

GOLD RIDGE ELEMENTARY



JEN MUELDER SCIENCE FAIR!



MAJOR DATES

**1/3 KICK - OFF
AND REGISTRATION
DEADLINE WITH FEE**

WEDNESDAY, 03:00 - 04:00, D5

2/28 WORKSHOP

WEDNESDAY, 03:00 - 04:00, D3

4/2 SCIENCE FAIR!

8:25 AM - 02:35 | STUDENT VIEWING

6:00 PM - 07:00 | FAMILY VIEWING

7:00 - 07:30 | AWARDS

CALLING ALL JR. SCIENTISTS!

Gold Ridge Elementary School invites students in all grades to perform an investigative or engineering science project and present their findings in the spring. "Guiding packets and poster boards will be provided at the optional "Kick - Off" meeting. Projects and experiments will be conducted at home with an opportunity for additional support at the workshop.

For project ideas and additional information, please see the registration form by scanning the QR code below.

\$10 PARTICIPATION FEE



Includes poster board, 1 t-shirt, certificate, and award opportunity



Return to Front Office or bring to Kick-Off
Checks made payable to Gold Ridge Elementary



Additional t-shirts can be purchased for \$10 during registration.



Office:
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Ms. Lira
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Ms. Masterson
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Welcome!



JEN MVELDER SCIENCE FAIR!



Kick - Off Workshop

January 3, 2023 | 3 - 4 PM

Ms. Lira Ms. Hopkins Ms. Masterson

Register
Here!



What to Expect

- ❖ To spend **multiple** weeks researching, observing, experimenting, and performing your science project at home
 - *Use the guiding packets to help!*
- ❖ Post your process and findings on the display board
 - *Displays will be dropped off the morning of the fair for judging to take place*
- ❖ Ribbons and certificates will be awarded at 7:30 PM at the event.
 - *There will be a 1st, 2nd, 3rd place winner for each grade level as well as honorable mentions.*

"How do I start?"

CHOOSE 1



INVESTIGATIVE

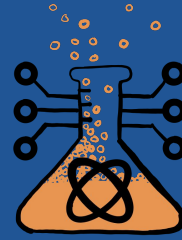
- ☒ Ask a question
- ☒ Conduct experiments and observe to find an answer



ENGINEERING

- ☒ Identify a need or problem
- ☒ Build / create solutions and test / observe for success





INVESTIGATION PROJECTS

- ❑ Predict and plan to answer a question
- ❑ Investigate
- ❑ Look for more information
- ❑ Observe/test
- ❑ Explain



Examples:

- Which environment will...?
- Which soap will...?
- How much will it take to...?
- If I change... what will happen to...?



ENGINEERING PROJECTS

- ❑ Design to solve
- ❑ Look for more information
- ❑ Build design
- ❑ Observe/test
- ❑ Explain

Examples:

- Build it using...
- Build a functioning model of...representing...
- Build a small scale system of...

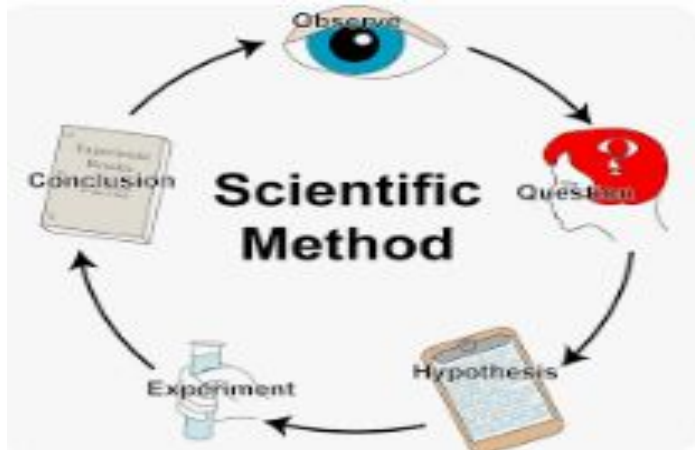


Process

Investigation and engineering processes can be repeated to get closer to solving problems, answering questions, and meeting new challenges



Investigation



Engineering



**Now
What?**

- 1. Choose one:
Investigation or
Engineering.**
- 2. Complete the Grade
Level Guiding Packet as
you go**

Investigation for grades TK and K

Name _____ Grade ____ Teacher _____

Report: Investigation (Grades TK - K)

Question

Hypothesis

Draw what you think will happen in your investigation

Plan

Draw your investigation plan

Draw what you plan to see happen?

Materials

Draw a list of what you will use

Conclusion

What happened?

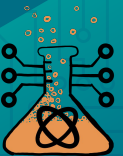
Did your investigation answer your question? Explain.

What did you learn? ?

Background

Read books and watch videos about your topic

What did you learn? Draw pictures.



Investigation for grades 1 and 2

Name _____ Grade _____ Teacher _____

Report: Investigation (Grades 1 - 2)

Question

What question would you like to answer?

Hypothesis

What do you predict the answer to your question is? (If _____ is changed, then _____ will happen.)

If...

then...

Investigation plan

What is the one thing that you plan to change? Add more or take away more of what (time, heat, number, volume, etc) while everything else is kept the same?

What is the one thing you want to observe when you are watching what is happening in your investigation? Examples: How long does something take? What color does it turn? How hot is it?

Materials

List what you will use in your investigation

Investigation step by step

Write how to do the investigation step by step

1.

Background Research

Read books and watch videos about your topic

What information about your topic is helping you understand your investigation?
Write notes and draw pictures

Background

Write about what you learned in books and videos in complete sentences.

Observations

What happened?

Conclusion

What happened?

g to happen?

er your question? Explain.

t have?



Investigation for grades 3, 4, and 5

Dependent variable: What outcome do you plan to measure to see if that one thing you planned to change (Independent variable) is making a difference?

Controlled variables: List all the materials and methods that you use in your investigation making sure all parameters are controlled.

Name _____ Grade _____ Teacher _____

Report: Investigation (Grades 3 - 5)

Question

What would you like to answer in your investigation? Write a question that can be investigated by changing one thing while keeping everything else the same.

Hypothesis

What do you predict the answer to your question is? (If _____ is changed, then _____ will happen.)

If...

then...

Design your Investigation

Variables

Independent variable: what is the one thing that you plan to change (amount of time, heat, number, volume, etc?) while everything else is kept the same (controlled)?

Materials and Equipment

List materials and equipment you will use.

Experimental Procedures

Write how to complete the experiment.

1.

Background Research

What information helped you understand any part of your investigation better? First, know where your text evidence from either a book, article, video, or website came from.

Name of author (Last, First) or company or organization?

Year of Publication?

Title?

URL (Retrieved from www.....)?

Note important information from the text

Background

Write a paragraph.

Make sure to cite text evidence in your paragraph helping the reader understand your investigation. Use the quote from the text as evidence. Use the quote ("_____"). After the quote in quotation marks, organization and the year of publication in parentheses.

"Quote written exactly from the text," (name of organization, year).

Data Analysis and Discussion

Show the data that was collected organized in a table

What does your investigation show?

Draw to explain.

Conclusion

Summarize your data results from your investigation. Use information from your background research to help explain your decisions and results.

The data results show that...

This makes sense because...

What did you think was going to happen? Restate your hypothesis and explain if the independent variable you changed directly changed the dependent variable (the outcome you measured).

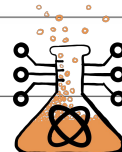
Before the investigation, I predicted if.... then....

The change in _____ did (or did not) directly change _____.

Was your investigation a success? Were there any errors in the design of the investigation? Explain.

The investigation was (a success, unsuccessful) because...

What would you like to change to improve your investigation? Or how can your investigation be used for something in the future?





Engineering for grades TK and K

Name _____ Grade ____ Teacher _____

Design Report: Engineering (Grades TK - K)

Project

Draw your idea

Design

Draw what you want it to have or do

Background

Read books and watch videos about your topic

What did you learn?
copy and draw pictures

Materials

Draw a list of what you used

Conclusion (After the Project)

Draw your final project

Did you need to make changes? (Yes or no)

What did you learn?

Engineering for grades 1 and 2



Name _____ Grade ____ Teacher _____

Design Report: Engineering (Grades 1 - 2)

Project

What do you want to build?

Design

What would you like your design to do?

Draw and label your design

List what you want your design to do or have.

Background Research

Read books and watch videos about your topic

What information about your topic is helping you understand your design?
Write notes and draw pictures

Background

Write about what you learned in books and videos in

Materials

List what you used to build your design

Observations

What did you see?

The Design

Write how to

1.

What am I learning

What do your obs

Do you need to m

Conclusion

What did your design do?

Did your design do what you wanted?

What choices did you like?

What changes would you make next time?

What other questions do you want answered after your design project is done?

Engineering for grades 3, 4, and 5



Name _____ Grade ____ Teacher _____

Design Report: Engineering (Grades 3 - 5)

Problem or Challenge

What is the problem or challenge?

Design

In one to two sentences, state what you would like to design and what you would like that design to do.

Draw and label your design

Constraints and Requirements

Constraints: List what is holding you back or needed to overcome in your design to solve the problem or complete the challenge.

Requirements: List what you want to make

Background Research

What information helped you understand any
how where your text evidence from either a
me from.

Name of author (Last, First) or company
or organization?

Year of Publication?

Title?

URL (Retrieved from www.....)?

Note important information from the text

Material and Equipment

List materials and equipment you will use for your design

The Design

Write how the design was made step by step. Number your

1.

Background

Write a paragraph.

Make sure to cite text evidence in your paragraph explaining background information helping the reader understand your design better. Make sure to introduce a quote from the text as evidence. Use the quote by placing it inside the quotation marks ("_____"). After the quote in quotation marks, state the last name of the author or organization and the year of publication in parentheses (____).

"Quote written exactly from the text," (name, year).

Test

Explain how you tested your design to see if it solved the problem or met the challenge. What kind of data was collected?

Data Analysis and Discussion

Show the data that was collected organized in a table

Conclusion

Summarize your data results from your test(s). Use your results to explain if your design did what you designed it to do. Use information from your background research to help explain your decisions and results.

The data results show that...

This makes sense because...

State whether your test results show that your design worked.

Based on the results, the design (did or did not do) what it was designed to do because..

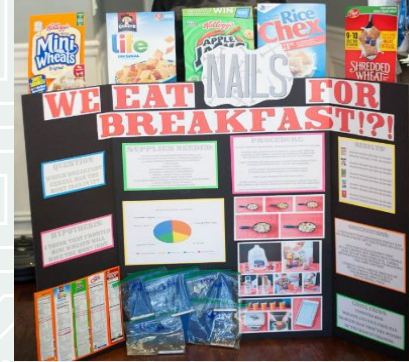
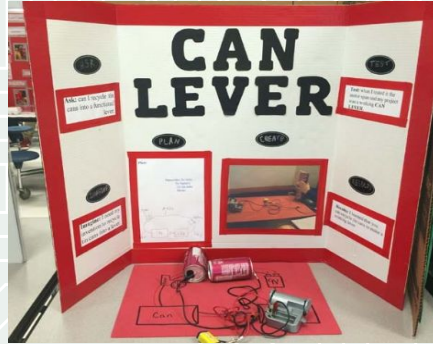
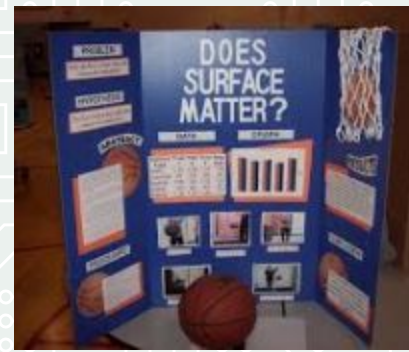
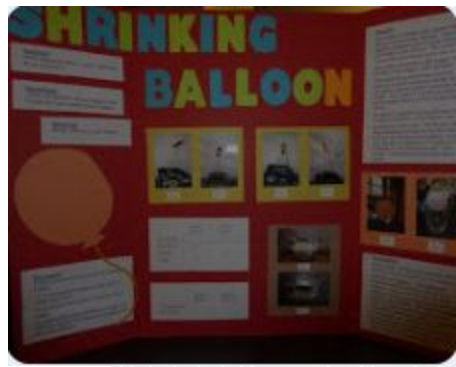
How did your design choices and/or changes help in your design?

Suggest changes in the design process and possibilities for the future.

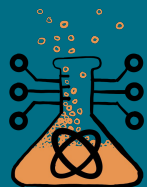
The major thing that should be changed to improve the design would be..

This design could be used for..

What additional research would you want to do based on what you learned?
Are there any questions that came up during your design process left unanswered?



DISPLAY EXAMPLES



INVESTIGATION

MATERIALS	TITLE		RESULTS & INTERPRETATION
	QUESTION	HYPOTHESIS	
	PICTURES		
PICTURES			GRAPHS
DATA	BACKGROUND RESEARCH	PROCEDURES	CONCLUSION



ENGINEERING

MATERIALS	TITLE		RESULTS & INTERPRETATION
	PROBLEM	PROPOSED SOLUTION	
	PICTURES		
PICTURES			GRAPHS
DATA/LOG BOOK	BACKGROUND RESEARCH	DESIGN	CONCLUSION

RESOURCES

Science Buddies

<https://www.sciencebuddies.org/>

Helpful Resources for School Science Fairs

<https://www.commonsense.org/education/lists/helpful-resources-for-school-science-fairs>

Let's make a goal!

I CAN...

- ❑ Create an experiment or come up with an idea using the guiding packet
- ❑ Perform my experiment or build my project
- ❑ Collect observations

By our next workshop

COMING UP...

Check - In Workshop

Wednesday, Feb 28

3:00 - 4:00 PM

Room D3

The Fair

Tuesday April 2, 2024

Multipurpose Room

8:35 am - 2:35 pm: Student Viewing

6 pm - 7 pm: Family Viewing

7 pm - 7:30 pm: Awards

Questions?

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Ms. Masterson kmasterson@fcusd.org