips

- Team schedule
- Pairings
- Build binders
- Final team names
- Reference materials
- Budget
- Holidays and other engagements

Event Time Frame

Tentative date: March 18th, 2023

Any Questions?

Contact us:

srvso2020@gmail.com

(669) 278 - 7617

Website: www.srvso.org