

# Math Challenge #2



First Name: _____	Last Name: _____	Grade: _____
Teacher: _____	Parent's email: _____	

## Birthday

Welcome to the Math Challenge #2. Problems on this challenge revolve around birthdays and birthdates.

Below are some fun facts about birthdays:

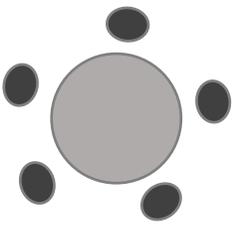
- September 9 is the most popular birthdate. It has 12,301 births on average. This is based on the data from U.S. National Center for Health Statistics (1994-2014).
- August is the most popular **birthday** month, accounting for about 9% of all the **birthdays** in the world! An estimated 2 billion **birthday** cards are sent every year in the U.S., alone!
- The placement of candles on birthday cakes has various potential origins. Ancient Egyptians used candles during coronations, which were held to raise the status of humans to gods. Later, ancient Greeks placed candles on moon-shaped honey cakes made for the goddess Artemis. The Greeks thought that the smoke from blown-out candles lifted prayers and wishes to the tops of Mount Olympus.
- Historians believe that the first people to celebrate birthdays were the Romans.
- Leap years are years where an extra, or intercalary, day is added to the end of the shortest month, February. The intercalary day, February 29, is commonly referred to as leap day. Leap years have 366 days instead of the usual 365 days and occur almost every four years. Other interesting data about Leap Years can be found at <https://www.mathsisfun.com/leap-years.html>.

If you are new to any of the problem solving strategies, check out our complete overview of elementary problem solving strategies at <https://www.mathinaction.org/problem-solving-strategies.html>.

**Kinder & First Grade: solve at least 3 problems.**  
**Second & Third Grade: solve at least 7 problems.**  
**Fourth Grade and above: solve at least 12 problems.**

*Answer*

<p>1. Today is Marissa's birthday. Last year, her birthday cake looked like the picture below. How old is she this year?</p>		
<p>2. Tom turned 5 years old 4 days ago. If today is Sunday, what day was Tom's birthday?</p>		
<p>3. Below are puppies that are 2 months old, 3 months old, 5 months old, and 7 months old. Find the age of each puppy using the clues below:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 10px;"> <div style="text-align: center;">  <p>Kiki with a red bandana</p> </div> <div style="text-align: center;">  <p>Bonnie with a green bandana</p> </div> <div style="text-align: center;">  <p>Rusty with a pink bandana</p> </div> <div style="text-align: center;">  <p>Romeo with a blue bandana</p> </div> </div> <ul style="list-style-type: none"> <li>• The youngest puppy wears a pink bandana.</li> <li>• The oldest puppy wears a green bandana.</li> <li>• Romeo is the second youngest puppy.</li> </ul>		

4.	Miranda is 7 years old. Her brother is two years younger than her. If you add Miranda's age, her brother's age and their cat's age, you will get 15. How old is their cat?	
5.	Myra's is going to be 5 years old. Her mom baked a cake and prepared 5 candles. They are red and blue candles. Myra draws all the different combinations using red and blue candles could be on her birthday cake. For example, 5 red candles, 4 red and 1 blue candles, 3 red and 2 blue candles, etc. Help Myra record the information and find how many different ways could there be.	
6.	For his birthday, Alexander is going to invite 5 friends to the party. They will get 3 candy bars and 2 balloons each to take home. How many candy bars and balloons will Alexander need?	
7.	Samuel invited nine children to his birthday party. They are going to play a game in pairs. Each pair will need a balloon and 4 strings. How many balloons and strings will they need?	
8.	At a birthday party, Peter, Quentin, Ron, Sujitha, and Tanisha are sitting around a table. Quentin sits in the chair between Peter and Sujitha. Tanisha is <u>not next</u> to Sujitha. Who is sitting on either side of Tanisha?	
9.	Kyra received 7 shiny coins for her birthday from Grandma Jean. The coins add up to \$0.48. There was at least one coin of each type. What coins did she receive?  ___ quarter(s) ___ dime(s) ___ nickel(s) ___ penny(pennies)	
10.	Find Cynthia's birthday based on the following clues. <ul style="list-style-type: none"> <li>• Cynthia's birthday is on the 31<sup>st</sup> day of the month.</li> <li>• Her cousins, who is only 5 months younger than her will celebrate his birthday on the day of Halloween.</li> </ul>	
11.	Annie is turning 8 years old this year. Joshi is three times as old as Daniel is this year. If their total age is 60 years, how old is Joshi?	
12.	Emma got a jar of candies for a birthday present. She and her friends ate half the candies on her birthday. The next day, they ate three-quarters of the number of candies that they had eaten the day before. There were eight candies left. How many candies were in the jar to begin with?	

<p>13. March 28, 2014 was a Friday. Timothy celebrated his 10<sup>th</sup> birthday on that day. On February 24, his parents celebrated their 15 years wedding anniversary. What day of the week was February 24, 2014?</p>	
<p>14. Twins Ella and Lucy's parents have created a birthday gift policy, whereby Ella receives \$10 on her 10<sup>th</sup> birthday, and each birthday thereafter, she gets a \$2 raise. So, on her 11<sup>th</sup> birthday, she received \$12, and on her 12<sup>th</sup> birthday, she received \$14, and so on, until her 30<sup>th</sup> birthday.</p> <p>Their parents gave Lucy, on the other hand, a penny on her 10<sup>th</sup> birthday. When she turned 11, she received two pennies, and when she turned 12, she received four pennies.</p> <p>When the twins expressed their concerns that this was not a fair policy. Do you think it is a fair policy? Why?</p> <p>Hint: Make an organized chart.</p>	
<p>15. Tony was celebrating his 10<sup>th</sup> birthday on October 1, 2019. It was a Tuesday. What day would it be when he is turning 13 years old?</p>	
<p>16. Andy has birthday on the same day with Nate. Andy is three times Nate' age. In ten years, Andy will be twelve years older than Nate. What are their ages now?</p>	
<p>17. Ryan is now 4 years older than Erik. Five years ago, Ryan was twice as old as Erik. How old was Ryan 5 years ago?</p>	
<p>18. Lynn was born in 2014. Lynn saved a nickel every day starting at the age of 4. If today, October 1, 2020 and Lynn has accumulated \$47.55, what date was she born?</p>	

*Solution is available on October 23, 2020 at [www.mathinaction.org](http://www.mathinaction.org)*