

Lincroft School Students:

We are so excited you have decided to participate in **STEMFest 2020!** Everything you need to know to complete an amazing project is in this packet. However, if at any time you have questions, please have one of your parents contact Michelle Oliveri mich224@gmail.com or Rachel Warnick rowarnick@gmail.com.

GOAL: The goal of the STEM Fest is to get you excited about science, technology, engineering and math and to provide an environment where learning and discovery are fun.

WHERE TO START: You will perform a simple project at home with parental supervision using [Scientific Explanation: Claim, Evidence and Reasoning - CER.](#)

- Question
- Claim: What is your answer to the question?
- Evidence: What specific observation or data supports your claim?
- Reasoning*: How does evidence support the claim? What explains why the evidence is linked to the claim?



**Grades K-3 do not need to include reasoning.*

CER Student Graphic Organizer

Question:

Claim: What is your *answer* to the question? It should be more than a "yes" or "no".

Evidence: What is a specific observation or data from the lab that supports your claim?

Evidence: What is a specific observation or data from the lab that supports your claim?

Evidence: What is a specific observation or data from the lab that supports your claim?

Reasoning*: How does evidence support your claim? What is the science principle that explains why evidence is linked to the claim?

Reasoning*: How does evidence support your claim? What is the science principle that explains why evidence is linked to the claim?

Reasoning*: How does evidence support your claim? What is the science principle that explains why evidence is linked to the claim?

CER CHECKLIST

C

CLAIM

- Does the claim answer the question?
- The claim should only answer the question. Does the claim lack an explanation or reasoning?
- Is the claim more than a “yes” or “no” answer?
- Is the claim a complete sentence?

E

EVIDENCE

- Is each piece of evidence relevant to the claim?
- Is there enough evidence listed to support the claim?
- The evidence should lack an explanation or reasoning. Is each piece of evidence strictly an observation or data from the lab?
- Is the evidence listed specific and not vague or a generalization?

R

REASONING*

- Is there a justification how each piece of evidence supports the claim?
- The reasoning should not simply repeat the evidence. Is there a link between the evidence and claim provided?
- Is the science principle explained why the evidence supports the claim?
- Is the reasoning written in complete sentences?

****Grades K-3 do not need to include reasoning.***



Sources: <https://www.modelteaching.com/wp-content/uploads/2019/04/CER-Student-Graphic-Organizer.pdf>, <https://www.modelteaching.com/wp-content/uploads/2019/04/CER-Checklist.pdf>

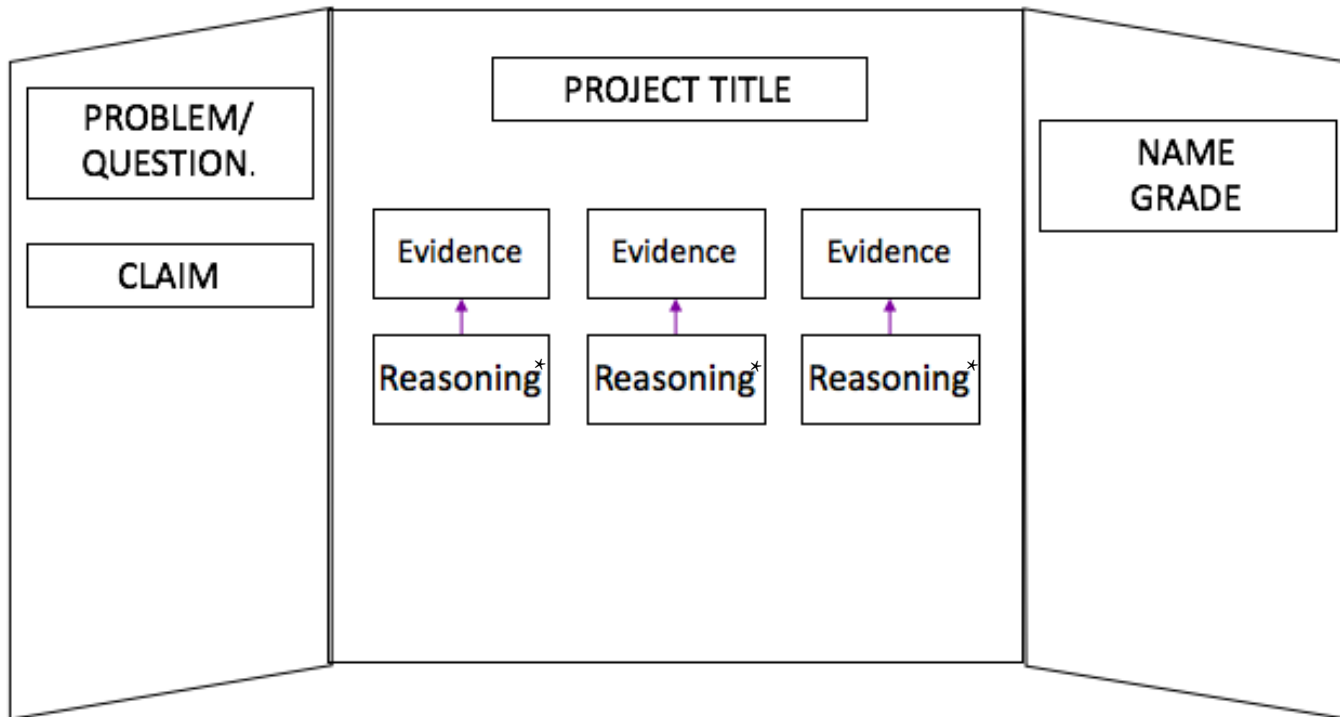
How do I share my project?

You will share your project at STEM Fest on a tri-fold presentation board. You do not have to prepare a formal spoken presentation! However, be prepared to share with students, teachers and parents' key information on your project, especially what you learned. Don't be nervous about sharing your project! Do your best and have fun!

How do I create a project board?

1. Document and present information on a 36" H x 48" L tri-fold poster board.
 - a. Elmer's or other brand tri-fold poster boards 36" H x 48" L are available through Amazon using the Lincroft PTA link. They are also available at Staples (in-store and online), AC Moore, Target and Walmart in store only.
 - b. Follow a presentation format for a tri-fold board similar to the ones below, which include the:
 - i. Title
 - ii. Question
 - iii. Claim
 - iv. Evidence (2-5)
 - v. Reasoning* (2-5)
 - vi. Name
 - vii. Grade
 - c. You may want to use a presentation application like PowerPoint or Prezi or record your experiment/demonstration. Laptops or iPads are permitted to be used in conjunction with the project board, but are not required. You will be permitted to use your school Chromebook.
 - d. Make a project title and put this across the middle top of the board.
 - e. Include the big question on the board.
 - f. Don't forget to include your Name, Partner's Name if applicable, Grade(s) and Teacher(s) on the board.
 - g. You are welcome to use technology, but there will not be internet access unless you are using your school Chromebook and electricity is very limited.
 - h. Photographs and recordings are a great way to share what you did.

****Grades K-3 do not need to include reasoning.***



What are some helpful hints to create a great STEMfest Poster Board?

- Students NOT parents are to create the poster.
- Use a font size of at least 16 points for your main body text. Anything smaller is too hard to read.
- Stick with traditional fonts like Arial, Times New Roman, Calibri or similar typefaces.
- Use *italics* or bold for emphasis, not for all your text.
- Don't place your text on top of a picture; that makes it difficult to read.
- Don't use ALL CAPS; THEY ARE MUCH HARDER TO READ.
- Don't use more than two or three different fonts on your board. Times New Roman for body copy and Arial for headings makes for a nice combination.
- Plagiarism is a no-no. Make sure you use references if they are choosing to copy information from a published source. This goes in your bibliography.

What information do I need to know for the day of the STEMfest?

- What to bring?
 - Your project presented on a tri-fold poster board that stands on its own
 - Any items that go in front of the display board (Laptops are permitted)
 - Pen, tape, glue and other quick-fix items in case the display board gets damaged in transit
- Do NOT bring the following items:
 - Hazardous chemicals
 - Food
 - Live insects or animals)

****Grades K-3 do not need to include reasoning.***



- Items to hand out. No materials may be handed out or tasted due to allergies. This includes food (rock candy, rock candy solutions, cookies, etc.) and non-food items (balloons, etc.).

Note: Consider using pictures or other media to display prohibited items.

- Can I perform a demonstration?
 - You can perform a controlled demonstration of your project (e.g. bubbles, volcanoes, reactions, etc.). Please ensure you have enough materials to demonstrate. Also, please bring in wipes and paper towels in case of spills.
 - If your project uses dry ice, one of your parents must handle the dry ice AND be present at all times.
 - Your plan for demonstrating the project must be reviewed before the fair. Please contact Michelle Oliveri mich224@gmail.com or Rachel Warnick rowarnick@gmail.com to discuss.
- Are there awards given as part of STEM Fest?
 - There are no awards given.
 - Each student will receive a certificate of recognition.
- Who do I contact if I have questions about what I can or cannot bring?
 - Please contact Michelle Oliveri mich224@gmail.com or Rachel Warnick rowarnick@gmail.com
- When do I drop off the project?
 - Students should arrive on January 23rd from 6:00 to 6:15 pm to set up their project. Students will be sharing projects with attendees from 6:30 to 7:30 pm.
- When do I take home the project?
 - All projects must be taken home at the conclusion of the STEM Fest. Any project left will be disposed of as there is no storage space.
- What do I do if I have questions?
 - Contact Michelle Oliveri mich224@gmail.com or Rachel Warnick rowarnick@gmail.com

FINDING A PROJECT: Start by looking on the internet for a project that looks interesting to you and is designed for elementary school students! You do not have to pick a project from the websites below, but we found some cool ones at:

- <https://www.pinterest.ca/radleyschem/lego-science-projects/?lp=true>
- <https://leftbraincraftbrain.com/28-days-of-steam-projects-for-kids/>
- <https://www.learningliftoff.com/10-fun-lego-science-activities/>
- <http://www.stevespanglerscience.com/>
- http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml
- <http://www.education.com/science-fair/>
- <http://www.all-science-fair-projects.com/>



- <http://www.planetsmarty.com/2017/02/science-fair-projects-with-lego.html>
- <https://thestemlaboratory.com/lego-stem-activities/>
- https://www.huffingtonpost.ca/2016/06/15/science-experiments-for-kids_n_10485620.html#gallery/560988/11