

Marlee the Mathematician and The Birthday Countdown

Facilitator's Guide



Thank you for purchasing a copy of *Marlee the Mathematician and The Birthday Countdown*. This guide is intended to support you as you help your young mathematician(s) engage with the story, count backwards, discover the hidden math in the illustrations, and develop their math literacy superpowers! I hope this guide supports you as you support your reader(s).



Note...there is a lot of GREAT information in this guide. Don't feel pressured to include all of these ideas at once. Read through it and decide what to include and try new prompts each time you read. This experience should be joyful for you and the reader(s). Let the party begin!



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1. In the opening spread, Marlee affirms the spelling of her name with two e's and tells the readers about some of her favorite things. Ask your reader(s):
 - a. How they spell their name(s)
 - b. If any letters in their name repeat. Once they respond, ask them how they know.
 - c. To count the letters in Marlee's name
 - d. What $2 + 3$ is. Once they respond, ask them to explain their thinking.
 - e. What things they love to do
 - f. How they celebrate their birthday
2. Marlee is a proud Christmas Even baby! Ask your reader(s):
 - a. When their birthday is
 - b. If they recognize any number words (e.g., one or two) or numerals (e.g., on the calendar) on the page
 - c. If they are ready, invite them to count the 31 days on the calendar
3. Marlee the Mathematician shares her birthday countdown plans with her mom. Notice she mentions how mathematicians practice. This is a perfect place to talk with your readers about how practice helps us grow our brains and strengthen our math superpowers!
4. Marlee creates a guest list of 14 friends and family members for her party. Invite your readers to count backward from 14. You may also ask them who they would invite if it was their birthday party.

5. The next spread is a shout out to my first book, *Operation Feed the Ducks with Marlee the Mathematician*. On this page, you can ask your readers to:



- a. Count backward from 13
 - b. Count the number of ducks on the page
 - c. Count how many pieces of bread Marlee has. She has six pieces. You can extend this by noticing five pieces in the basket and one piece in her hand. Readers can begin to think about six as being one more than five, $5 + 1 = 6$, or $1 + 5 = 6$.
 - d. You can repeat this for Lewis's bread. You can talk with your readers about how they both have six pieces of bread. This can lead to a discussion of the amounts being the same or equal.
 - e. You can also ask how many ducks are already eating some bread. They should see one duck eating.
 - f. Conclude by discussing $\text{six } (6) + \text{six } (6) + \text{one } (1) = 13$. Some kids may know doubles $6 + 6 = 12$ and then know that 13 is one more.
6. The page with twelve blocks is SO much fun! Not only can you ask your readers to help you count backward from 12, ask them if they notice anything about the colors in the numbers (e.g., red, green, orange). This pattern, which we call an ABC pattern, is repeated in the block tower. Encourage your reader(s) to repeat the pattern out loud (e.g., red, green, orange, red, green, orange) aloud as you point to the blocks.

7. By now, your readers may want a movement break. Invite them to count backward while doing 11 jumping jacks. Go for the cartwheels if you dare!
8. Marlee picks the MOST beautiful flowers for her friends. Notice that 4 of the ten flowers are fuchsia, 3 are yellow, and 3 are orange. This is a great place to help readers see that ten can be broken into four, three, and three. They can eventually write a number sentence $3 + 3 + 4 = 10$.
9. Invite the readers to count backward from nine. Use this opportunity to ask your reader(s) if they play or watch sports.
10. As you learn about Marlee's LOVE for playing dress up,
- Ask your reader(s) can count backward from eight.
 - Ask reader(s) if they notice any patterns on the page. They may notice the color of the numbers (red, green, orange, blue). They may also notice the necklaces are in two rows of four OR four columns of two. Noticing these groups (or arrays) is a way to start thinking about skip counting and multiplication as repeated addition.
11. Sweet strawberries are always a treat! There's lots of good stuff on this page:
- Notice the color pattern (e.g., red, green, red, green) in the countdown
 - Seven is broken up into $3 + 3 + 1$. You can see this with two groups of three strawberries on the plate and the one in Marlee's hand.
 - You can also talk about 7 as being half of 14 since Marlee mentions being halfway through her countdown.
12. The six dolls are in two groups of three (three on the couch and three on the floor). You can also invite the readers to notice the beautiful diversity in Marlee's doll collection.

13. Doesn't Marlee have amazing handwriting to be so young...LOL. Invite your reader(s) to read these affirmations aloud. Ask if they have a favorite one or perhaps there is another affirmation that inspires them.
14. Cooking and baking offer rich mathematical experiences. On this page, invite your readers to:
- Count the loaves of banana bread. Challenge them to count the four loaves forward and backward.
 - Ask how many bananas Marlee and her dad used when baking. Encourage them to explain their response by saying, "How did you know?"
 - Ask them how many bananas are left over. Again ask them to explain their thinking.
15. You **MUST** play a round of rock, paper, scissors with your reader(s) after reading this page. This can be a fun movement break during the story time.
16. In addition to counting Marlee's two puffs, readers can also count the flowers in the bottom left image. You may also invite them to show you two fingers.
17. Marlee is now just **ONE** day away from her birthday. Invite your reader(s) to look around the room to identify instances of the number one (e.g., one red jacket, one bed, one toy shark).
18. Zero holds a special place in our number system. Ask your reader(s) if they know what zero represents and to think of examples of it.
19. You've finally reached the **BIG** moment! Invite your reader(s) to count backward from eight and shout "Happy Birthday Marlee!"