



2023-2024 OSSEF

Middle School (MS)-EZ Project Information

Oklahoma State University will host the 2024 Oklahoma State Science and Engineering Fair (OSSEF) on Friday March 8 and Saturday March 9, 2024.

- Students qualify to attend OSSEF **only** by advancing from one of the eight Oklahoma regional science and engineering fairs.
- The deadline to register for the 2023 OSSEF is Sunday February 11, 2024 at 11:59 pm.
- **No projects will be accepted after February 11, 2024.**

The eight OSSEF affiliated regional science and engineering fair locations and fair directors are:

- **Bartlesville District Science Fair** (David Brown: david.brown3@p66.com)
- **Central Oklahoma Regional Fair - Edmond** (Dr. Beth Allan: eallan@uco.edu)
- **Eastern Regional Fair - Wilburton** (Philip Hawthorne: phawthorne@eossc.edu)
- **East Central Regional Fair - Ada** (Susie Edens: susieedens@hotmail.com)
- **Muskogee Regional Fair** (Derryl Venters: derryl.venters@gmail.com)
- **Northeastern Regional Fair - Miami** (Lynn Pagels: Lynnmpagels@gmail.com)
- **Northwestern Regional Fair - Alva** (Dr. Jenny Sattler: jasattler@nwosu.edu)
- **Tulsa Regional Fair** (Rachel Christy: rachel.christy@tulsastem.org)

OSSEF Middle School Project Options

Students in grades 6th – 8th have the option to submit their project using one of the two options listed below.

Option 1. OSSEF Middle School (MS) - EZ Project/Form

The OSSEF MS-EZ option allows some types of middle school (6th – 8th grade) research projects involving human subjects, vertebrate animals, microbes, hazardous substances, and human and animal tissue to be exempt from the ISEF forms.

- Projects conducted under the OSSEF MS-EZ rules must be submitted using two required forms: **OSSEF MS-EZ Research Plan and Pre-Approval Form** and **OSSEF MS-EZ Project Summary Form**
- The **OSSEF MS-EZ** Forms must be completed by the Student(s) and Adult Sponsor(s).

OSSEF MS-EZ Research Plan and Pre-Approval Form

- **EVERY** student, whether participating individually or as part of a team, must complete and submit this form.
- Submission and approval are required before experimentation begins.
- The form asks for the student's email address, parent or guardian's email address, and teacher's email address, grade, project title, background information and methods/safety procedures.
- A detailed description of the Methods & Safety Procedures used, as well as a materials list must be included.
- Safety procedures on how the student handled human subjects, vertebrate animals, microbes, hazardous substances, or human and animal tissue must be provided if applicable to the project.
- If the Methods & Safety section does not include enough detail, the Scientific Review Committee (SRC) will reject the project or require appropriate ISEF forms.
- After the forms are printed, each student (including each student in a team project) is required to get all required signatures from parents/guardians/teachers, as specified on the form.
- For students participating at OSSEF, completed and signed forms must be brought with the student and displayed at the OSSEF project table.

OSSEF MS-EZ Project Summary Form

- One Project Summary Form must be completed per project (all student names for that project should be listed on the form).
- Students competing at an affiliated fair should have SRC signatures on their Project Summary Forms, after experimentation, during review by the affiliate fair SRC.
- For students participating at OSSEF, completed and signed forms must be brought with the student and displayed at the OSSEF project table.

Option 2. ISEF Rules and Forms (i.e., 1, 1a, etc.)

Students who choose to conduct a project outside of the OSSEF MS-EZ Rules **must** follow ISEF rules and complete the ISEF forms.

- Schools who have students whose project falls outside of the OSSEF MS-EZ Rules are **required** to hold a Scientific Review Committee meeting with the School Principal, a Science Teacher (other than the Teacher Adult Sponsor), and a Qualified Scientist **before** the experiment is conducted.
- The Qualified Scientist must have experience with the type of project being conducted.
- See [ISEF Rulebook](#) for specific requirements.

OSSEF Middle School (MS)-EZ Rules



Remember -- If the proposed research project does not align with the OSSEF MS-EZ Rules below, the student MUST follow ISEF [RULES](#) and use ISEF forms.

Middle school teachers and students can use the OSSEF MS-EZ process for basic investigations. If a project fits within the OSSEF MS-EZ guidelines the following rules may be used. These rules are designed to cover the most basic, safe, ethically clear, and least hazardous situations. Some students will want to do more complex investigations and they will be governed by the more detailed ISEF rules and forms:

<https://www.societyforscience.org/isef/international-rules/rules-and-guidelines/>. The information in Table 1 is intended to outline which set of rules applies to specific situations. Please contact the OSSEF Fair Directors at ossef.okstate.edu if you have questions.

NOTE: If a student's project is not allowed under the OSSEF MS-EZ Rules, middle school students can still conduct that type of research if they receive pre-approval from their local IRB/SRC, follow ISEF rules, and submit all the required ISEF forms. Please read through the ISEF rules **before** experimentation begins. Most ISEF forms need to be completed and signed **before** experimentation begins. Teachers are authorized to have stricter rules for their students.

TABLE 1. Summary of project eligibility for the OSSEF MS-EZ form

Type of Research	Projects Allowed to Use OSSEF MS-EZ Rules	OSSEF MS-EZ Rules Allowed with Restrictions	Are there required Safety Assessment Questions?	Projects NOT Allowed to use OSSEF MS-EZ Rules
Involving Humans	Passive Observation (with no manipulation of the environment)		No	Ingesting anything, exercise, survey tests, fingerprinting, heart rates
Involving Human or Animal Tissues	Hair, hooves, nails and feathers; meat, eggs, meat by-products or pasteurized milk purchased from a store; commercially prepared fixed tissue slides		No	Anything else
Involving Vertebrate Animals	Investigations involving observation of zoo animals, wild animals or pets	Behavioral intervention projects with pets	Yes	Drastic changes in home environments, negative reinforcement
Involving Hazardous Chemicals, Activities and Devices		Permissible only with required safety precautions. See Detailed MS-EZ rules for allowed Hazardous Chemical, Activity, or Device projects.	Yes	Firearms, explosives, Class III & IV lasers, DEA controlled substances, prescription drugs, radiation, strong acids or bases, liquid nitrogen, pressurized gas
Involving Microorganisms	Yogurt cultures; Baker's and Brewer's yeast purchased from a store; nitrogen-fixing, oil-eating or algae-eating bacteria in their natural environment; mold growth on food items stopped at first sign of mold; studies of mushrooms and slime mold	Unknown from the environment, BSL-1 microbes. Must be done at school.	Yes	BSL-2 or higher microbes. Must be done in a lab with ISEF forms (MS-EZ forms not allowed for BSL-2, or higher, microorganisms).

Detailed Rules for OSSEF MS-EZ Projects

Projects Involving Humans

Acceptable projects include observational studies of legal public behavior of children and/or adults where there is NO interaction between the researcher (or someone acting on behalf of the researcher) and their subjects. It is also acceptable to use data from the Internet that is publicly available for analysis. Research projects involving human subjects that do not align with the OSSEF MS-EZ rules MUST follow the [ISEF rules](#).

Example of Project that is Allowed: a student researcher observes how many children play on the monkey bars vs. the slide at the park.

Example of Project that is Not allowed: a student researcher observes how many children play on the monkey bars vs. the slide at the park and then asks the children why they prefer one over the other.

NOT Allowed Under OSSEF MS-EZ Rules

- Manipulating the environment to observe how people respond to the manipulation
- Surveys or tests
 - Teachers may NOT administer surveys/tests to their class(es) on behalf of the student researcher
- Eating, drinking, or tasting anything, including food, candy or water
- Exercise studies
- Consumer products testing involving human subjects
- Taking fingerprints
- Measuring heart rates

Projects Involving Human and Vertebrate Animal Tissue

There are some acceptable projects involving human and animal tissues that may use the OSSEF MS-EZ form. Acceptable projects are those involving:

- Hair, hooves, nails, and feathers (must be collected without harming the animal)
- Teeth that have been sterilized to kill any blood-borne pathogens that may be present.
- Fresh or frozen meat, meat by-products, pasteurized milk, or eggs that are obtained from food stores, restaurants, or packing houses.
- Commercially prepared fixed tissue slides

Example of Project that is Allowed: a student compares strength and texture of hair clippings after they are soaked in different concentrations of salt solutions.

Example of Project that is Not allowed: a student compares shape and size of teeth from a variety of “road-kill” animals or ALL other projects involving human and animal tissues, including those involving organs, non-sterilized teeth, blood and other body fluids.

Projects Involving Vertebrate Animals

OSSEF MS-EZ Rules allow only two types of projects with vertebrate animals.

1. **Observation projects** of the behavior of animals in their habitat, including a zoo/aquarium, out in nature for wild animals, or a home if observing pets where there is **NO intervention, interaction, manipulation, or treatment of the animal(s) being observed.**
2. **Behavioral intervention projects** for pets, this may involve experiencing things that pets experience in everyday life such as introducing a new food dish, receiving supplemental treats (following label recommendations) or a new toy. Pets are defined as animals not acquired specifically for a research project. Using pets owned by other people is allowed, if and only if the owner of the animal is present when the pet is being studied. Students cannot purchase or acquire a new pet for the sole purpose of their research project.

Example of Behavioral Intervention that is Allowed: a student observes which colored dish a dog prefers to drink from.

Example of Behavioral Intervention Not Allowed: a student adds food coloring to water to see which color the dog prefers.

NOT Allowed Under OSSEF MS-EZ Rules

If any of the statements listed below are TRUE, the project does not follow the OSSEF MS-EZ rules and thus the student must complete the [ISEF forms](#). Any project that ends in death will **NOT** be allowed at the OSSEF.

- I will buy an animal to experiment on.
- I will feed the animal food, vitamins or supplements not labeled for that type of animal.
- The animal got sick during this project.
- The activity is not normally performed by this type of animal (example: fish swim, cats do not).
- This activity will cause the animal stress, pain, or fear.
- The animal died during this project.

OSSEF MS-EZ Safety Assessment Questions for Vertebrate Animals

Students must answer the following MS-EZ Safety assessment questions in the Methods & Safety section of the Research Plan and Pre-Approval Form.

1. What type and how many animals will be used?
2. Who will take care of the animals?
3. What will happen to the animals after the experiment?

Projects Involving Hazardous Chemicals, Activities or Devices

Projects involving the use of hazardous chemicals and devices or the involvement in hazardous activities require direct supervision by a parent or teacher. Any project beyond what is listed below must follow [ISEF rules](#) for Hazardous Chemicals, Activities or Devices. All OSSEF MS-EZ projects involving Hazardous Chemicals, Activities, or Devices must answer the MS-EZ Safety assessment questions (listed below) in the Methods & Safety section of the Research Plan and Pre-Approval Form.

- **Hazardous chemicals and Compounds** include acids, bases, and alcohol. This includes household items like bleach, over-the-counter medicines, fertilizers, and manure.
- **Hazardous Activities** are those that involve a level of risk above and beyond that encountered in the student's everyday life. When in doubt, do the above OSSEF MS-EZ Safety Assessment.
- **Hazardous Devices** include laboratory equipment and power tools that require a moderate to high level of expertise to ensure safe usage. Sold rocket engines when unaltered and used according to manufacturer's directions are allowed as long as Methods & Safety procedures include adult supervision.

NOT Allowed Under OSSEF MS-EZ Rules

If the project contains any of the Hazards listed below, the project does not follow the OSSEF MS-EZ rules. ISEF rules and [ISEF forms](#) must then apply.

- Firearms, explosives, fireworks, fire, and fire extinguishers
- Class III and Class IV lasers (see ISEF document)
- DEA (Drug Enforcement Administration) controlled substances, prescription drugs, tobacco
- Radiation
- Chemicals with a pH of 1 (very strong acid) or a pH of 14 (very strong base)
- Liquid nitrogen
- Pressurized gases

OSSEF MS-EZ Safety Assessment Questions for Hazards

Students must answer the following MS-EZ Safety assessment questions in the Methods & Safety section of the Research Plan and Pre-Approval Form.

1. List the hazardous chemicals, activities or devices that will be used.
2. Identify the risks involved.
3. Describe the safety precautions used to reduce risk, including location and supervisor.
4. Describe the disposal methods used for hazardous chemicals.

Projects Involving Microorganisms

Some projects involving microorganisms are allowed under OSSEF MS-EZ rules. Read details below carefully to determine if your project is eligible for MS-EZ forms. ALL projects involving microorganisms must answer safety assessment questions on the Research Plan and Pre-Approval Form.

OSSEF MS-EZ Safety Assessment Questions for Microorganisms

Students must answer the following MS-EZ Safety assessment questions in the Methods & Safety section of the Research Plan and Pre-Approval Form.

1. What types of microorganisms are involved?
2. What risks are involved?
3. What safety precautions will be used to reduce risks?
4. What disposal methods will be used?
5. Where will the research be conducted?

The Following Microorganism Projects are Approved without Additional Precautions.

- **Tasting** the product as part of the experiment is **never allowed**.
- Baker's or Brewer's yeast purchased from a store.
- Studies involving Lactobacillus, nitrogen-fixing bacteria, oil-eating bacteria, and algae-eating bacteria obtained from their natural environment.
 - These organisms are not allowed under MS-EZ rules if they are cultured in a petri dish environment. In that case, [ISEF rules](#) **MUST** be used.
- Studies of mold growth on food items if the experiment is **stopped at the first sign of mold**.
- Studies of mushrooms and slime mold.

The Following Microorganism Projects are Approved only when Conducted at School or a Research Lab Following [Bio Safety Level \(BSL\) 1 Protocols](#) as Stated for Unknown Specimens:

- **Decomposition or mold** growth experiments either on nonfood items or those that continue beyond the first sign of mold on food.
- **Unknown specimens** obtained from the environment, (e.g. soil, household surfaces, skin)
 - Unknown specimens cannot be collected from living things such as plants, humans, or other animals.
- **Bio Safety Level 1 (BSL-1) Microorganism.** The only BSL-1 organisms approved for middle school use under the OSSEF MS-EZ rules are:
 - *Escherichia coli* strain K12
 - *Pseudomonas fluorescens*

Special Rules Regarding Unknown Microorganisms

Studies involving [unknown microorganisms](#) present a challenge because the presence, concentration and pathogenicity of possible agents are unknown. In science fair projects these studies typically involve the collection and culturing of microorganisms from the environment like soil, household surfaces, water, etc.

Research with unknown microorganism can be treated as a BSL-1 study under the following conditions:

1. The organism is cultured in a plastic petri dish or other standard non-breakable container and sealed. Other acceptable containments include Petro Film and doubled heavy-duty (2-ply) sealed bags.
2. The experiment involves only procedures in which the petri dish remains sealed throughout the experiment, for example counting the presence of organisms or colonies.
3. The sealed petri dish is disposed of in the appropriate manner by autoclaving or applying a bleach solution by the teacher or Designated Supervisor (see ISEF forms for [definition/description of a Designated Supervisor](#)).
4. All BSL-1 containment procedures must be followed (see ISEF forms for procedures).
 - BSL-1 containment is normally found in water-testing laboratories, in high schools, and in colleges that teach introductory microbiology classes.
 - Work **MUST** be conducted on an open bench or in a fume hood.
 - Standard microbiological practices are used when working in the laboratory.
 - Decontamination can be achieved by treating with chemicals disinfectants or by steam autoclaving.
 - Lab coats are required and gloves highly recommended.
 - The laboratory work **MUST** be supervised by an individual with general training in microbiology or a related science.

NOT ALLOWED using the OSSEF MS-EZ Forms:

- Opening a culture for identification, sub-culturing, or isolation.
- Swabbing in an area with a high likelihood of fecal contamination, i.e., bathrooms and litter boxes.
- Swabbing a person.
- Tasting any component or product of a research study using microorganisms.