

Name: _____

Homeroom: _____

SCIENCE FAIR 2019-2020

Treasure this packet! You will need to come back to it over and over, so put it in a safe place in your folder.

[In case you need more motivation: You will NOT get another one of these packets. If you lose it, you will have to print out your own copy from msscheiber.weebly.com.]

Deadline	Task	Where/How to Hand In	Done
Wednesday, September 25	Parent signature acknowledging science fair deadlines	Science Fair packet	
Friday, September 27	Step 1: Identify 3 ideas that interest you. Write them as testable questions.	Science Fair packet	
Wednesday, October 2	Step 2: Choose and write final question for investigation	Google Classroom	
Wednesday, October 9	Step 3: Find 3 helpful sources	Google Classroom	
Wednesday, November 6	Step 4: Annotated bibliography AND hypothesis	Google Classroom	
Wednesday, November 13	Step 5: First draft of procedure, materials list, and data table	Google Classroom	
Wednesday, November 20	Step 6: Final procedure, materials list, and data table	Google Classroom	
Tuesday, November 26	Step 7: Data	Google Classroom	
Thursday, December 5	Step 8: Data analysis and conclusion	Google Classroom	
Wednesday, December 11	Step 9: FINAL PROJECT DUE ON POSTER	Complete poster	

All Google Classroom assignments are due by 8:15 AM.

****You will use the same document for the entire project. New steps will be added to the work you already have submitted so that we can see the history of feedback.****

I have read and understand these deadlines.

Student signature: _____

Date: _____

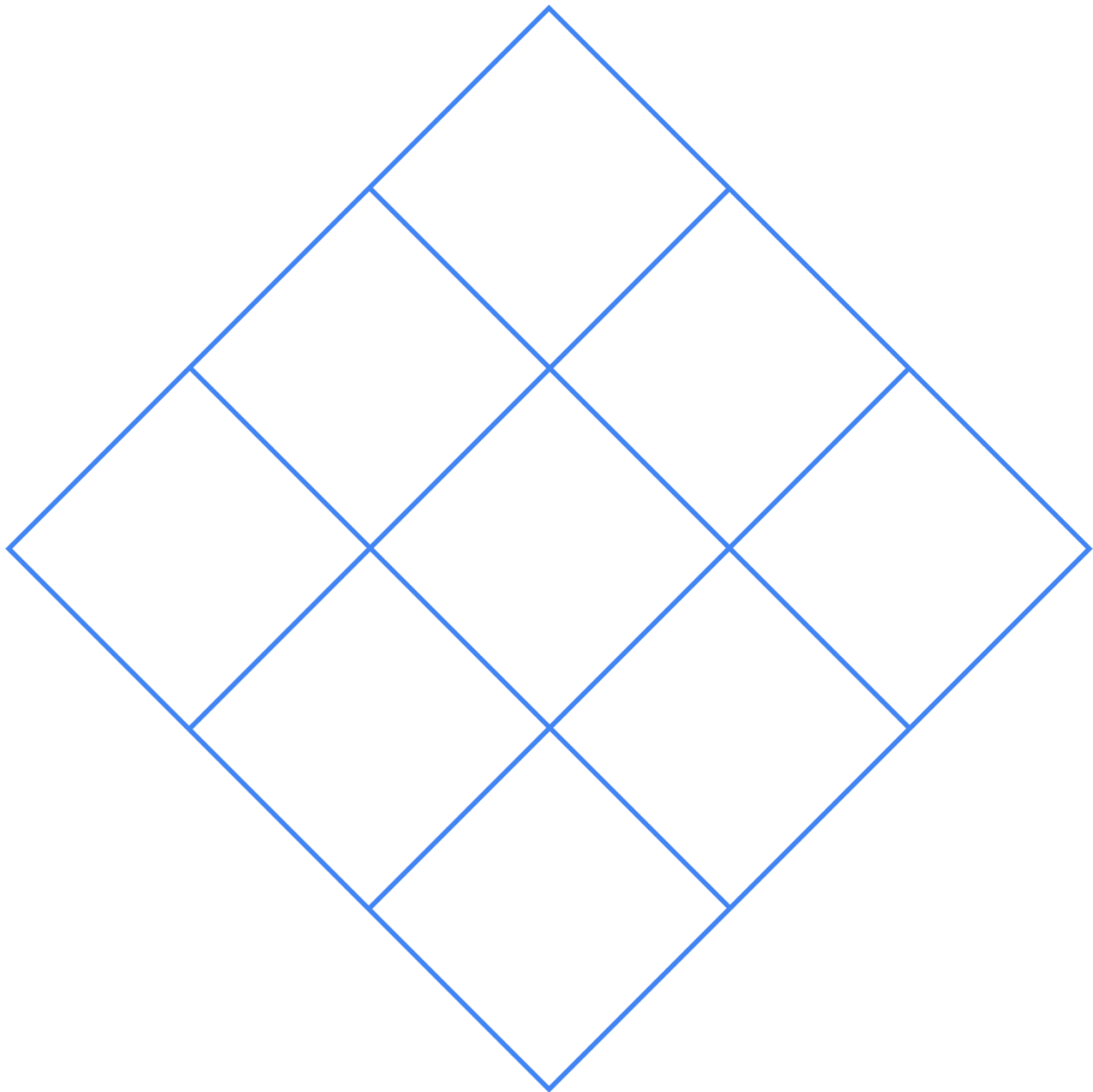
I, as the parent, will support my child in meeting these deadlines. I understand that the majority of the work for science fair will be completed in class independently. I will help my child get required materials and answer his/her questions, but I will not do the project for him/her, since this is a learning opportunity.

Parent signature: _____

Date: _____

Step 1: Topic Choice

1. Cut out each of the diamonds on the Idea Generator and read what is on them.
2. Glue the thing you are least interested in at the bottom.
3. Complete the diamond, working your way up, putting the things you find most interesting towards the top.
4. What are your favorite things about the top three (should be the most interesting)?



You will spend a lot of time with this project – choose things that genuinely interest you so your project will be fun for you to learn about!

Note: You may not copy a Science Buddies (SB) project. This is plagiarism and will result in an automatic zero.

Idea 1: _____

Idea 2: _____

Idea 3: _____

Ms. Scheiber's feedback

	Is it testable?	Is it testing only one variable?	Other comments
Idea 1	YES / NO	YES / NO	
Idea 2	YES / NO	YES / NO	
Idea 3	YES / NO	YES / NO	

Step 2: Final Topic Choice

Choose your final topic based on Ms. Scheiber's feedback above. You may need to re-write your question, depending on the feedback you received above.

Final question for investigation:

Step 3: Research for Sources

- Find three sources that give background information on your topic. In addition to using online sources, you are encouraged to think creatively about your sources:
 - Books, magazine/newspaper articles (plan ahead to go to the library!), podcasts, Netflix documentaries, museum exhibits, local experts, etc.
- All sources must be academic and reliable.
 - .org, .edu, or .gov are pre-approved
 - .com and .net may be appropriate if they are academic and reliable
- Your page should look like the one below. You will use the same document for the entire project, so be sure to set it up correctly now.
 - Also, title your document: First and last name Science Fair 2019-20

Name

Ms. Scheiber

Homeroom # Science

Date Assignment Is Due

Science Fair 2019-20

Question

Type your question/problem here.

Resources

Source 1

Name of book & author OR Name of article, author, & magazine/newspaper name
e.g. The Life Cycle of Plants, by Stan Lee

Source 2

Complete link to website OR information on source of other format
e.g. <https://science.howstuffworks.com/electricity3.htm>

Source 3

Complete link to website OR information on source of other format
e.g. Museum of Science and Industry exhibit on weather

Step 4: Annotated Bibliography and Hypothesis

- Review Ms. Scheiber's feedback on your sources. Ask any questions you have.
 - Find new source(s) if necessary.
- Read and annotate your sources.
- Based on what you have learned about your topic, write a hypothesis.
 - Hypothesis must be your best answer to your investigation question and include evidence.
- Create your annotated bibliography. Each source needs to have three parts:
 - **Citation:** Cite the source properly using APA format.
 - For more help, see The OWL at Purdue page on APA-style citations (also linked under Online Resources on msscheiber.weebly.com).
 - **Summary:** Summarize the source.
 - This should be 3-4 sentences.
 - **Reflection:** How does this fit into your science fair project? How can you use this source in your project? Has it changed how you think about your topic?
 - This should be 2-3 sentences.
- Academic honesty is essential. You must put all information into your own words, or you will receive an automatic zero. If you need any help understanding this or your source, please ask!
- Add to the same document as before. It should now look like this:

Name

Teacher (Ms. Scheiber)

Homeroom # Science

Date Assignment Is Due

Science Fair 2019-20

Question

Type your question/problem here.

Hypothesis

Write your hypothesis here.

Resources

Source #1

Bradford, Alina. "Turtle Facts." *LiveScience*. Purch, October 1, 2015, <https://www.livescience.com/52361-turtle-facts.html>. Accessed February 28, 2018.

Summary

This website tells me that turtles are omnivores. Different species eat different foods, such as insects, algae, and sea grass. Some turtles eat other fish after attracting them by pretending their tongue is a worm.

Reflection

This source helps me know what kind of foods to test for turtles' preference. I can use some of the foods listed, but I will not try things like candy or chips since turtles do not normally eat those.

***Note: Your annotated bibliography must include at least three sources

Step 5: First Draft of Procedure, Materials List, and Data Table

Procedure

- Think about how you will run your experiment to test your hypothesis. Consider:
 - How you will set things up
 - How long it will take
 - What you will measure or observe for data
 - How many times you will run your experiment (number of trials)

- Write the numbered steps of your procedure. Be specific and use details!

Materials List

- Make a list of the materials and equipment you will need to complete your experiment.
 - Include how much / how many of each item you need.
 - If there are any materials you would like to borrow from Ms. Scheiber, put an asterisk (*) next to them.
 - Ms. Scheiber will respond to the lab-requested list with whether or not the item and the quantity requested are available.

Data Table

- Prepare a blank data table with room to record all necessary data (observations, numbers, and/or measurements from your experiment).
 - Must include labeled rows and columns

- Your page should now look like this (along with the appropriate heading):

Question

Type your question/problem here.

Hypothesis

Write your hypothesis here.

Resources

The annotated bibliography is in this section.

Materials

½ cup oak leaves
½ cup grass clippings
1 turtle
1 tank, with log
1 water dish
*1 heat lamp

Procedure

1. Place ½ cup oak leaves in open petri dish.
2. Place ½ cup grass clippings in second petri dish.
3. ...

Step 6: Final Procedure, Materials List, and Data Table

- Review Ms. Scheiber's feedback on your first draft. Ask any questions you have.
- Make necessary changes.

Step 7: Data

- Run your experiment: Set things up, collect the data, and TAKE PICTURES FOR YOUR BOARD!
- Fill in your data table on your Google doc. Include all measurements, observations, and/or numbers.

Step 8: Data Analysis and Conclusion

Data Analysis

- Create a graph or diagram to interpret data visually.
- Consider: Does my graph or diagram show the most important data to help me answer my question?
- Be sure to include the Excellent Graph requirements:
 - o Three titles: top, x-axis, and y-axis
 - o Evenly spaced numbers (use at least half a page – do not make your graph tiny)
 - o A key (if necessary)

Conclusion

Answer these six required questions in paragraph format.

- Summarize the most important data in 1-3 sentences.
- Formulate a conclusion – what can you conclude about your original question based on your results?
- Explain why this research is important.
- Re-state your hypothesis and discuss whether or not *the data supported* it, using at least one specific number/observation as evidence.
 - o Do NOT write that your hypothesis is *right* or *wrong*!
- Discuss at least one possible error in your procedure:
 - o Describe the error.
 - o Describe how it might have affected the results.
 - o Describe specific changes you would make to avoid this error if you were to run the experiment again.
- State at least one new question that you could investigate to *extend* the results of this investigation.
 - o Explain why this question would be important to research.

Step 9: Final Poster

- The board must be a tri-fold board.
- All information must typed and printed (unless a hand-drawn piece is pre-approved by Ms. Scheiber).
- Must include photos of your experiment.

MUST go on the board (all students)

- Title (no more than 45 characters and spaces)
- Purpose/question
- Hypothesis
- Materials
- Procedure
- Pictures of experiment
- Data table
- Graph
- Conclusion

Optional on board

- Summary of background research
- Variables: independent, dependent, and controlled

See more detail below and on Ms. Scheiber's website.

Design Requirements (all students)

- All items must be typed
- Include color
- Organize neatly
- Size: No more than 61 cm (24") deep, 107 cm (40") wide, and 152 cm (60") high
- Attachments to the board must be either glued or taped neatly. No stapling of anything to the display board.

Regional Requirements (only for those interested in advancing)

- **Attach a copy of your Abstract** (up to 250 words), **Safety Sheet**, and **Endorsement(s)** (if necessary) **to the front of your display board.**
 - The Abstract and Safety Sheet can be reduced to one half of a page, 8.5 inches (vertical) x 5.5 inches (horizontal). Less than 75% reduction is not acceptable.
- Pictures, drawings, diagrams and video footage of experiment may be used. Computers may be used to enhance the presentation, but media presentations, such as Google Slides, are not acceptable.
- For engineering/design projects only (not experiments): The presentation may include graphs, charts, and demonstration of design apparatus only (must meet safety inspection guidelines).
 - The demonstration must be confined to your tabletop area.