



SCIENCE FAIR HANDBOOK

Renville County West
Grades 3-6

2018-2019 Science Fair Calendar

July 2018						
Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

July	
4	Independence day

August 2018						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

August	
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September 2018						
Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

September	
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October 2018						
Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16				20
21	22	23	24	25	26	27
28	29	30	31			

October	
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November 2018						
Su	M	Tu	W	Th	F	Sa
			1	2	3	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

November	
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December 2018						
Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

December	
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January 2019						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January	
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4	Checkpoint #1
17	Science WorkNight

February 2019						
Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

February	
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8	Checkpoint #2
19-22	Projects Displayed

23	SCIENCE FAIR 2019
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March 2019						
Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

March	
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April 2019						
Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

April	
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May 2019						
Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

May	
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June 2019						
Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

June	
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Note To Student

Congratulations on participating in a fun and exciting program – the Science Fair.

Through a science fair project you can learn what it is like to think like a scientist, to investigate, and experiment in an area that interests you, and to share your results with other students and adults.

IMPORTANT INFORMATION:

DATES TO REMEMBER:

November 14, 2018 - Project entry form DUE – hand in to your instructor

January 4, 2019 - Checkpoint #1 : data is collected and first draft of project is ready to present to your instructor

February 8, 2019 - Checkpoint #2 : Final draft of project is ready including display board

February 19-22, 2019 - Project displayed in the school media center

February 23, 2019 - Science Fair at Renville County West Gold Gymnasium

The **SCIENCE FAIR HANDBOOK** is your guide to getting started and finishing your project successfully. Be sure to read through it carefully.

ENJOY DISCOVERING SOMETHING NEW IN SCIENCE!

Note To Parents

Thank you for supporting your child in their decision to be involved in this year's Science Fair. The experience is sure to be a time of discovery and learning!

We hope the following suggestions will be helpful as your child develops his/her project:

1. Please remember that the most important ingredient in any project is the amount of work the student accomplishes, how much knowledge he/she acquires, and how much initiative is displayed. Many abilities are developed during the process of researching, organizing, reporting, and presenting.
2. Although it is to be the student's effort, there is no substitute for a parent's support.
3. Do not worry about the project's performance at the science fair. If strengthened thinking skills and increased knowledge have occurred, then a prize has truly been won.
4. Areas in which a parent's assistance is necessary:
 - a. SAFETY
 - b. **Transportation will be needed** to transport the project to the science fair and any meetings scheduled beforehand that will help your child prepare.
 - c. **Supply a card table** to display your child's project on the day of the fair.
5. Areas in which a parent's assistance may be welcome include:
 - a. Suggesting project ideas.
 - b. Transportation to libraries, museums, businesses, or any other source of project information.

The date of this year's Science Fair is **Saturday, February 23, 2019**. It will be held at the RCW Gold Gymnasium.

The Regional Fair in Mankato for 3rd – 6th graders is TBD.

Please take the time to read through the packet of information and especially the **SCIENCE FAIR HANDBOOK** your child receives. It is full of helpful information to get your child started, and finish the project successfully.

Also, please complete the Adult Volunteer form and return it to your child's teacher.

Thanks again for participating in and supporting this expanded learning program.

Sincerely,
Michelle Mortensen

SCIENCE FAIR PROJECT CATEGORIES ELEMENTARY DIVISION GRADES 3-6

Project Descriptions:

This list of category descriptions, followed by examples of types of projects belonging to each, is designed to help students think of possible project ideas. All elementary projects are registered into one of these categories.

Keep in mind that all projects must be **EXPERIMENTS** and follow the scientific method. Demonstrations are **NOT** accepted into the fair.

Botany: agriculture, plant growth, plant diseases, plant behavior, plant cells, bacteria, fungi, etc..

Consumer Product Testing: testing of products; i.e. soaps, paper towels, batteries, bubble gum, etc..

Earth and Space Science: geology, geography, meteorology, astronomy, rocks, minerals, soils, volcanoes, weather, fossils, gravity, atmosphere

Engineering and Computers and Math: application of scientific principles to practical ends as design, construction and operation of structures, equipment, and systems, probability, mathematics

Environmental Science: pollution (air, water, land, noise...), waste disposal, environmental change (heat, light, irrigations, erosion), ecology

Medicine and Health: medicine, dentistry, pathology, ophthalmology, nutrition, sanitation, disease, pediatrics, dermatology, allergies, speech and hearing, biochemistry, food additives, human genetics, cells

Physical Science: optics, acoustics, electricity, magnets, simple machines, plastics, fuels, crystals, chemistry

Zoology and Humans: animal genetics, mammals, birds, reptiles, amphibians, fish, insects, anatomy, physiology, behavior, veterinary medicine, psychology, sociology, learning, public opinion, surveys

What is the effect of hand washing on mold growth?
Which food gets moldy the fastest?
How much light is needed to effect plant growth?
What light is best for growing corn?
Which brand of gum keeps its flavor the longest?
What fingernail polish stays on the longest?
Which stain remover works the best?
Does wheel size change the distance that a car travels?
What product bests protects eggs from cracking?
How does exercise effect your heart rate?
What drinks cause tooth decay?
Which bottle is the highest pitch?
What pop is hardest on your teeth?
Does temperature at which you store popcorn affect the amount of kernels that are popped?
Which soap bubble is the longest lasting?
Which will be the favorite perfume scent?
Is a hamster more active during the day or at night?
What fertilizer makes plants grow better: organic or commercial?
What is the best way to keep food fresh?
Which brand of batteries will last the longest??
Which stain remover works the best?
Do different types of soil have the same weight?
Does chewing gum affect the temperature in your mouth?
What kinds of coins make the most electricity?
What liquid does food coloring absorb into the fastest?
Which candy color will melt the fastest, or slowest?
Which liquids conduct electricity the best?
Which paper towel absorbs the best?
What makes ice melt faster?
Which type of wood is strongest?
Which balloon makes the best rocket?
How does temperature affect the size of building materials?
What is the capillarity of soils?
Which fruit produces the most electricity?
Which water temperature has the highest solubility?
What pop is the most corrosive?
Boys vs. Girls: Who can tell the difference between low-fat and regular fat foods?
What toys do dogs prefer?
What brand of popcorn creates the least amount of Old Maids?
Which building design is the strongest?
What is the lung volume between a smoker, non-smoker, and ex-smoker?
Which additives make the strongest gelatin?
Which type of pop makes the biggest geyser?

SCIENCE FAIR PROJECT ENTRY FORM
You must have this project approved before beginning

Student's name _____ Grade _____

School _____ Teacher's name _____

Parent Name _____ Phone number W: _____ H: _____

How many students will be working together on this project?

_____ One

Will you need electricity to run your project? YES _____ NO _____

Proposed Project Title _____

What I plan to do:

Student's signature _____ Date _____

Parent's signature _____ Date _____

APPROVAL GRANTED

Teacher's signature _____ Date _____



8 STEPS TO PREPARE A SCIENCE FAIR PROJECT

1. **SELECT A TOPIC:** Choose something you're interested in and something you want to learn more about. Talk to parents, teachers, and others for ideas. A hobby might lead to a good topic, and don't forget to look through science books and magazines for ideas.
2. **RESEARCH:** Collect information about the topic you chose. An encyclopedia will provide an overview, but go beyond that and collect information from books, magazines, CD roms, etc. Contact experts or companies that might be able to supply you with information.
3. **FORM A QUESTION:** Write the exact question you want to answer with your experiment (this question will serve as the title for your project).
4. **HYPOTHESIS:** Write down what you think will happen. Your results may or may not agree with what you thought – that is OK!
5. **EXPERIMENT:** Plan and organize an experiment under controlled conditions. **Keep careful records in a special notebook that is used only for this project.**
6. **REPORT:** This report will provide interested readers a look at your topic and research. It includes information collected during your research as well as a complete description of your experiment, data, and conclusions.
7. **EXHIBIT:** This is the visual presentation of your project. Use charts, graphs, and clear bold lettering on your display board so that it is interesting and eye-catching.
8. **JUDGING:** Plan how you want to explain your project to the judges the day of fair. Look neat, and speak clearly. Most of all, show that you enjoyed working on you project and learning something new.

SCIENCE EXPERIMENT WORKSHEET

Project Title (Should be a question)

Hypothesis (What I think will happen)

Equipment and materials I will use

Procedure (What I plan to do)

Results (What happened. Keep measurements, graphs, pictures, etc.)

Conclusion (What I found out by doing this experiment)

HELP FOR STEP 6: WRITING A REPORT

It is important to be able to share your project with others. One way to share information is in written form. Here are some guidelines for writing the report.

A. TITLE PAGE:

Include your project title, your name, school's name, grade, city, and state

B. BODY OF REPORT:

(Use your experiment worksheet to help you complete this section)

My question is... this should be the same as your title

What I have read or know about my topic before I began experimenting...

My hypothesis...what you think will happen

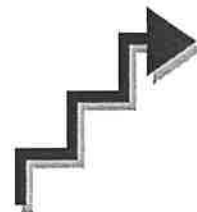
My experiment...materials I used, what I did step-by-step

My results...remember to attach your record of observations, and any charts or graphs of data you may have

My conclusions... Was your hypothesis correct? What variables were important?
Did you collect proper data? Did you collect enough data?
Could you improve your experiment in any way?
Include any other final thoughts about your project that you may have.

C. BIBLIOGRAPHY: see next page for more detailed information.

A list of sources used, including people who helped you.



HELP FOR STEP 7: EXHIBIT

This is a visual way to communicate to others so take your time and do a good job.

Make your project NEAT. It should be a display of your work, your ability, and your talents.

Your science fair instructor will give you a display board after you have completed your experiment.

Use charts, graphs, photographs, and clear bold lettering to highlight your display.

DO NOT put your name on the display board.

You will need to supply your own cardboard table the day of the fair on which to put your display board.

RECORDING OBSERVATIONS AND DATA

Use a separate notebook for recording all measurement and observations. Record information on a daily basis and consider the following:

- ◆ Make sure that in your data you have accurate **metric measurements**. Give masses in grams, volumes in milliliters, and linear measurements in millimeters or centimeters.
- ◆ It is better to have too much data than not enough. **KEEP LOTS OF NOTES!**
- ◆ When making observations record the date and time.
- ◆ Consider taking photographs to be used in your research paper or as part of your display.

HELP FOR STEP 8: JUDGING

This is an important part of your project so take time to plan and practice the presentation you will make to the judges.

Here is an approach you may wish to use for making your oral presentation:

1. Greet the judges and introduce yourself
2. Give them a copy of your abstract and research paper
3. Give the title of your project, your grade, and school
4. Tell how you became interested in the topic
5. Give some background information on your topic
6. State your hypothesis
7. Discuss what you found in your research
8. Describe the step-by-step procedure you followed. Refer to any equipment you brought and/or photographs
9. Explain the results of your experiment and be sure to discuss the control group and variable tested. Refer to any charts or graphs you may have made.
10. State your conclusions
11. Ask the judges if they have any questions
12. Thank the judges for their time and any suggestions they may have offered to improve your project

Good manners, nice clothes, and enthusiasm for what you're doing will help impress the judges. Here are some tips:

1. Make good eye contact with your judges
2. Stand up straight
3. Speak clearly with confidence
4. Relax, smile, and have fun!



Student Name _____

Project Number _____

Project Title _____

Renville County West
Science & Engineering Fair

Judging Form

- Judges: (1) Circle the relative point value
(2) Fill in the point blank
(3) Total the points
(4) Enter the ribbon

Rating System: 1 = Poor
2 = Fair
3 = Satisfactory
4 = Good
5 = Excellent

Scientific Thought

Does the project follow the scientific method?

(hypothesis, method, data, conclusions)

Is the problem clearly stated?

Are the procedures appropriate, organized,
and thorough?

1 2 3 4 5 _____

Is the information collected accurate and complete?

Does the study illustrate a controlled experiment
that makes appropriate comparisons?

Are the variables clearly defined?

1 2 3 4 5 _____

Are the conclusions accurate and based upon
the results?

Does the project show the child is familiar with
the topic?

Does the project represent real study and effort?

Comments:

1 2 3 4 5 _____

Creative Ability:

How unique or original to the student is this
project in the question being asked?

1 2 3 4 5 _____

How unique or original is this project in the
design or use of equipment?

1 2 3 4 5 _____

Is it significant and unusual for the age of this student?

Does the project demonstrate ideas arrived by the
student?

Comments:

1 2 3 4 5 _____

Understanding:

Does it explain what the student learned about the topic?

Did the student use appropriate literature for research?

Is a list of references or bibliography available?

In the exhibit, did the student tell a complete and concise
story, and answer some questions about the topic?

Comments:

1 2 3 4 5 _____