



# Marie Curie/Lord Baden-Powell Challenge 2020-2021

## 3rd - 5<sup>th</sup> graders.....

7 November 1867 – 4 July 1934	22 February 1857 – 8 January 1941
 <p><b>Marie Skłodowska Curie</b> born <b>Maria Salomea Skłodowska</b> was a <a href="#">Polish and naturalized-French physicist and chemist</a> who conducted pioneering research on <a href="#">radioactivity</a>. She was the <a href="#">first woman</a> to win a <a href="#">Nobel Prize</a>, the first person and only woman to <a href="#">win twice</a>, and the only person to win a Nobel Prize in two different sciences. She was part of the <a href="#">Curie family legacy</a> of five Nobel Prizes. She was also the first woman to become a professor at the <a href="#">University of Paris</a>, and in 1995 became the first woman to be entombed on her own merits in the <a href="#">Panthéon</a> in Paris.</p>	 <p><b>Lieutenant General Robert Stephenson Smyth Baden-Powell, 1st Baron Baden-Powell</b>, was a <a href="#">British Army</a> officer, writer, founder, and first <a href="#">Chief Scout</a> of the world-wide <a href="#">Scout Movement</a>. He was also founder, with his sister <a href="#">Agnes</a>, of the world-wide <a href="#">Girl Guide/Girl Scout Movement</a>. Baden-Powell authored the first editions of the seminal work, <i>Scouting for Boys</i>, which was an inspiration for the Scout Movement.</p>

### What:

- Kay Carl Elementary School students are encouraged to earn **500 or more Marie Curie/Lord Baden Powell Challenge** points by **May 1, 2021**.
- Students will explore science, technology, engineering, art, and math (STEAM) connections to the past, present, and future.
- Points are earned as students complete a variety of self-paced, student-directed challenges including memorization, investigation, problem-solving, interviews, field trips, reading, writing, web adventures, research, and presentation.

### Why:

- To encourage students to use their sense of wonder and curiosity about the world around them through student-directed (STEAM) educational activities.
- To go above and beyond classroom expectations and establish a habit of striving for excellence.
- To think like a scientist, engineer, and mathematician.

### How:

- Students will keep a **Curie/Baden-Powell Folder** with a **Curie/Baden-Powell Menu** and **Curie/Baden-Powell Record Sheets**.
- Parents are encouraged to help students record their accomplishments on their **Curie/Baden-Powell Record Sheets** and add up their points for a teacher to initial the completion of the challenge.
- Upon reaching **500 points**, your child will qualify for the **Marie Curie/Baden-Powell Challenge Award, 50 Carl Cash** and receive a Marie Curie/Baden-Powell Medal at the end of the year.

Please DOJO your teacher at Kay Carl with any questions. Many items from past challenges can be repeated for points. If you still have a requirement from last year memorized, please demonstrate for your teacher and earn the points for this year. Made items and past events cannot be used for the new challenge, unless you repeat the process (just do it again).

# Marie Curie/Baden Powell Challenge Award 2020-2021



Dear Kay Carl Elementary School Parents,

In an effort to encourage students to use their sense of wonder, go above and beyond classroom expectations, and establish a habit of striving for excellence, Kay Carl Elementary School students are encouraged to earn **Marie Curie/Baden-Powell Challenge** points throughout the school year. Points are earned as students explore science, technology, engineering, art, and math connections to the past, present, and future – and challenge themselves through a variety of self-paced, student-directed activities including memorization, investigation, problem-solving, interviews, field trips, readings, writing, web adventures, research, and presentation. Upon reaching **500 points**, your child will qualify for the **Marie Curie/Baden-Powell Challenge Award and 50 Carl Cash!** Students will keep a **Curie/Baden-Powell Folder** with a **Curie/Baden-Powell Menu** and **Curie/Baden-Powell Record Sheets**.

There is no limit to the number of Curie/Baden-Powell Challenge points students may accumulate. Parents may help students record their accomplishments on their Curie/Baden-Powell record sheets and add up their points. **All challenge points must be earned no later than May 1, 2021.** Students who achieve the Marie Curie/Baden-Powell Challenge Award will receive a Marie Curie/Baden-Powell medal for the 2020-2021 school year.

We are excited that your child is participating in the Marie Curie/Baden-Powell Challenge this year and hope he or she enjoys this learning adventure. Please feel free to help your child as he or she works at home and school to complete these meaningful and exciting challenges. Emailing your teacher pictures or videos of family field trips or at-home labs will allow the teacher to post them in the classroom so your child can share with their classmates. Your support and encouragement will help your student become a Curie or Baden-Powell in no time! Past items can be repeated for this year.

Please DOJO your child's teacher at Kay Carl with any questions.

Sincerely,

Brenda Swann

Kay Carl Elementary School Principal

# 3rd - 5th Graders Marie Curie/Baden-Powell Challenge Menu:

Complete the following challenges from the menu and earn Curie/Baden-Powell Challenge Points:

## 1. Mathematical Facts to MEMORIZE

- Times table quiz 1-12's in under 5 minutes (20 points)  
[https://www.sporcle.com/games/g/multiplication\\_table](https://www.sporcle.com/games/g/multiplication_table)
- Times table quiz 1-12's in under 3 minutes (50 points)
- Prime numbers to 100 (30 points) (2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97)
- Square Numbers to 225 (20 Points) or 625 (40 points)
- Pi to 20 digits (20 points) or 40 digits (40 points) 3.1415926535897932384626433832795028841971
- Roman numerals to one million (20 points)

## 2. Science facts to memorize

- The first 30 elements of the periodic Table of Elements (number, symbol, and name) (30 points)
- 6 simple machines: lever, wheel/axle, pulley, inclined plane, wedge, and screw (30 points)
- 6 Electrical Circuit Symbols (30 Points)
- 6 terms or symbols used programming code (c++, Java, python, etc..) (30 points)
- 3 basic cryptic codes (Caesar cypher, Atbash, binary, etc...) (30 points)

## 3. Computer/ math Problems

- Sudoku Puzzles-up to 10 (10 points each)
- Other teach-approved math problems (10 points each)
- IXL online math practice <http://www.ixl.com> up to 12 hours (20 points per hour)
- After school math or technology class (look for these on DOJO) – up to 12 hours (20 points per hour)
- Code.org practice (10 points for every course passed at grade level or above) <https://code.org/>

## 4. Math/Technology Literature/ Book Report (up to 100 points for each book)

- The Number Devil by Hans Enzensberger, or other teacher-approved math choice and write a paragraph about what you learned.
- Biography or approved historical fiction related to an important scientist, mathematician, technological innovator, discover, or other teacher pre-approved science choice and write a paragraph about what you learned.

## 5. Interviews-prepare 10 questions to ask a scientist, engineer, or mathematician, interview the professional and record their answers. Write an interview summary. (50 points each)

## 6. At-Home Labs

- Repeat a lab investigation/experiment done in science class or a S.T.E.A.M. class and share your results. (20 points per lab)
- Conduct an investigation/experiment of your own choosing and share your results. (20 points per lab)  
<https://www.stevespanglerscience.com/>

## 7. Technology Activities

- Create an electronic presentation (such as a video, PowerPoint, Google slides, etc.) on a math, science, or technology topic. (30 points each)
- Create an original Scratch project (not remixed), up to three projects. (30 points each)
- Create a character design with a story using [www.tinkercad.com](http://www.tinkercad.com), up to 3 designs. (30 points each)
- Create an Original Minecraft mod. (100 points each)
- Create and run a program on an Arduino, Raspberry Pi, or other such device. (50 points each)

## 8. Science/Math/Technology Report

- History of Computers Report- at least three pages in length (50 points)
- Research paper- (at least three pages in length) on a teacher approved math, science, or technology topic. (50 points each)

9. **Thomas Edison, Albert Einstein, Marie Curie, or Baden-Powell** crossword Puzzle (30 points each)

10. **Family Science Field Trip**- Take a nature walk, go camping, visit a landform, National Park, science exhibit, science museum, or planetarium (20 points each) present pictures, videos, and/or items collected from the trip with the class for an additional. (20 points each-make a video or slideshow)

11. **Geocaching**- Sign up for [geocaching.com](http://geocaching.com) and find a geocache (5 points each for up to 50 points)  
<https://www.geocaching.com/play>

12. **Contests**- Participate in an approved math, science, or technology contest. (40 points each)

13. **Citizen Scientists**- Participate in the Lost Ladybug Project <http://lostladybug.org>, become a NASA Citizen Scientist <http://science.nasa.gov/citizen-scientists>, or choose another teacher-approved Citizen Scientist Project. (100 points possible each)

14. **Engineering**- Invent a prototype of something that solves a real-world problem and present it to the class. (up to 100 points possible)

15. **Morse Code**- Memorize the international Morse Code Alphabet. (60 points possible)

16. **Teacher approved learning activities with a focus on math, science, or technology concept**- Think on an idea then ask your teacher how many points you may earn. (10 to 100 points possible each)






17. **Art**- Using the A in S.T.E.A.M. to create some form of art based item.





- Draw a character design and write a story for the character. (10 points)
- Create a three view drawing of a complex object. (up to 20 points)
- Create a cardboard Automata with a story. <https://tinkering.exploratorium.edu/cardboard-automata> (20 points)
- Put on an original puppet show with paper bag puppets (20 points)
- Design and build a Rube Goldberg device with at least 7 steps. Take pictures or bring in a video of it working. (20 points)

- Make a Paper-circuit, squishy circuit, sewing circuit, scribble machine, or other creative circuit idea and explain how it works to the class. (20 points each) <https://tinkering.exploratorium.edu/projects>
- Create 5 light paintings with titles. (20 points) <https://tinkering.exploratorium.edu/light-painting>
- Learn the names and uses of 10 art tools, use five in an art project. (20 points)

### 18. Music- More of the A in STEAM

- Identify Note Names: (10 Points)  
Grade 3: Whole note; Half note; Quarter note; Eighth note  
Grades 4 and 5: Whole note; Half note; Quarter note; Eighth note; Sixteenth note
- Identify 8 Elements of Music: (rhythm; melody; harmony; form; timbre; tempo; and dynamics) (10 Points)
- Identify the lines and spaces of the treble staff: (Lines are: EGBDF) (Spaces are : FACE) (10 Points)
- Name 5 music symbols or signs: (15 Points)

(Fermata  ) (Accent  ) (Treble clef sign  ) (Repeat sign  ) (Double bar lines  )

 ) (1<sup>st</sup> and 2<sup>nd</sup>s endings (Coda sign   ) (Coda sign  )

(15 Points)

- Perform in a musical performance (20pts)

### 19: Scouting Events- for our camping theme this year we are adding more items.

- Learn to tie 5 knots and name them (30 points)
- Earn a badge, pin or other recognition item from a recognized group such as scouts or other organizations. (30 Points) Example: <https://youtu.be/JVUNQfDRjGk> Look up Springs Preserve Nature Badge.
- Go camping with your family (15 Points)
- Start a campfire with supervision, using only 2 matches or other methods (No lighters). (10 points)
- Set up a tent without adult help and sleep in it overnight (in the backyard or house counts). (10 points)
- Show how to use a compass. Identify the four cardinal directions (North, South East, and West) Identify the direction you would have to go, using degrees, to get to three destinations you can see. (20 points)
- Find out what pioneering is - make a useful item and describe the skills needed to make the item (50 points)

### 20: First Aid-Be prepared for emergencies like a good scout

- Explain what first aid is. Tell what you should do after an accident. (10 Points)
- Show what to do for **hurry cases** of first aid: Serious bleeding, heart attack or sudden cardiac arrest, stopped breathing, stroke, poisoning (20 Points)
- Show how to help a choking victim. (10 Points)
- Show how to treat for shock. (10 Points)
- Demonstrate how to treat at least five of the following: A. Cuts and scratches, B. Burns and scalds, C. Sunburn, D. Blisters on the hand or foot, E. Tick bites, F. Bites and stings of other insects, G. Venomous snakebites, H. Nosebleed, I. Frostbite (20 points)
- Put together a simple home first-aid kit. Explain what you included and how to use each item correctly. (20 Points)
- Create and practice an emergency readiness plan for your home. (15 Points)
- Visit with a first responder or health care professional. (20 points)

# Family Field Trip Locations and Ideas

## **1. Las Vegas Natural History Museum** 900 Las Vegas Blvd N, Las Vegas, NV 89101

Learn about the animal kingdom and the history of human kind at the Las Vegas Natural History Museum. Filled with fascinating exhibits spanning through centuries from the dawn of time to modern day science, there are a wealth of exhibitions both permanent and temporary to explore.

## **2. Springs Preserve** 333 S Valley View Blvd, Las Vegas, NV 89107

Connect with nature at our award-winning Botanical Garden, home to the largest public collection of Mojave Desert plants. Come see where Las Vegas began! Walk, bike, or ride the train through our trails and discover native habitats and archaeological sites. Explore native Mojave Desert wildlife through live animal exhibits.

## **3. Shark Reef Aquarium** 3950 S Las Vegas Blvd, Las Vegas, NV 89119

Enjoy the interactive layout of the aquarium as it takes you on an action-packed journey through a slowly shrinking temple while showcasing a diverse selection of aquatic creatures, including over 100 sharks, exotic fish, reptiles, sea turtles, and more.

## **4. Spring Mountains Visitor Gateway** 2525 Kyle Canyon Road

Also known as Mount Charleston, The Spring Mountains National Recreation Area offers opportunities for year-round fun. Learn about the area by exploring our Spring Mountains Visitor Gateway, join an interpretative program or volunteer to conserve the forest environment!

## **5. Red Rock Canyon National Conservation Area** 1000 Scenic Loop Dr, LV, NV

89161 Red Rock Canyon National Conservation Area lies in Nevada's Mojave Desert. It's known for geological features such as towering red sandstone peaks and the Keystone Thrust Fault, as well as Native American petroglyphs.

## **6. Sea Quest Aquarium** 3528 S Maryland Pkwy, Las Vegas, NV 89169

Get ready to go on an adventure through rainforests, deserts and the depths of the seas as you see, touch and feed more than 1200 animals.

## **7. Discovery Children's Museum** 360 Promenade Place, Las Vegas, NV 89106

Home to nine themed exhibition halls, the 58,000-square-foot **museum** entices **children** of all ages with a well-rounded array of learning experiences that feel a whole lot more like play.

## **8. Lost City Museum** 721 S Moapa Valley Blvd, Overton, NV 89040

The Lost City Museum, originally known as the Boulder Dam Park Museum, was built in 1935 by members of the Civilian Conservation Corps. The National Park Service created the museum to exhibit artifacts recovered from local prehistoric archaeological sites, most of which were flooded when the Colorado River was dammed to form Lake Mead.

## **9. State Parks/National Parks**

<https://www.nps.gov/state/nv/index.htm> or <http://parks.nv.gov/parks/map>

# Marie Curie/Baden-Powell Challenge Record Sheet grades 3-5

Name \_\_\_\_\_ Teacher \_\_\_\_\_

Challenge Name	Date	Points Earned	Your Initials	Teacher Initials
Time Tables under 5 Minutes <i>20pts</i>				
Time Tables under 3 minutes <i>50pts</i>				
Prime Numbers <i>30pts</i>				
Square Numbers to 225 <i>20pts</i>				
Square Numbers to 625 <i>40pts</i>				
Pi to 20 digits <i>20pts</i>				
Pi to 40 Digits <i>40pts</i>				
Roman Numerals <i>20pts</i>				
30 Elements of the periodic Table of Elements <i>30pts</i>				
6 Simple Machines <i>30pts</i>				
6 Electrical Circuit Symbols <i>30pts</i>				
6 Terms or Symbols using programming code <i>30pts</i>				
3 basic cryptic codes <i>30pts</i>				
Sudoku Puzzles <i>10pts each up to 10 puzzles</i>				
Teacher-Approved Math Problems <i>10pts</i>				
IXL Hours <i>20pts per hour</i>				
Before/After school classes <i>20pts per hour</i>				
Code.org practice <i>10pts up to 100 points</i>				
Math Book Report <i>100pts each</i>				
Biography/Science Book Report <i>100pts each</i>				
Technology Book Report <i>100pts each</i>				
Interview with a Scientist, Engineer, or Mathematician <i>50pts each</i>				
At-home Labs <i>20pts each</i>				
Electronic Presentation: Math Topic <i>30pts each</i>				
Electronic Presentation: Science Topic <i>30pts each</i>				
Original Scratch Projects <i>30pts up to 3 projects</i>				
Create a character design with story on tinkercad.com <i>30pts up to 3 designs</i>				
Create an Original Minecraft mod <i>100pts</i>				
Create and Run a program on an Arduino, Raspberry Pi or other device <i>50pts each</i>				
Research Paper: Math, Science, or Technology topic <i>50pts each</i>				
Edison, Einstein, or Curie crossword Puzzles <i>30pts</i>				
Family Science Field Trip <i>20pts each</i>				
Family Science Field Trip-share with class <i>20pts</i>				
Contest Science, Technology, Math ( <i>20pts each</i> )				
Geocaching 5pts each (up to 50 pts)				
Citizen Scientists <i>100pts each</i>				
Invention <i>100pts</i>				
Morse Code <i>60pts</i>				





