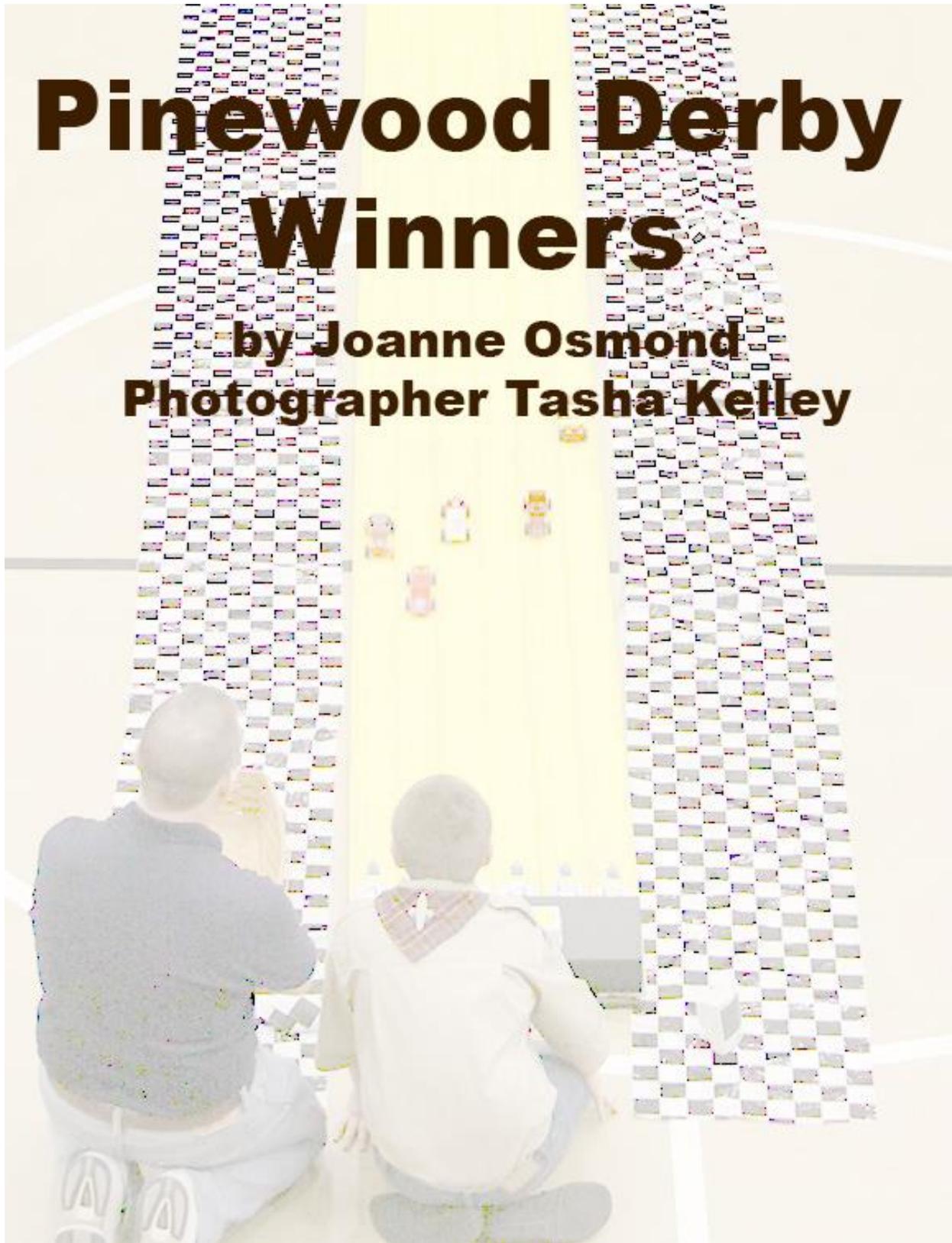


Pinewood Derby Winners

**by Joanne Osmond
Photographer Tasha Kelley**



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Table of Contents

A New Car

Get Ready

Build It

Get Set

Go

Good Sportsmanship

Winners

A New Car

Matthew's mom hung up the phone and smiled at her son. "A new family is moving in down the street and they have a son your age who wants to join Cub Scouts."

"When are they moving in?" Matthew was thrilled to know that he would have another Cub Scout to hang out with. With only ten boys in his Pack, one new scout made a big difference especially one who lived close by.

"They are moving in next week, but he is going to start coming to your Webelos den meetings. Your cubmaster took a Pinewood Derby kit over to where they are staying so he can make a car. I would offer to help but your dad will be out-of-town until the day of the race."

"Mom, we really should help. There aren't many people around who know how to make a Pinewood Derby car and they won't know who to go to," Matthew reminded her.

"Not this year. It is a busy time especially with Dad not here to help; it is too difficult for me to get everything done and I am not the expert at making cars. By the way, Dad said that all you have to do to complete your car is to add the finishing touches. You already sanded it smooth after at least six coats of paint and Dad helped with wheels. Your car really looks fantastic. You came in second last year; maybe your new car will come in first."

"I hope so. I took the time to research aerodynamic designs and included every tip I could find on making a car run faster. We will know soon!" Matthew really didn't want to talk about it. He was so nervous. He wanted to do well in the Pinewood Derby race this year. It was his last attempt to win the trophy, because next year he would be in a Boy Scout Troop.

He went over to the shelf where he displayed his car. He only looked, resisting the urge to pick it up and examine the car again. When he was a Wolf scout, he had a great car, but he kept playing with the wheels. When he actually raced his car, the wheels were definitely crooked and one kept falling off. This year until the race was won, the car was off limits.

Matthew was glad his car was sitting safely on the shelf where he left it.

Get Ready

Max watched his older brother, Jack, and his dad set up the Pinewood Derby track. It was getting late and there seemed to be a problem. Max wasn't happy that he was sent to help the cubmaster set up chairs and tables, "I know I can help," he thought defiantly.

"It doesn't make sense; all the pieces have to be there," Max thought as he wandered close enough to look inside the box that his dad made to hold the track.

Max smiled as he saw a screw wedged in a corner of the box. "Were you missing a part?" he said as he held up the screw. The leaders turned and looked at Max, surprised that he had found the part of the track that everyone else had missed.

"Thanks, Max!" was the very pleased response from both his dad and cubmaster.

The boys helped put up the decorations and sort the awards as they waited for the rest of the Cub Scouts to arrive. "Where is Matthew?" Max asked his brother.

"Mom said that Matthew might not be here to set up because he has soccer practice."

As the Cub Scouts and their families arrived, they followed the check-in process and turned their cars into the cubmaster who checked that the cars met the requirements published for the Pack.

"Matthew, you are finally here," Max called across the gym when his friend walked in the door.

"I'm sorry, I'm late. I forgot to take my Cub Scout uniform to soccer practice so we had to go back to the house to get it. Where is Lucas?"

Max and Jack stared at Matthew, "Who is Lucas?"

Matthew explained that he was a new Cub Scout who was moving in down the street from him. "He is supposed to be here already. I promised to meet him when he arrived."

A quick search of the building revealed a small boy sitting on a chair in the hallway patiently waiting for Matthew. In the excitement of getting ready for the race, no one noticed the new boy. Normally the leaders would have greeted him but tonight they were very busy preparing for the Pinewood Derby. It was Matthew who had volunteered to welcome Lucas when he arrived.

As Matthew walked up to Lucas, he hesitated only for a moment before he introduced himself and then introduced Jack and Max.

"Look at my car!" Lucas said excitedly as he held up a misshapen piece of wood with crooked wheels. "I made it myself," he told them with pride.

Matthew smiled, "It's a great car, and I have a few tricks on how to make it run faster."

Build It

The Boy Scouts of America (BSA) indicates that the success of the Pinewood Derby® is in *“the process itself - bonds are strengthened as the Cub Scout partners with a parent or adult mentor to design, carve, paint, weigh, refine, and race the car. In addition, Cub Scouts build confidence and take pride in their own growing skills and hard work.”*

“While the exhilaration of the actual race lasts only moments, the Pinewood Derby® experience lasts a lifetime. The benefits, for Cub Scout and adult, are discovered through the derby process itself: strengthening bonds, sharing responsibility, developing teamwork, learning new skills, exercising creativity, building sportsmanship, and making new friends” <http://www.pinewoodderby.org>

Pinewood Derbies have come a long way since 1953 when the first cars went down wooden tracks. While some Packs still use wood tracks, many have aluminum tracks with electric timers and software that combines the results for each heat and calculates winners for various groups and overall fastest cars. Many of the rules for the first Pinewood Derby® remain the same today! Cars start at a standstill and move through gravity down a track that has center guides for each lane. Heats are run with two or more cars just as they were in 1953.

Pinewood Derby® Race Rules

Rules are to promote fairness for all participants and to ensure the safety of the racers.

Pack Requirements

- Do not have any rockets or other heat source on your car.
- Cars must not be over 4-3/4 inches tall (or they will hit the finish line).
- No wet paint or glue that isn't 100% dry!
- Only Designated Officials will be allowed in track area, cars will be disqualified if racers or other adults enter the restricted area.
- Essential Materials: All cars entered shall be constructed from the Official Grand Prix Pinewood Derby® Kit.
- After submitting the car: The Cub Scout doesn't have possession of the car until the race is over. Repairs to fix racing accidents will be possible, but there will be a 5-minute time limit on the repairs.
- "New Work": Construction of ALL entries MUST have begun AFTER last year's Pinewood Derby® Race.
- Single Entry per Person: Only one car may be registered by any person in

the Pinewood Derby®.

- **Inspection and Registration:** Each car must pass a technical inspection before it may compete. Technical inspection and registration of cars will occur on a pre-arranged time to be declared by the Pinewood Derby® Committee.
- **Failure to Pass Inspection:** The Inspection Committee shall disqualify cars, which do not meet the rules as described herein. If a car does not pass inspection, the owner will be informed of the reason his car did not pass. Cars, which fail the initial inspection, may be taken for modifications and resubmitted for inspection so long as there is time before the race starts. After race start, the car cannot be submitted.
- **Impoundment:** No car may be altered in any way after it is registered.
- All decisions of the Pinewood Derby® Chairman are final.

Note: Unsportsmanlike conduct by any participant or spectator will be grounds for expulsion from the competition and/or the race area.

Race Car Design Standards

- **Weight:** Race cars may weigh no more than five (5) ounces (total weight) as determined on the "official scales" during check-in.
- **Wheels and Axles:** The car shall roll on the wheels from the kit. The wheels shall turn about the axle nails from the kit. The axle nails shall be firmly affixed to the wood of the car body, and **MUST** be placed in the original 'axle grooves' in the supplied wooden block. It must be obvious to the judges that the grooves, wheels, and the nails from the kit are used.
- **Size:** Racecars may be no longer than 7 inches, nor wider than 2-3/4 (2.75) inches, as determined by the official gages during the Registration and Inspection. Underside clearance of at least 3/8 (0.375) inches and inside wheel-to-wheel clearance of at least 1-3/4 (1.75) inches is recommended, so that the car will run on the race track. Height should not exceed 4-3/4 inches or car will hit the finish line. Adequate clearance is the responsibility of the racecar builder.
- **Weights and Attachment:** Weight may be added to the car and will be considered part of the car for purposes of all measurements. "Weight" is considered any material on the car that is not provided in the kit. All weight must be securely fastened to the car, e.g. by permanent glue, nails, or screws, but not by "sticky substances," e.g. tape or tack spray. Weights shall be passive, i.e. non-movable, non-magnetic, non-electric, non-sticky, etc.
- **Wheel Treatment:** Wheel treatment (hub and tread smoothing and

polishing) may not result in substantial removal of mass or in reducing the wheel width from the original kit wheels. Some of the original "tread marks" on the wheel face must remain intact, i.e. apparent to the inspector. Wheels may not be machined to a beveled condition and the portion of the wheel surface that contacts the track must remain parallel to the axle.

- **Unacceptable Construction:** The following may NOT be used in conjunction with the wheels or axles: hubcaps, washers, inserts, sleeves, or bearings.
- **Gravity Powered:** The racecar may not be constructed or treated in such a way that the track's starting mechanism imparts momentum to the car. (For instance, this provision disqualifies cars with sticky substances on the front of the car and protrusions, which may catch on the starting pin.)
- **Lubricants:** Only dry lubricants such as graphite or powdered Teflon "white lube" will be allowed for lubricating the wheels. Lubricants may not foul the track. In the interest of fairness, only one lubrication is allowed before the beginning of the first heat race.
- **Car Nose:** The center of the nose must be the furthest out, allowing it to hit the start peg. If edges protrude past the start pin, either the car will run backwards, or tape will be placed in the front, giving a flat surface to hit the start peg. The choice will be left up to the car builder if available.

Go to <http://www.pinewoodderby.org> for more information on building a Pinewood Derby® car.

In addition to web sites, there are books and magazines with instructions on how to build a fast and winning car at local Scout shops or at www.scoutstuff.org. Some of the more helpful are Cub Scout Grand Prix: Pinewood Derby® Guidebook, Pinewood Derby® Designs & Patterns, and Pinewood Derby® Speed Secrets.

Step-by-Step Instructions

Step 1: Prevent mistakes; plan first before you cut

Look through designs of cars that are available online or in the books available from the Pack, library, or Scout stores. Draw an outline of your favorite design on graph paper or a template. Trace the design on the car with a pencil and make sure you put your name on the bottom of your car where it won't be cut off. Mark the front and the back of the car and indicate if the bottom needs to be carved out for weights. Weights should not hang lower than the flat bottom or during the race, they might hit the lane guide and slow the car down.

Step 2: Born from a block of wood

An adult will complete the next step to cut the car based on your design. It is

much easier to cut initially with a power saw. They can check the axle grooves to ensure that each is at a perfect 90-degree angle to the car body. Crooked wheels or axles will also slow the car down.

The Cub Scout is then responsible for sanding, priming, painting, sanding again with fine sand paper, and adding accessories, like stickers, small figures, etc. to complete the car. Make it beautiful, smooth, funny, colorful, or original, but always make it fast.

Do not forget to have a place for weights if you need it. Weight may be placed anywhere as long as it is not taped on, does not exceed the specifications, and does not hang down from the bottom of the car.

Step 3: Wheels make the car go round and round

The official wheels can be sanded to remove surface nubs, but the treads must be left flat. The wheel alignment is very important. Make sure all FOUR wheels roll freely and smoothly around the axle.

If you can use a drill bit that fits just inside the wheel where the axle fits, clean out the roughness that can cause wheels to not spin freely. Check each axle for a burr on the underside of the head. To let the wheels run as freely as possible, place an axle in a hand-drill chuck to hold it steady, then smooth the burrs with a fine emery cloth or file. Then polish the axles with jeweler's rouge or fine emery paper.

Put the axles and wheels on the car, but don't glue the axles on at this point.

Step 4: Lose a few, gain a few, but be exact

To officially race, the car cannot weigh more than five ounces. Heavier is better, so work to get the car as close as possible. Weigh the car, and then calculate how much additional weight is needed. Add accessories, weights, coins, washer, etc. to ensure that the car weighs five ounces no more and no less.

Weight cannot be tied or taped on. The methods to increase the weight includes using accessories, such as a metal driver, Lego blocks, fenders and tail pipes, etc., or carving out a hole and placing the weights in the cavity to build it up to the maximum weight. Make sure whatever you use to add weight is securely attached or built into the body of the car so it will not fall off the car and onto the track. Being disqualified is no fun and it is even worse if another car is damaged.

Step 5: Time trials

Once weight is securely mounted, attach the wheels carefully aligning them. Place the car on a long, flat surface, such as a floor, and give it a gentle push. The car should travel in a straight line for five to ten feet. A den meeting may be set aside to check the cars dimensions and weight plus allow the Cub Scouts to practice

rolling their car on a practice track.

Step 6: Final stage before lift off

Lube and mount the wheels permanently using dry, fine powdered lube (graphite) works best. Dust a little graphite in the hole of the wheel where the axle is inserted, some on the axle where the wheel rides, and a little at the axle head. Slide the axles and wheels onto the car and glue into place. Use an epoxy or non- resin glue, and make sure not to get any on the surface of the axle where the wheel rides.

Important: Regardless of the prequalification, if a judge at the race provides contrary information about the car, don't argue. Be cheerful and make the recommended changes. Most derbies have an area set aside where minor modifications can be made.

Final word from BSA, *"If every Pinewood Derby® car made this year took just one run down the track, the combined distance would be from the Earth to the Moon and back. That's out of this world!"* <http://www.pinewoodderby.org>

Get Set

Matthew led Lucas and his friends to the check-in room carrying his car wrapped in layers of paper towel and securely packed in a shoebox. Lucas held his car proudly in his hand and showed it to everyone he passed.

"What does your car look like?" Max asked Matthew. Max and Jack had already turned their cars in so they were ready to race.

"You'll see soon; let's get Lucas' car ready to go first. We can turn my car in later." Matthew responded.

Matthew sat down and inspected Lucas' car. It wasn't very pretty; in fact, it was the ugliest car he had ever seen. The wheels were wobbly and not straight. It might be hopeless, but Matthew wanted to try to make it go down the track. "Max, go get your dad, we need help, now."

Jack looked at his watch; they only had fifteen minutes to register.

Max ran back into the room, "Dad says we are on our own; he is too busy checking everyone in. Our toolbox is in the corner and it will have everything we need to fix... I mean speed up Lucas' car."

Matthew carefully opened the shoebox and asked Lucas and Jack to turn his car in while he and Max worked on Lucas' car. "Start the paper work for Lucas. I don't think we have him in our database yet. I am already registered; I just need the number 3 put on my car. Jack, I think you are number one and Max is two."

As Lucas and Jack left to turn in Matthew's car, Max and Matthew stared at the piece of wood in Matthew's hand.

"Let's weight it first," Max suggested taking the car from Mathew.

"It's less than four ounces," he announced. "In the tool box, we have weights with super adhesive that we can put on the top of the car." As Max added the piece of metal to the car, he reweighed it and handed the car back to Matthew. "It is just less than five ounces, so let's go with it."

With the weight resolved, Matthew carefully removed the wheels. Max took the file and began to remove the burs on the wheels while Matthew sanded the axles with emery paper.

Jack and Lucas walked in laughing, but stopped when they saw that Lucas' car was in pieces. Jack anxiously looked at the clock. They only had five minutes left to check-in. Matthew carefully replaced the wheels, aligned them, and applied super glue. "This glue dries very fast."

Adding graphite to the wheels, Matthew spun each to ensure the graphite covered the axles. Max took the car back to the scale to make sure it was still under five ounces.

As they hurried to the check in table, Lucas' mom appeared at their side. "I am so sorry that I am late." She started to cry, "I am not usually like this. I had to go to the drug store, so I brought Lucas here to meet Matthew. A girl said she would find Matthew for him. I thought I remembered that there was a drug store around the corner, but I was turned around and got lost. I was so worried that something would go wrong and I didn't even have a number to call."

Looking at Lucas' car, she continued to explain to the cubmaster, "I did the best I could. Lucas' dad is at a conference for his new job, so I had to help Lucas build the car. As you can tell, I am not very good with tools."

She completed the registration form and looked at the car that Lucas held carefully in his hand, "Boys, thank you for helping Lucas, even I can tell the wheels are smoother and finally on straight. I assume the new gray hood is to make the car heavier. I tried coins but didn't know how to keep them on except with duct tape."

The cubmaster handed Lucas a card with the number 15 on it and carefully took his car as she announced, "The race is about to begin."

Go

The boys went over to the area set aside for the "drivers." They had the best seats in the house sitting on the floor next to the finish line. They wouldn't be able to touch their cars until the race was over. This year, all of the Cub Scouts had checked in their cars successfully.

Matthew wanted his car to come in first; he had worked very hard to make it his best car ever. This year he also wanted Lucas' car to win. Well, at least he wanted him to finish a race.

Jack, Max, and Matthew were in the first heat, but Lucas' car would be one of the last to race. It seemed like a long time to have to wait to see if they were successful in fixing his car.

The first race was exciting because all three cars speed down the track going almost 20 miles per hour, which is amazing for a little block of wood.

Max was ahead by a few seconds, but it was too close to tell who would be the overall winner at the end of the Pinewood Derby. Matthew was excited that his car did well in its first heat against his friends. Matthew was so nervous about Lucas' car; he almost missed that he won his second heat.

Lucas cheered for everyone and was excited as he watched his new friends' cars race down the track. He high-fived the winner and encouraged all of the scouts. When Lucas' car was placed on the track, everyone was quiet. As they looked at his car, the crowd wondered if it would make it down the track at all. What would Lucas say if his car didn't make it to the finish line?

Good Sportsmanship

Good Sportsmanship is important in the Boy Scouts. The organization emphasizes it in all activities especially in sports, games, and event such as a Pinewood Derby®. Below is a quote from <http://www.pinewoodderby.org>.

“Two things the Pinewood Derby® requires each participant to learn are 1) the craft skills necessary to build a car, and 2) the rules that must be followed. Even more important, though, is how we act and behave while participating in the Pinewood Derby® or any other group activity. This is called sportsmanship.

The first thing to remember about sportsmanship is that everyone's skills are a little different. You may be good at something like singing or drawing, but not as good at something else like basketball or computers. Parents have different skill levels, too. This doesn't mean that you are a good person one time and not good another time. You can always be a good person, whether or not you have good car-building skills. Remember, you and your friends are individuals first and racers second. This idea is often called having respect for others.

The second thing to remember is to follow the rules. Without rules, there would be no Pinewood Derby®. You will never know if you are really good at doing something unless you follow the rules. This is often called being honest.

The third thing to remember about good sportsmanship is that there are winners and losers in every competition. You accept this when you choose to compete.

There may be times when you win and feel happy, and times when you lose and feel unhappy. Being a winner is easy, and losing is sometimes hard. If you win, you must not brag or gloat. If you lose, you must not feel jealous or bitter.”ⁱ

Winners

The cubmaster released the cars and silently said a prayer for the misshapen little car. Suddenly everyone heard Lucas cheer and high five the winner as his car inched across the finish line only seconds behind the winner. It made it!

Lucas’ mom gave Matthew a big hug for helping her son. “Thank you.”

Then Matthew was able to relax and enjoy the rest of the race. Lucas’ car held together until the final race ended and his car lost a wheel after crossing the finish line.

Lucas didn’t care; he did his best. He laughed and smiled at everyone. Lucas was so proud of his car and his new friends.

It was certainly a rewarding night for Matthew; he won a trophy for fastest car and Lucas received a big blue ribbon for the Most Improved car. After the final cheers and congratulations, Lucas’ mom stood before the Cub Scouts, parents, and leaders.

“Thank you for accepting Lucas and helping him. He does very well in most situations, especially when he feels welcomed. He was born with a condition called Down syndrome. Down syndrome is a genetic disorder caused by the presence of an extra copy of chromosome 21, which is the most common chromosome abnormality in humans. The Center for Disease Control estimates that about one of every 700 babies born in the United States each year is born with Down syndrome. It is typically associated with physical growth delays, a particular set of facial features, and some degree of intellectual disability.”

“Lucas is going to go to the same school that most of you attend. After watching you tonight, I am confident that it will be a wonderful experience for him. Thank you all for your love and support. I am so proud of the Cub Scouts who helped him with his car and the opportunity Lucas had to learn to be a good sportsman. You can all say, "I did my best" and you should be content with the results. You have demonstrated that you are able to appreciate and feel happy for someone else when they run a good race or build a cool car however it looks.”

Reference: <http://www.pinewoodderby.org>



I started my “Boy Scout” journey as a young girl tagging along with my father when he served as an Explorer Post advisor. When my oldest son turned eight, we joined a Cub Scout Pack and I have continued to fulfill a variety of roles since then. I am currently a Cubmaster and manage two scouting web sites: LDS-Scouting.org and LDSCubScouts.org. My two sons are Eagle Scouts, one grandson is currently in Cub Scouts, and two grandsons crossed over into Boy Scouts after receiving their Arrow of Light. My books blended fact and fiction providing boys with stories about the things they enjoy most in Scouting.

If you liked this story, you might enjoy ***A Fishy Adventure*** available at Amazon.com. It follows Cub Scouts as they solve a mystery while fishing in Arkansas.

Available in March 2014, a second eBook, ***A Campfire Story***, follows scouts learning about Leaving No Trace in Vermont.

If you have comments or concerns, feel free to eMail me.

Yours in Scouting,
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