PROJECT SUMMARY
(OSSEF MS-EZ Form)

In the space below, write a detailed abstract of about 1000 words. The abstract should include the following information: purpose of the experiment, procedures used, data collected, and conclusions. Be sure to address the safety assessment questions that are specific to your type of research (questions found in the OSSEF MS-EZ Information Document). For team projects only one OSSEF MS-EZ Project Summary Project form needs to be submitted by the team.

PROJECT TITLE: _____

STUDENT NAME(S): _____

_____

1. Background Information, Rationale or purpose for conducting the study and Research Question. (~300 words)

2. Details of the methods/procedures used to conduct your study. If applicable to your project, address the safety assessment question for your research. (~300 words)

3. Results: data collected. Include tables and graphs used to display data. Please note that you will need to attach your tables and graphs rather than pasting them into this space.

4. Conclusions drawn. Explain if your research question/hypothesis/claim was supported; applications to your research. (~300 words)

2022-2023
OSSEF Middle School Easy Form
(OSSEF MS-EZ Form)

**** Each student on a project must fill out the OSSEF MS-EZ Form***

Check one:

☐ This was an Individual Research Project.

☐ This was a Team Research Project. List the name(s) of each team member, putting your name on line #1.

1. _____
2. _____
3. _____

Required: Check at least one of the following research options. This project involved:

☐ Human Subjects

☐ Human or Animal Tissues

☐ Hazardous Chemicals Activities and Devices

☐ Microorganisms

☐ Vertebrate Animals

☐ None of the Above

Student Acknowledgement: I understand the risks and possible dangers of my research project. I certify that this project is the result of only my (or my team's) effort.

_____	_____	_____
Student's Printed Name	Student's Signature	Date Signed

Student School: _____

Student Email: _____

Teacher Approval: I understand the risks and possible dangers involved in my student's science/engineering research project. I have read and understand the ISEF Rules and Guidelines. I agree that this project fits with the OSSEF MS-EZ guidelines and I will make sure that my student safely and successfully conducts his/her research under the ISEF guidelines.

_____	_____	_____
Teacher's Printed Name	Teacher's Signature	Date Signed

Teacher Email: _____

Parent/Guardian Approval: I understand the risks and possible dangers involved in my child's science/engineering research project. I am aware of my child's research project and I consent to their participating in that research. If experimentation occurs at home, I agree to supervise my child throughout the project.

Photo Release: By checking the box, I give the OSSEF (and Oklahoma State University) permission to use my child's name and/or image(s) in all forms and media. I waive the right to inspect or approve the product in which it is used, and I release OSSEF/OSU from all monetary obligations for use of the name and/or image. ☐

_____	_____	_____
Parent/Guardian's Printed Name	Parent/Guardian's Signature	Date Signed

Parent Email: _____

Middle School (MS)-EZ Rules

Oklahoma State University will host the
2023 Oklahoma State Science and Engineering Fair (OSSEF)
Friday March 24 and Saturday March 25, 2023.

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 Wednesday March 1, 2023 at 11:59 pm. ***No projects will be accepted after Wednesday March 1, 2023***.

OSSEF Middle School Form Options

NEW FOR 2022-2023

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

Only students who complete and submit the appropriate Regeneron ISEF forms/paperwork, Quad Chart, and 2-minute Project Video will be eligible to be judged for recognition awards *from Society for Science's middle school STEM competition* (sponsored by *Thermo Fisher Scientific*).

Option 1. The new OSSEF Middle School (MS) - EZ Form.

Middle school students in 6th – 8th grad have the option to follow the new OSSEF MS-EZ rules and submit their project using the new OSSEF Middle School EZ form.

- This option allows some types of middle school research projects involving human subjects, vertebrate animals, microbes, hazardous substances, and human and animal tissue to be exempt from the ISEF forms.
- The OSSEF MS-EZ Form must be completed by the Student and Adult Sponsor (see OSSEF MS-EZ Form).
- The form asks for the student's email address, parent's or guardian's email address, and teacher's email address, home phone number, grade, project title and a 5-6 sentence abstract/summary of the project.
- A detailed description of the procedures used and a materials list must be submitted.
- Safety procedures on how the student handled human subjects, vertebrate animals, microbes, hazardous substances, or human and animal tissue must be provided.
- If the procedure does not include enough detail, the SRC will reject the project or require appropriate ISEF forms.
- After the form is printed, each student (including each student in a team project) is required to get the document signed by their parent/guardian.

Option 2. The appropriate ISEF Forms/Paperwork (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.

Option 3. The appropriate ISEF Forms/Paperwork (i.e., 1, 1a, etc.), AND a Quad Chart and 2-minute Project Video

Only students who comply with Option 3 will be eligible to be judged for recognition awards *from Society for Science's middle school STEM competition* (sponsored by *Thermo Fisher Scientific*)

- Students who choose to conduct a project outside of the OSSEF MS-EZ Rules **must** follow ISEF rules and complete the ISEF forms.
- Schools with students whose projects are outside of the OSSEF MS-EZ Rules **must** hold a Scientific Review Committee meeting with the School Principal, a Science Teacher (other than 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

Take note that if the proposed research project does not align with OSSEF MS-EZ Rules, the student is required to follow ISEF rules.

Middle school teachers and students can use the OSSEF MS-EZ rules for basic investigations. 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. The information in Table 1 is intended to outline which set of rules applies to specific situations. Please contact OSSEF State Director Dr. Julie Angle at Julie.angle@okstate.edu if you have questions.

While some projects are 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 projects that do and do not qualify for the OSSEF MS-EZ form (Option 1 above)

Type of Project	*Projects Allowed to Use OSSEF MS-EZ Rules*	*OSSEF MS-EZ Rules Allowed with Restrictions*	*Projects NOT Allowed to use OSSEF MS-EZ Rules*
Involving Humans	Passive Observation (with no manipulation of the environment)		Ingesting anything, exercise, survey tests, fingerprinting, heart rates
Involving Hazardous Chemicals, Activities and Devices*		Safety Assessment for Hazards must be conducted and included in procedures	Firearms, explosives, Class III & IV lasers, DEA controlled substances, prescription drugs, radiation, strong acids or bases, liquid nitrogen, pressurized gas
Involving Vertebrate Animals*	Investigations involving observation of zoo animals, wild animals or pets	Behavioral studies of pets	Drastic changes in home environments, negative reinforcement
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		Anything else
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.**	BSL-2 or higher microbes. **Must be done in a lab with ISEF forms.**

***This symbol means that a Safety Assessment is required within the procedures.**

Details - OSSEF MS-EZ Rules for Middle School Projects

Human Subjects

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. Research projects involving human subjects that do not align with the OSSEF MS-EZ rules MUST follow the ISEF rules.

For example, it is acceptable for a student to observe how many children play on the monkey bars vs. the slide at the park but it is NOT ALLOWED if a student observes how may children play on the monkey bars vs. the slide at the park and then asks the children why they prefer one over the other. The researcher may not manipulate an environment to observe how people respond to the manipulation. It is also unacceptable for a teacher to administer a survey or a test to her class on behalf of the researcher. It is acceptable to use data from the Internet that is publicly available for analysis.

Not Allowed Under OSSEF MS-EZ Rules

- Surveys or tests
- Eating, drinking, or tasting anything, including food, candy or water
- Exercise studies
- Consumer products testing involving human subjects
- Taking fingerprints
- Measuring heart rates

Human and Vertebrate Animal Tissue

The following human and animal tissues are allowed using the OSSEF MS-EZ form.

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

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

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.

Vertebrate Animals

OSSEF MS-EZ Checklist for Vertebrate Animals

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 it.
- The animal died during this project.
- The animal got sick during this project.
- This activity is not normally performed by this type of animal (for example: fish swim, cats do not).
- This activity will cause the animal stress, pain or fear.

OSSEF MS-EZ Safety Assessment for Vertebrate Animals

The following MS-EZ Safety assessment questions need to be included in the project procedures.

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?

Two types of Vertebrate animal projects are allowed using the OSSEF MS-EZ form.

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. Students cannot purchase or acquire a new pet for the sole purpose of their research project.

   Allowed: a student observes which colored dish a dog prefers to drink from.

   Not Allowed: adding food coloring to water to see which color the dog prefers.

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 Chemical, Activities or Devices.

OSSEF MS-EZ Safety Assessment for Hazards

The following OSSEF MS-EZ Safety Assessment statements **MUST** be addressed and included in the project procedures.

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.

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 safety assessment includes adult supervision.

NOT ALLOWED Under the OSSEF MS-EZ Form

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

Microorganisms

OSSEF MS-EZ Safety Assessment for Microorganisms

The following OSSEF MSEZ Safety Assessment questions **MUST** be included in the project procedures for every microorganism experiment:

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 microorganisms are approved without special precautions, but tasting the product as part of the experiment is not 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 exempt if cultured in a petri dish environment, 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 microbe projects can only be 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) but not obtained from a plant. Unknown specimens cannot be collected from living things such as 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, and
    - Pseudomonas fluorescens.

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 containment includes 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 are followed (see ISEF forms for procedures).

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.

All BSL-1 containment procedures **MUST** be followed.

- 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.