



Prairie-Hills
Elementary School
District 144

PARENT ACKNOWLEDGMENT FORM

Dear Parent or Guardian,

We are excited to announce the **mandatory** Prairie-Hills Junior High Invention Convention. The Invention Convention is a free STEAM aligned (Science, Technology, Engineering, the Arts, Mathematics) program that teaches students to seek out problems and create solutions, a skill set once learned students will exercise throughout their lifetime, empowering them to make our world a better place. As we work toward the implementation of new science standards, Invention Convention allows students to use their imaginations and problem solving ability. This is the perfect opportunity for parents and students to work together on a creative, hands-on approach of engineering principles.

Today your child is receiving information concerning the necessary steps, timelines, project guidelines, and other important information re Invention Convention.

Listed below are suggestions on how you might support your child's progress on his/her project.

- Talk to your son or daughter about a problem he or she might be interested in finding out. Work together to identify a problem and brainstorm possible solutions. Take your son or daughter to the library or help him or her search online for information about the **topic**. Research must be conducted before conducting project. (See Timeline and Invention Questionnaire)
- Help your son or daughter think about an invention that would help solve the problem.
- 6th-8th Graders **are required to create their own inventions which have not already been patented**. (See Patent Search Information)
- Every student or team will be provided with **ONE** display board.
- Projects **should not** include anything involving fire, explosives, or anything else that would be a safety hazard to themselves or others.

Please note that before beginning any invention, your child's project must be approved by the teacher by completing the Intent to Invent form.

Through time management and project planning, your child will take on the responsibility of completing a project over at least a ten-week period. Your child will discover his or her creativity by identifying problems and figuring out how to solve them. Creating an invention, through its challenge to think critically and problem solve, is truly a real-world experience in innovation, similar to what scientists do in their careers.

If you have any question, please feel free to call your child's science teacher at (708) 210-2860. Please sign and return the slip below as acknowledgement of receipt of this packet ASAP.

Sincerely,

Prairie Hills Junior High Science Teachers

I acknowledge that I have received and reviewed the materials for the Invention Convention and I am aware that my child is required to complete a project. I also understand that my child may decide to work with a partner on this project. If so, I will allow my child time to meet with his/her partner outside of school for the successful completion of the project.

Student's Signature _____ Period _____ Date _____

Parent's Signature _____ Date _____

INVENTION CONVENTION



Basic participant rules and requirements are as follows:

Teams: Students may compete as an individual or as part of a team of four (4), but not both. There may not be teams of more than four (4) people. Both team members must be from the same grade. Both team members must be present for the judging and awards for the team to participate.

Inventor Journal: The Journal is a necessary step to document each participant's creative process and is weighed heavily in the judges' evaluation process; it must include the following:

- a description of the problem addressed by the invention
- a description of solution ideas
- a description of the invention
- a description of how the invention solves the problem
- a description of where the student researched the originality of their idea.

Students participating as part of a team may complete one Team Journal. Both signatures/inventors must be present on the Team Journal.

Model/Prototype: The goal of the convention is to create a working model. However, if you are unable to do so, your model must illustrate how the invention would work if the model was operational. Models must fit on a table top and cannot be larger than 2 feet by 3 feet in size. Electricity will not be available to inventors at the Convention, but students may use batteries. No live animals may be used in the display. Students participating as part of team may complete one model.

Oral presentation: Students should be prepared to give a presentation of 3-5 minutes to the judges and briefly explain the problem, the solution ideas (i.e. the process), and how the final invention works. All team members must be present and participate in the presentation.

Judging: Participants will be judged in three grade level categories: 6, 7, and 8. Judges will evaluate the Prototype, Journal, Oral Presentations, and Support Materials based on Communication, Process, Results - Intention, and Results - Invention. Please see the rubric.



Congratulations!

You have accepted the challenge of participating in the 2016 - 2017 Prairie-Hills Junior High School Invention Convention! All the handouts and information you will need to complete your project are contained in this packet. Read your timeline carefully so you know which handouts you should be reading as you work on your project. The most successful inventions are the simplest, so just remember KISS (Keep It Simple Scholars).

Four Common Means to Inventing

(Ways to think about inventing)

1. Improve upon a product. Change something and make it better.
2. Combine ideas. Put two or more inventions together to create something new.
3. Create a new use for an item.
4. Create an original invention—a totally new product or idea.

REMEMBER KISS (Keep it simple scholars)!!!



Invention Convention Timeline

October

1. Discuss inventions and the problems they solve. Use the “Invention Questionnaire” to identify a problem and an invention that may solve it. Books to read: *Milo’s Great Invention* by Andrew Clements, *So You Want to Be an Inventor* by Judith St. George and David Small, and *Imaginative Inventions* by Charise Mericle Harper.
2. Complete **Sections 1 and 2** in your journal when you receive it. Decide on a problem. Brainstorm solutions for the problem. Be sure to research your idea to make sure it does not already exist. Do a patent search for your idea (instructions are included).
3. Complete and return the **Parent Acknowledgment Form – October 5, 2016**

November

1. Complete and return the **Intent to Invent form – Due November 14, 2016**
2. Experiment with your idea. Complete **Section 3** of your journal. If your idea is not successful, try another ... and another ... and another until you are satisfied that it works.
3. Complete your invention and the remainder of your journal – Due **November 30, 2016**

INVENTION

CONVENTION



December

1. Create a “catchy” name for your invention. See the “Naming your Invention” handout for guidance.
2. Create a display board for your invention. Information included on your board should be typed. Be creative and make the board colorful. See the “Tips for a Quality Display” handout for guidance. The Internet also has many websites devoted to creating quality display boards.
3. Submit display board – **December 9, 2016**

January

1. Finalize all aspects of your project.
2. Optional: You may want to ask family members or friends to write an endorsement for your new invention. Include these with your display. Include patent research as well.
3. Practice your presentation. Have someone ask you questions about your invention so you are comfortable talking to the judges. See the “Inventor Questions” handout for guidance.
4. Classroom Presentations – **The week of January 11, 2017**
5. Prairie Hills Junior High Invention Convention will be held at 6:00pm. Make sure you have your invention prototype, completed student journal, and display board –**February 1, 2017**

Invention Questionnaire



Use this form to ask family members and friends about problems that need to be solved. This may help you think of an idea for an invention.

What does not work as well as you would like it to work?

What problems would you like to have solved?

At home?

At school?

Other (car, store, etc.)?

If you could invent something to make your life easier, what would you invent?



Rules for Journal Keeping

- ⇒ Make notes each day about the things you do and learn while working on your invention.
- ⇒ Record your idea and how you got it.
- ⇒ Write about problems you encounter and how you solve them.
- ⇒ Add sketches and drawings to make things clear.
- ⇒ List all parts, sources, and cost of materials.
- ⇒ Date all entries at the time they are made.
- ⇒ The first page of the journal should be completed LAST!
- ⇒ The official Invention Convention journal must be written in black ink.
- ⇒ Use complete sentences in your journal.

REMEMBER KISS (Keep it simple scholars)!!!



Patent Search

You must complete a patent search of your invention to verify the originality of your invention.

- 1) Go to www.google.com/patents.
- 2) Think of two main terms or items that are part of your invention.
- 3) Type each term in the “term box” and then “search.”
- 4) Read all the related patent titles that contain your terms.

Inventor Questions

Have someone ask you these and other questions to practice your presentation.

- What problem does your invention solve?
- How did you get your idea?
- How do you know that this has not been invented before?
- Are you interested in pursuing a patent?
- What was the most difficult part of creating your invention?
- Who would benefit from your invention? How would they benefit?
- How could you market your product?
- Explain your student journal. How was it helpful?
- Where could you go next with your invention?

INVENTION

CONVENTION



Naming the Invention

An invention can be named in one of the following ways:

- * Using the inventor's name:

Levi Strauss = Levi jeans

Louis Braille = Braille alphabet system for the blind

- * Using the components or ingredients of the invention:

Root beer, peanut butter

- * Using initials or acronyms:

IBM, SCUBA

- * Using word combinations (notice repeated consonant sounds/rhyming words):

Hula Hoop, Pudding Pops, Kit Kat, Cap'n Crunch

- * Using the product's function:

Earmuffs, hairbrush, Swiffer

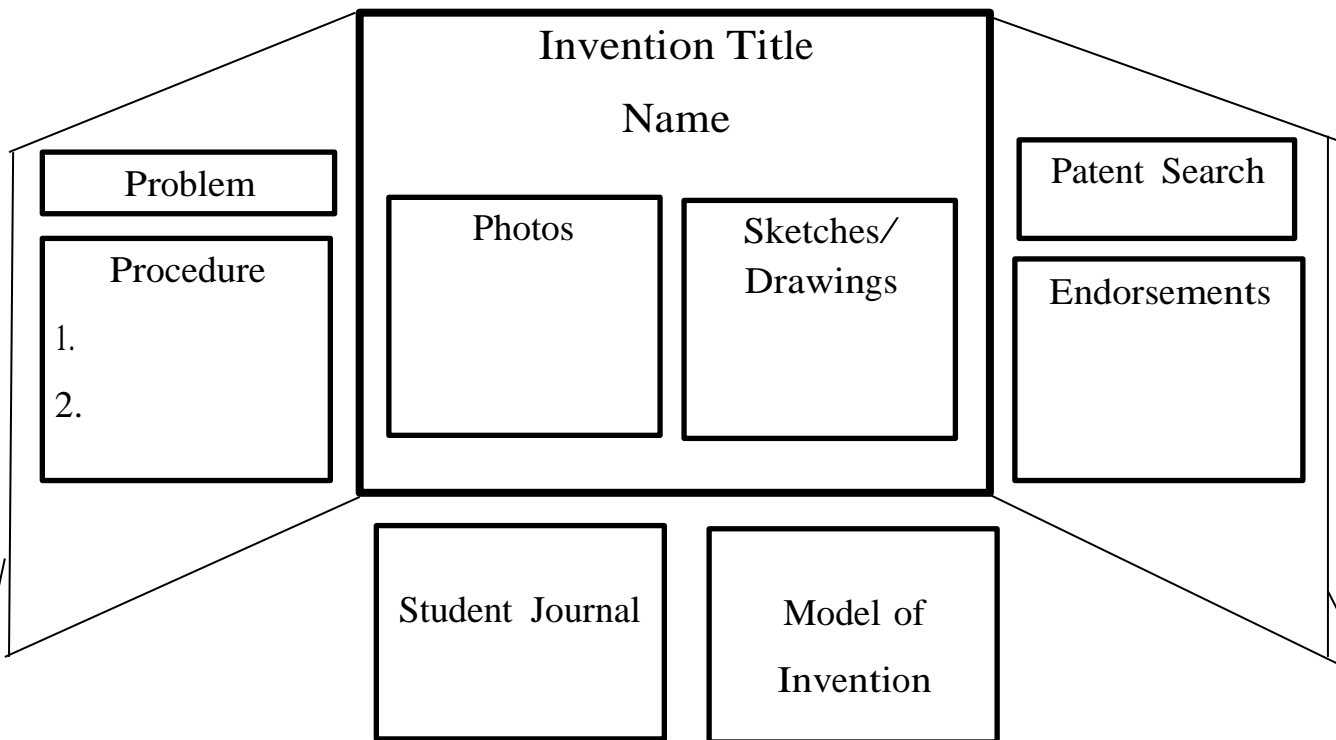


Tips for a Quality Display

- * Design your display board so that it represents your invention clearly and attractively.
- * Titles and subtitles should be large and clear.
- * If possible, all information for the board should be typed and printed from a computer.
- * Use colorful paper to make borders and frames for your titles and information.
- * Do not leave large empty spaces on the display board. Include photos and drawings.
- * Balance the arrangement of materials on the board.
- * Rubber cement or double-sided tape is neater than white school glue.
- * **BE CREATIVE!!!**



Sample Invention Display



Please include the following titles:

Invention Title, Name of Inventor

Problem Procedure

Product/Patent Research

Endorsements

Add any other titles you think are important for your display board.

Intent to Invent Form



Student Inventor(s): _____

Grade: _____

Brief description of my invention:

I have determined to the best of my ability that my invention will be original by taking the following steps:

I will be using the following materials in my invention:

I will practice science safety rules at all times.

Student signature: _____

Parent signature: _____

Due November 14, 2016