Science Day Season

Procedures & Requirements

2025 -2026

Upper Miami Valley Science Days

Science Day Season

All information, instructions, and forms are available at

www.ohioumvsd.com

Upper Miami Valley Science Days

Upper Miami Valley Science Days

"Who is eligible to compete at an Upper Miami Valley Science Day?"

You must be a student, grade 5-12, attending public school, private school, or home school, and residing in Champaign, Darke, Miami, or Shelby County, or an adjacent school district with an existing arrangement with Upper Miami Valley Science Days.

"How do I register for a Science Day?"

Each county has its own Science Day. Information and for each may be found on the UMVSD website. Participation will be registered through your teacher.

Student Orientation

- Each school holds a meeting in October
- Includes explanation of benefits of completing a science day project
  (original student research)
- Distribute/Review Science Day Continuum
  (schedule of assignments, submission deadlines, activities & events)

Orientation should take place prior to October 10th

ProjectBoard

- The Ohio Academy of Science has updated & improved the project software platform for Science Days. It is not only a registration site for Regional and State Science Days, but is also designed to allow students to develop their project from concept to finish in one place if they wish to.
- It provides step by step guidance, stores all project related documents, photos, videos and other support materials and stores them for future use.

Student Orientation

- Distribute Science Day ProjectBoard web link for on-line Registration. Review required information. Registration includes creation of a student profile account.
- Student profile account completion deadline is January 30th. Students not completing student profile account by the deadline will not be eligible for Regional Science Day. However, those students may still participate at County Science Day if they wish.
- Participation Fee has been waived for 2026.

Student Orientation

- It is recommended that students complete research projects individually, however, students may form teams of 2 or 3 if the difficulty of the project warrants.

Topic Selection & Background Research

- Distribute the Topic Background Research Form to each participating student.

Topic Selection & Background Research

- There are 21 project topic categories and many subcategories. The complete list is available on the website. They include botany, zoology, medicine & health, chemistry, physics, engineering, environmental sciences and more …

Topic Selection & Background Research

- Students should begin with a broad area of interest and narrow content following background research of the topic.
- Topic area should be of personal interest to the student, or the project may be designed to answer a specific question that has impacted the student or the student's family.

Topic Selection & Background Research

- Teacher should schedule a meeting to review student progress and answer questions. (prior to Nov. 1st if possible)
- By now, students should have a general topic selected and have listed sources for obtaining background information on that topic.

Topic Selection & Background Research

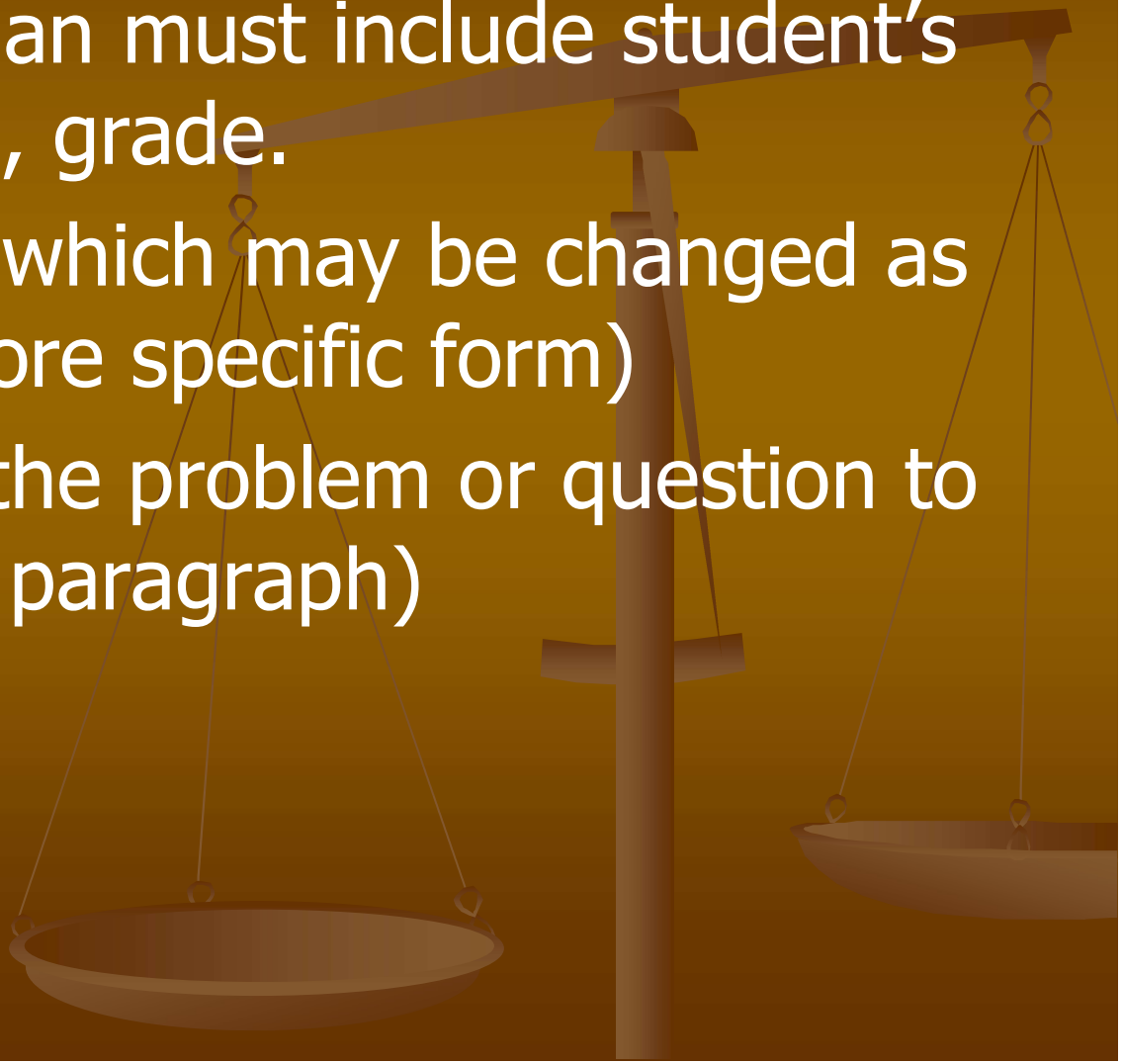
- If student is having trouble selecting topic or finding sources of information, the teacher may assist, and/or refer the student to the website for ideas.
- If student still unsure how to proceed, they may contact the UMVSD Committee from the website. We would be happy to offer suggestions. Do not send completed Topic Forms to UMVSD.

Research Plan

- After student has narrowed the scope of the project topic and gathered sufficient background information on the topic, student should begin writing a Research Plan. Additional background research may be necessary as the project progresses.
- The Research Plan should be 3-5 pages, double-spaced. To remain on schedule, it should be submitted prior to November 21st, if possible.

Research Plan

- The Research Plan must include student's name(s), school, grade.
- A working title (which may be changed as project takes more specific form)
- A statement of the problem or question to be answered (a paragraph)



Research Plan

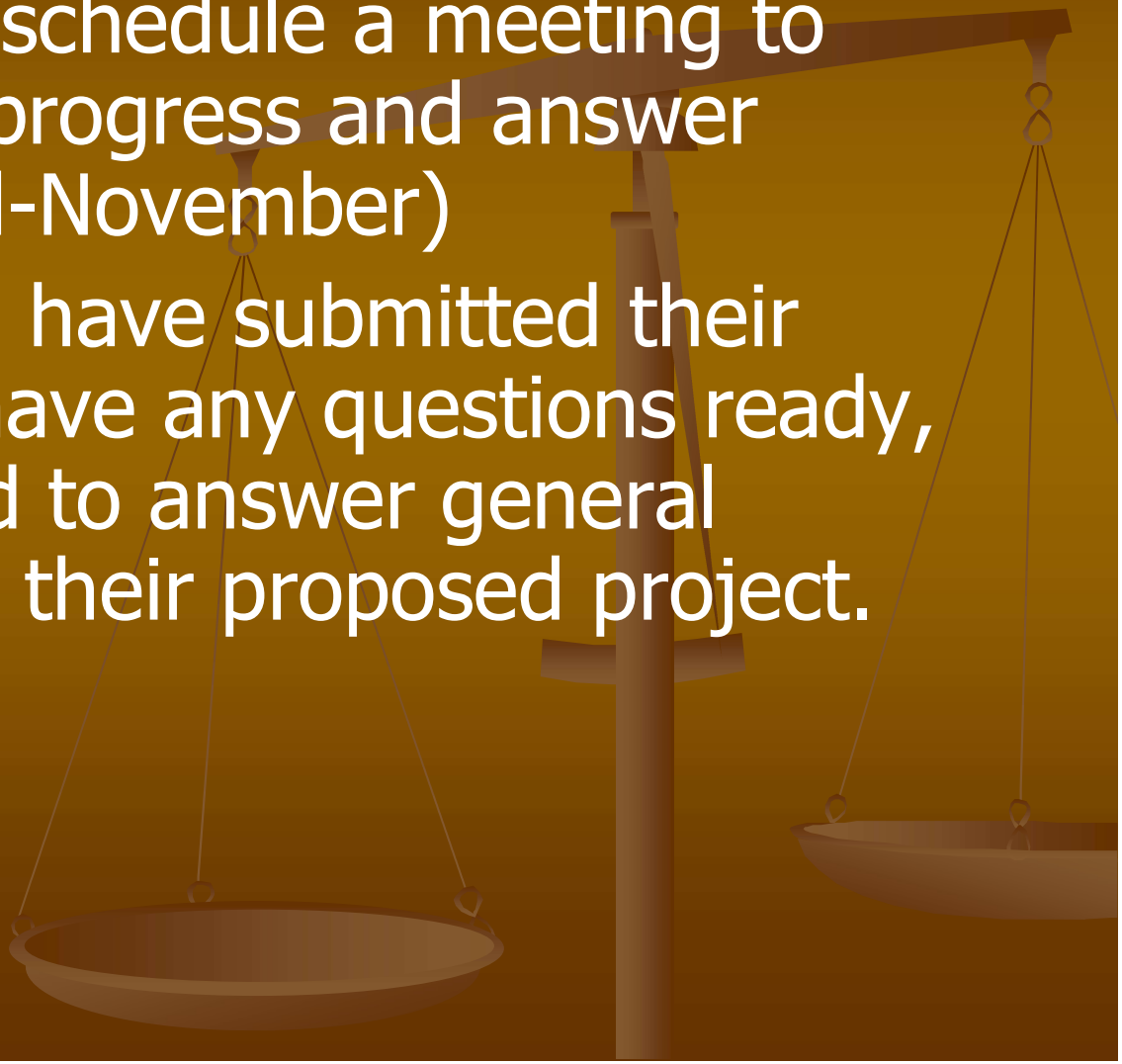
- Include background research/information relevant to the problem or question. This might include statements or findings from previously published research and/or pertinent facts and figures from reliable sources. (2-3 pages)
- Student should provide a summary of the proposed project including what student hopes to demonstrate (related to stated problem/ question), a general idea of the procedure and the expected results based on student's research so far.
- Include a Hypothesis - A good hypothesis answers the question and provides a reason why.
- Engineering design projects no not require a hypothesis.

Research Plan

- Reference List / Work Cited page - All statements, facts, tables, and other quoted or copied information from any source, must be correctly cited in your paper and included in your Work Cited page. Information regarding plagiarism is included on the website.

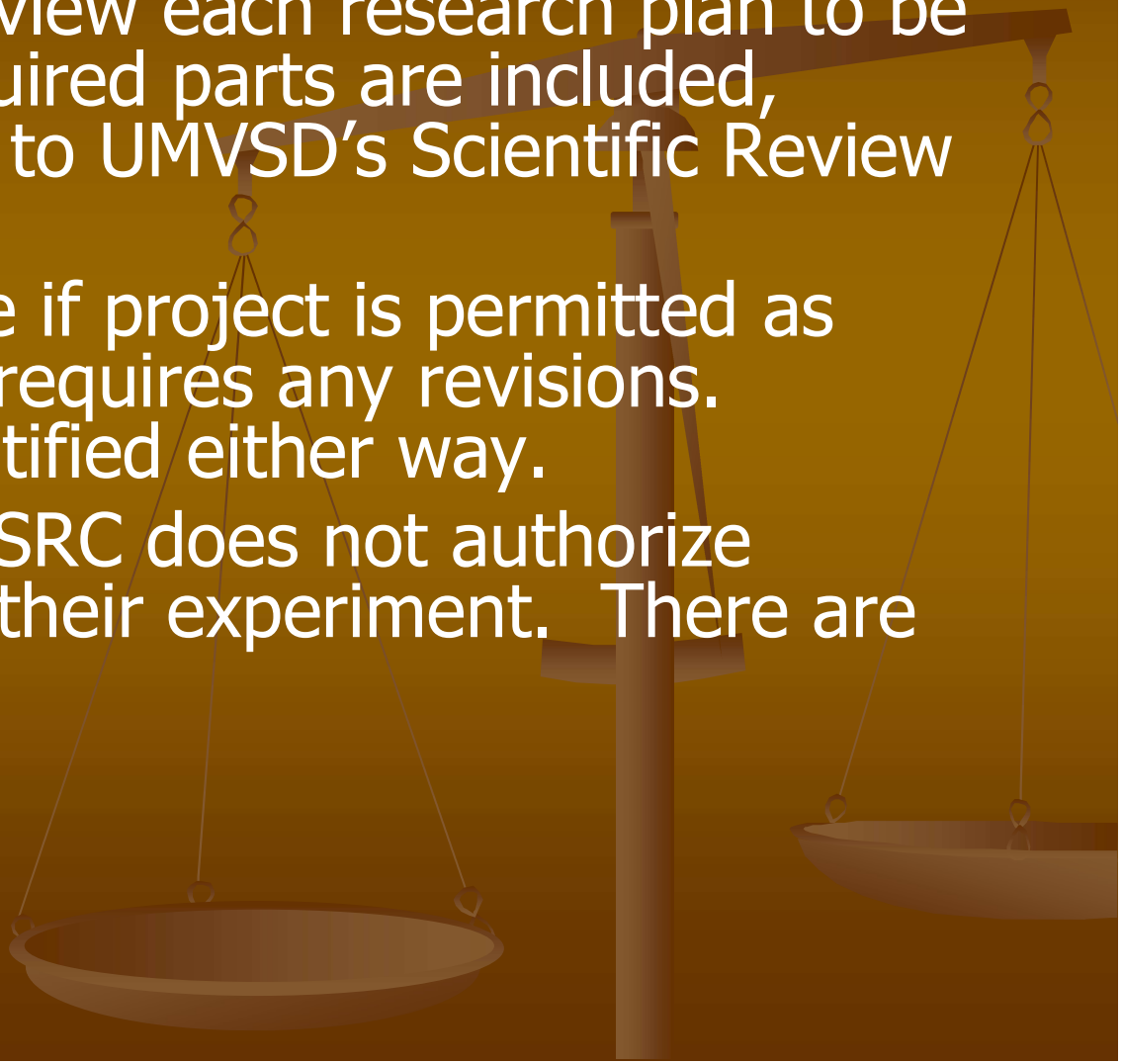
Research Plan

- Teacher should schedule a meeting to review student progress and answer questions. (mid-November)
- Students should have submitted their research plan, have any questions ready, and be prepared to answer general questions about their proposed project.



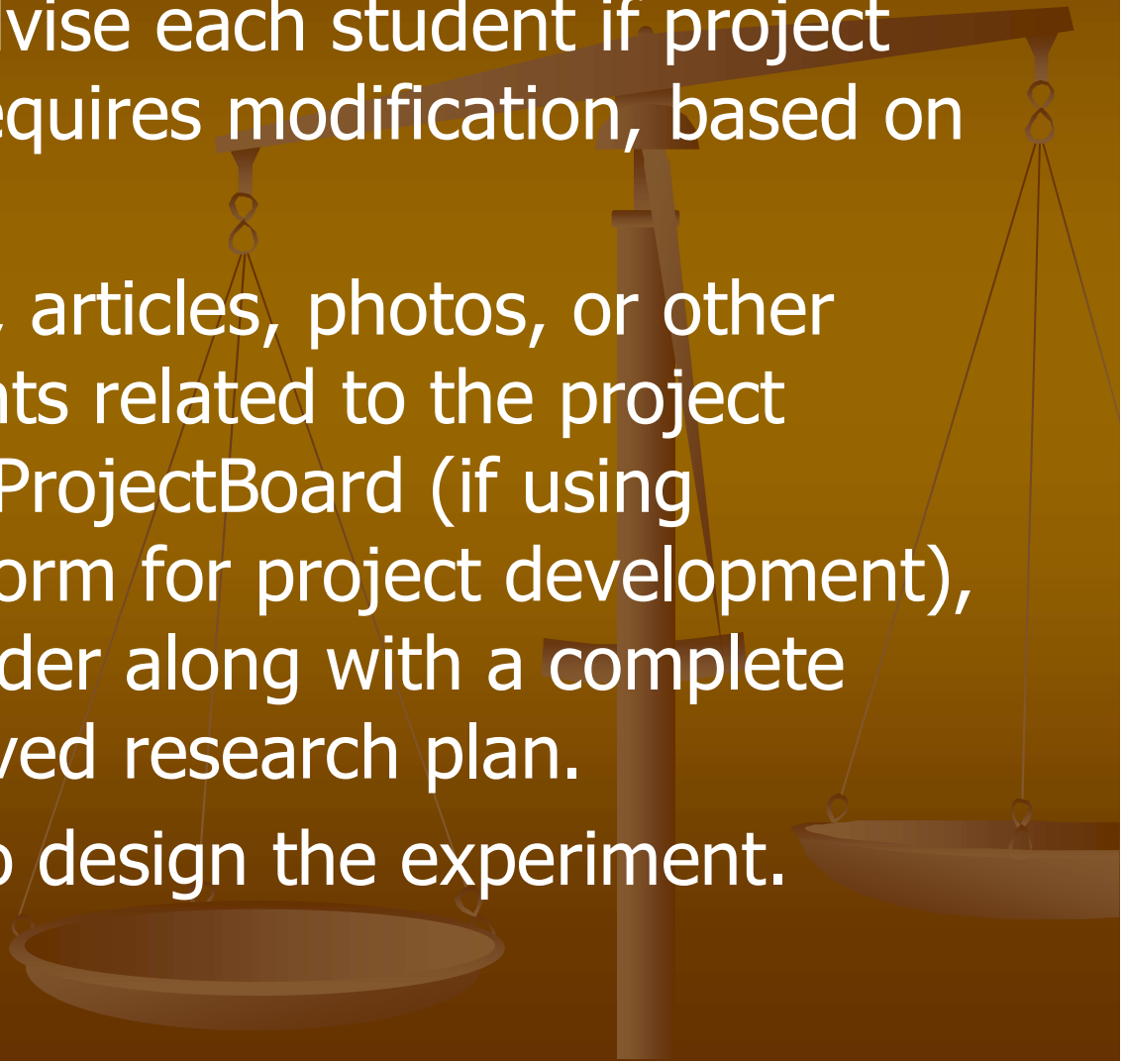
Research Plan

- Teacher should review each research plan to be sure all of the required parts are included, before forwarding to UMVSD's Scientific Review Committee (SRC).
- SRC will determine if project is permitted as submitted, or if it requires any revisions. Teacher will be notified either way.
- Preliminary ok by SRC does not authorize students to begin their experiment. There are additional steps.



Research Plan

- Teacher should advise each student if project may proceed or requires modification, based on SRC comments.
- All research notes, articles, photos, or other collected documents related to the project should be kept in ProjectBoard (if using ProjectBoard platform for project development), or a journal or binder along with a complete copy of the approved research plan.
- The next step is to design the experiment.



Design The Experiment

- Hypothesis based experiments - Students must design the experiment based on best scientific practices. A good experiment tests the relationship between an independent variable (the change student can control) and a dependent variable (a possible change student does not control).

Design The Experiment

- All other variables must be identified and be either controlled or eliminated (kept consistent throughout the experiment for all tests), or the results may not represent the actual relationship between the independent and dependent variables being tested.
- More information about variables and test controls may be found on the website.

Design The Experiment

- Students must develop a step-by-step procedure for their experiment. It should be written with enough detail that others could follow the instructions and complete the same experiment.
- Students must include a list of materials and equipment to be used in the experiment.
- Students must identify any potential hazardous materials and/or procedures, and state how safety will be addressed.

Engineering Design

- Engineering Design Projects - Students must design a prototype which addresses an identified problem or need. This may require several sequential versions as student tests and modifies the prototype to improve function or performance.
- Students must include a list of materials and equipment to be used in the design process.
- Students must identify any potential hazardous materials and/or procedures, and state how safety will be addressed.

The Experiment

- If possible, the teacher should schedule a Peer Review where student may present the proposed project to classmates. Questions and comments may help student to identify problems to be corrected or provide ideas for improvements.
- Student could also present the project to others outside of school and gain the same benefits.

The Experiment

- Students should resubmit their initial research plan with any recommended modifications, and with the step-by-step procedure or engineering design plans, and the materials/equipment list included.
- Students should also complete required ISEF Forms (1) (1A) (1B) or the new OAS Combined project form at this time. {ISEF Forms (1) (1A) & (1B) combined in a single form}

Project Forms

- All projects require completed ISEF Forms (1) (1A) (1B) (or the new combined OAS form) with requested signatures.
- All signatures must be dated prior to the start date for the experiment (data collection).

  Forms should be completed on a computer (forms are available as a fillable pdf). Print and obtain required signatures.

  Submit signed forms to teacher who will review. Keep forms in binder along with a copy of approved research plan.

- Form (1): Checklist for Adult Sponsor
- Form (1A): Student Checklist
- Form (1B): Approval Form

Project Forms

- All projects require completed ISEF Forms (1) (1A) (1B)
  with requested signatures.

- Form (1): Checklist for Adult Sponsor
  Adult Sponsor may be a parent, teacher, or mentor.
  Whoever will be working most with the student.
  Boxes 1, 2, 3, and all appropriate boxes under 5 should be checked.
  Only check boxes under 4 & 6 if those items apply to this project.
  Follow instructions regarding additional forms for each box
  checked under 4 & 6.
  Fill in adult sponsor information.

Project Forms

- All projects require completed ISEF Forms (1) (1A) (1B) with requested signatures.

- Form (1A): Student Checklist
  - Complete all information, items 1 – 4.
  - Item 5, check “No”, unless project is continued from last year.
  - Item 6, the start date refers to when you plan to begin data collection (the actual experiment). End date is when you plan to stop collecting data. (these dates may change due to circumstances not planned for)
  - Complete items 7 & 8.

Project Forms

- All projects require completed ISEF Forms (1) (1A) (1B) with requested signatures.

- Form (1B): Approval Form
  Complete all spaces in Part 1.
  Do not write in Part 2 or Part 3 boxes.

Additional Project Forms

- All projects require completed ISEF Forms (1) (1A) (1B) with requested signatures.

- Some projects will require additional ISEF Forms to be completed and submitted in order for project to be approved.
- Projects which involve human participants, vertebrate animals, micro-organisms, tissues, or hazardous chemicals, activities, or devices may require additional forms.
- If student is unsure which forms are required for their project, ask the SRC for recommendations.

Additional Project Forms

- All projects require completed ISEF Forms (1) (1A) (1B)
  with requested signatures. Must be completed before experimentation.

- Additional Forms which may be required:

  Form (1C) Regulated Research Institutional or Industrial Setting
  Form (2) Qualified Scientist
  Form (3) Risk Assessment
  Form (4) Human Participants
  Human Informed Consent Form
  Form (5A) Vertebrate Animal
  Form (5B) Vertebrate Animal – Regulated Research Institution
  Form (6A) Potentially Hazardous Biological Agents Risk Assessment
  Form (6B) Human & Vertebrate Animal Tissue
  Form (7) Continuation of Project

Additional Project Forms

- Form (1C) Regulated Research Institutional or Industrial Setting

  This form only used if data collection occurs in a regulated laboratory or an industrial setting.

  It is the only form to be completed AFTER the experiment is completed.

  The SRC will advise student if this form is required after review of Research Plan.

Additional Project Forms

- Form (2) Qualified Scientist

  This person should be extremely knowledgeable of the topic area, the experimental procedures to be used, and best safety practices involving the project.

  May be required for research involving:
  - Human Participants
  - Vertebrate Animals
  - Potentially Hazardous Biological Agents
  - DEA-Controlled Substances

  The SRC will advise student if this form is required after review of Research Plan. Must be completed before experimentation.

Additional Project Forms

- Form (3) Risk Assessment

  Required for projects using hazardous chemicals, activities or devices and microorganisms.

  Designated Supervisor (or Qualified Scientist) must complete signature box of this form.

  The SRC will advise student if this form is required after review of Research Plan. Must be completed before experimentation.

Additional Project Forms

- Form (4) Human Participants

  Required for all research involving human participants
  (data not collected at a Regulated Research Institution)

  Complete top box on form only.

  Bottom box to be completed by Institutional Review Board (IRB)
  Student must submit Form (4) along with completed Research Plan and other required ISEF Forms.

  The SRC will advise student if this form is required after review of Research Plan. Must be completed before experimentation.

Additional Project Forms

- Form (4) Human Participants

  Many student proposed projects involving human participants will not been permitted due to restrictions involving privacy laws and safety issues for participants and student researchers.

  Read all of the Human Participant restrictions found in the ISEF Rules & Guidelines.

  Most projects involving Human Participants also require a Human Informed Consent Form.

  Students should involve a mentor and/or appropriate health professional in planning their project.

Additional Project Forms

- Form (4) Human Participants

  Students should be advised early in the process to avoid projects involving Human Participants, unless they understand what is required and are willing to complete ALL of the paperwork involved.

Additional Project Forms

- Human Informed Consent Form

  An informed consent/assent/permission form should be developed in consultation with the Adult Sponsor, Designated Supervisor or Qualified Scientist.

  Not every Human Participant project requires an informed consent form, but almost all will. If required, then every participant must sign a copy.

  Minors will require parental signatures in most cases.

Additional Project Forms

- Human Informed Consent Form

  Consent Form must include information specific to the project, including purpose, requirements of participants, time required, potential risks, if any, potential benefits to participants, if any, and how confidentiality will be maintained.

Additional Project Forms

- Form (5A) Vertebrate Animals

  Required for all research involving vertebrate animals that is conducted in a school/home/field research site.

  Student should complete Items 1-5 as they apply to the project. Be thorough in providing the requested information.

  The SRC will review Research Plan and advise if a Veterinarian, or Designated Supervisor, or both are required.

  If so, those individuals will need to complete the appropriate boxes at the bottom of the form.

Additional Project Forms

- Form (5B) Vertebrate Animals

  Required for all research involving vertebrate animals that is conducted in at a Regulated Research Institution

  The SRC will review Research Plan and advise if this form is required.

  If so, the Qualified Scientist will need to complete the appropriate information, not the student.

Additional Project Forms

- Form (6A) Potentially Hazardous Biological Agents Risk Assessment

  Required for all research involving microorganisms, rDNA, fresh/frozen tissue, blood, blood products and body fluids.

  Many projects of this type are only permitted in licensed laboratories or facilities that meet certain rules and regulations. Some may be permitted in school science labs. Very few may be conducted at home.

  The SRC will review Research Plan and advise if this form is required and where the project must take place. If approved, some of these projects require the completion of Form 6B also.

Additional Project Forms

- Form (6B) Human and Vertebrate Animal Tissue

  Required for all research involving fresh/frozen tissue, blood, blood products and body fluids.

  Many projects of this type are only permitted in licensed laboratories or facilities that meet certain rules and regulations. Some may be permitted in school science labs.

  The SRC will review Research Plan and advise if this form is required and where the project must take place. If approved, Form (6A) must also be completed.

Additional Project Forms

- Form (7) Continuation/Research Progression Projects
- Required for projects that are a continuation/progression in the same field of study as a previous project. Students may wish to conduct additional testing of a variable using a modified and/or improved procedure or better equipment, or they may test a different variable, or make some other change to the original project.
- This form must be accompanied by the previous year's abstract and Research Plan. Students should also mark the appropriate boxes on Form (1A).

Additional Project Forms

- Even when all appropriate forms are completed, there are some activities, procedures and/or materials which are not permitted by the Ohio Academy of Science.
- The SRC will advise if project can continue, only after a completed research plan and all required forms have been submitted and reviewed.

The Experiment

- Teachers should review research plans to insure all required parts are included and check required ISEF Forms before forwarding all final documents (electronically) to the SRC.
- Teachers may wish to schedule a meeting prior to December 16th to review student progress and address any questions.
- Teachers should make certain that students have completed the student account creation process on ProjectBoard by the January 15th deadline.

The Experiment

- Submission Checklist:
  - Research Plan
    - Student Name(s), School, Grade
    - Title, Statement of Problem/Question
    - Hypothesis (not required for engineering design)
    - Background Research
    - Step by Step Procedure (or engineering design process to be followed)
    - Material/Equipment List
    - Work Cited page

The Experiment

- Submission Checklist:
  - ISEF Student Project Forms
    - All Projects: Forms (1) (1A) (1B) (or the new OAS combined form)
    - Other Forms as required (SRC will advise)
    - All forms include required signatures and all signature dates precede the experiment Start Date.

The Experiment

- The student may begin the experiment (collection of data) ONLY AFTER the student has submitted a complete Research Plan and all required ISEF Forms, and has received written approval from the Scientific Review Committee (SRC) to proceed with the project.

The Results

- Decide how to report your findings.
- The best method to use may be:
  - Graphs
  - Tables
  - Visuals
  - Some combination, or
  - Simply text as part of your report.

The Results

- The appropriate method(s) depends on the type and amount of data collected.
- Graphs and tables need to be labeled correctly and all figures given in appropriate scientific units of measure.
- Photos should be identified and photo credit given to the source/photographer. Only show commercial product labels and Trademarks with permission of the company.
- Some amount of discussion of your results is required to explain in more detail how data was measured and/or reported, and whether any problems occurred or if modification of the procedure was required.

The Results

- Teachers may require students to submit their collected data and their explanation of the results about three weeks prior to their scheduled County Science Day for Teachers to review. These results do not need to be forwarded to the SRC unless the teacher has concerns about the project or the results.

Conclusions

- Using your collected data, explain why you accepted or rejected your hypothesis. For engineering design, how did prototype perform?
- You should include statistical analysis of your data.
- You may include an analysis of why you think results supported/did not support your hypothesis, problems encountered with the experiment, what you would do differently if anything, what new questions resulted from the project, and what you might do to continue the project.

The Abstract

- Finally, students must write an abstract of 250 words or less, which should include a brief summary of the problem, procedure, results, and conclusions.
- Instructions for writing a good abstract are found on this website and on ProjectBoard. Students should also ask their Language Arts teacher to proof their work. The abstract may be the only part of the research paper that judges will read, so it is important that it be well written.
- The abstract should be included in ProjectBoard at least one week prior to Science Day.

The Presentation

- Just as important as conducting research is the ability to communicate the results to other scientists and engineers.
- Science Day is the student's opportunity to provide an oral and visual report of their project.

The Presentation

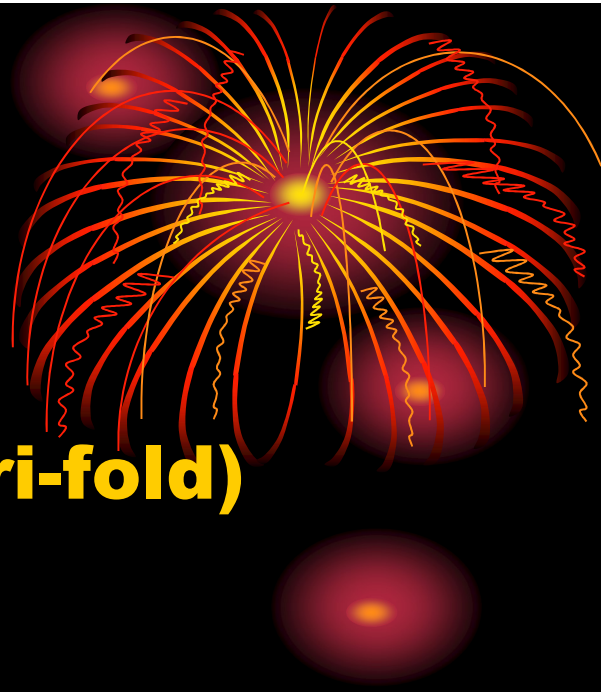
- **Once the Final Report is completed, including Results, Conclusions, and Abstract, students will then design and construct their Project Display Board as a physical poster for the Science Day.**

The Presentation

Physical Display Board (ex: Tri-fold) must include:

- **Student Name(s), School, Grade**
- **Title (final form)**
- **Abstract (250 words or less)**
- **Problem/Question**
- **Background Research (summary of relevant information properly cited)**

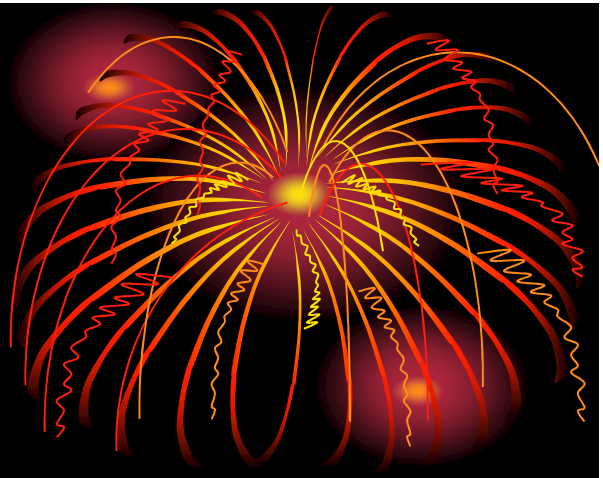
The Presentation



Project Display Board (es: Tri-fold) must include (continued):

- **Materials**
- **Procedure (step by step bullet points**

The Presentation



Physical Display Boards (ex: Tri-fold) must include (continued) :

- **Results:**
  May be in paragraph form, tables, graphs, figures, photos, or combination.
  Be certain to use scientific units of measure, and use those units consistently.
  Label all tables, graphs (including axes), figures and photos.
  Credit the source of all tables, graphs, figures, and photos.

The Presentation

Physical Display Boards (ex: Tri-fold) must include (continued) :

- **Conclusions**
  Include proposed additional research and/or changes you would consider to improve the project if repeated.
- **Work Cited List (include all references used)**
- **Physical Display Board Guidelines & Samples are Available on ProjectBoard.**

The Presentation

- Practice the oral presentation in front of the class, family & friends, or even a video recorder.
- The questions they ask will often be the same questions that will be received from the judges.

County Science Day

- The big day has finally arrived. Review all of the instructions for Science Day provided by the UMVSD Committee. (on website)
- Check the Science Day schedule. (on website)
- Arrange for transportation to Science Day ahead of time. If a student will be unable to arrive at the listed time for registration, have the teacher let UMVSD know when to expect them.
- Dress professionally – no jeans or tee shirts.

County Science Day

- What to bring:
  - Your Poster – standard trifold, or printed poster (in plastic bag in case of bad weather)
  - One copy of your complete Final Report
  - 3-4 copies of your abstract (with student name, school, grade, Project Title)
  - Journal/Notebook – contains all of your background research, notes, data as collected, MSD sheets if any, or if venue supports internet access, student may bring device to show judges all support materials. (This is optional, but highly recommended)

County Science Day

- What else to bring:
- You may bring a battery powered laptop or tablet which may be used to access the content of your project.
- Use of devices will be limited to simulations, data analysis and other project related content. Not for visual or audio entertainment
- You may bring a book, homework, or quiet electronics – iPod, Kindle, tablet. (only for use when not being judged) You may bring water and snack if you wish, but there will be food and drink available at Science Day.
- Electricity will not be provided.

County Science Day

- What NOT to bring:

  Some engineering prototypes and/or project equipment or materials may be permitted at Science Day. A specific list of criteria is provided in the Science Day Standards found on this website and provided to teachers. Items brought to Science Day must meet the criteria. A specific list of items which are NOT permitted is also found in the Science Day Standards.

  In addition:

  No test samples or materials may be applied to poster.

  No freestanding floor displays or apparatus.

County Science Days

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- In addition:
  No test samples or materials may be applied to poster.
  No freestanding floor displays or apparatus.

County Science Day

- What to expect:
  - Specific instructions will be issued for each Science Day event.
  - When you arrive, sign in, pick up your name tag, find your space assignment and set up your display.
  - Availability of food and drink will be announced.

County Science Day

- What to expect:

  Be at assigned space at announced judging start time.

  Judges will be wearing name tags.

  Each project will have a pair of point judges and one or more special awards judges. In some cases there will be an additional referee judge.

  If able, stand and be courteous when delivering presentations, including for the public viewing period. That time will be announced when the judging is concluded.

County Science Day

- What to expect:

  An Awards Ceremony will take place shortly after the judging is concluded. Students should attend if at all possible. Public recognition of student achievement is part of the reward for the student's efforts.

  If a student is unable to stay, advise the UMVSD Committee and designate a representative to pick up the student's judging sheets, certificate, and any awards received.

County Science Day

- Funding to cover the expenses for the Science Day Program and all of the awards given are provided by area sponsors. These businesses, organizations, individuals, and schools are listed in the printed program and on the UMVSD website.
- Students receiving monetary awards should thank the sponsor in writing when possible. We want the sponsors to understand that their support is recognized and appreciated.

Regional Science Day

- Students receiving a ‘Superior Rating’ at County Science Day are eligible to compete at the Regional Science Day

  to be held Saturday, March 14, 2026, hosted by Edison Community College, Piqua Campus.
- Superior rated students will be recognized at the Awards Ceremony. Immediately following the awards, there will be a Regional Science Day orientation with printed instructions.
- Regional Science Day Project Submission is required through ProjectBoard, if student decides to participate. Student must have registered (student profile) on ProjectBoard prior to the January 15th deadline.

Science Fair Season

All information, instructions, and forms are available in ProjectBoard and at

www.ohioumvsd.com

Upper Miami Valley Science Days