

## A FUNNY WAY OF LEARNING MATHEMATICS WITH INTERACTIVE BULLETIN

## BOARDS

Cigdem Ozdemir<sup>1</sup>

Bilkent University

M. Sencer Corlu

Bilkent University

**Abstract**

There are lots of tools that enrich teaching of mathematics out of the lessons. Interactive Bulletin Board is one of those tools that enables students learn mathematics in a funny way. In this paper, I wrote about the properties of an interactive bulletin board that I designed. I analyzed my interactive bulletin board in different aspects such as preparing period of interactive bulletin board, appropriateness with the grade levels, correspondence with the National Council of Teaching of Mathematics standards and Ministry of National Education objectives. I also wrote my reflections about student involvement as I had a chance to show my interactive bulletin board in Bilkent Laboratory and International School at fifth and eighth grade level classes. Mentor evaluation is also included in this paper.

*Key Words:* Interactive Bulletin Board, learning mathematics, student involvement

---

<sup>1</sup>Correspondence concerning this article should be addressed to [cigdem.ozdemir@bilkent.edu.tr](mailto:cigdem.ozdemir@bilkent.edu.tr)

# A FUNNY WAY OF LEARNING MATHEMATICS

## Introduction

The purpose of this article was to reflect my analysis on my own Interactive Bulletin Board (IBB). Firstly, I gave details of my IBB through a format for write-up, also by giving a drawing and a photo. Then I wrote my own reflections about my IBB with the student involvement. Finally I wrote my mentor's evaluation and her feedbacks in this paper.

### My Interactive Bulletin Board: Save Mathy!

Creating an IBB was a hard process for me as I didn't used to such activities. I had to think about all the features of an IBB, so I changed my mind lots of times. I chose a topic "Divisibility" and decided to work on this topic. I created a game draft and changed the rules of the game lots of times with trying and thinking on the game. Finally the game was ready with accurate rules but without a title. I thought that the title should have included "mathematics" inside it. So I created a new name "Mathy" and the title of my IBB was ready: "Save Mathy". The draft figure of my IBB is shown in Figure 1.

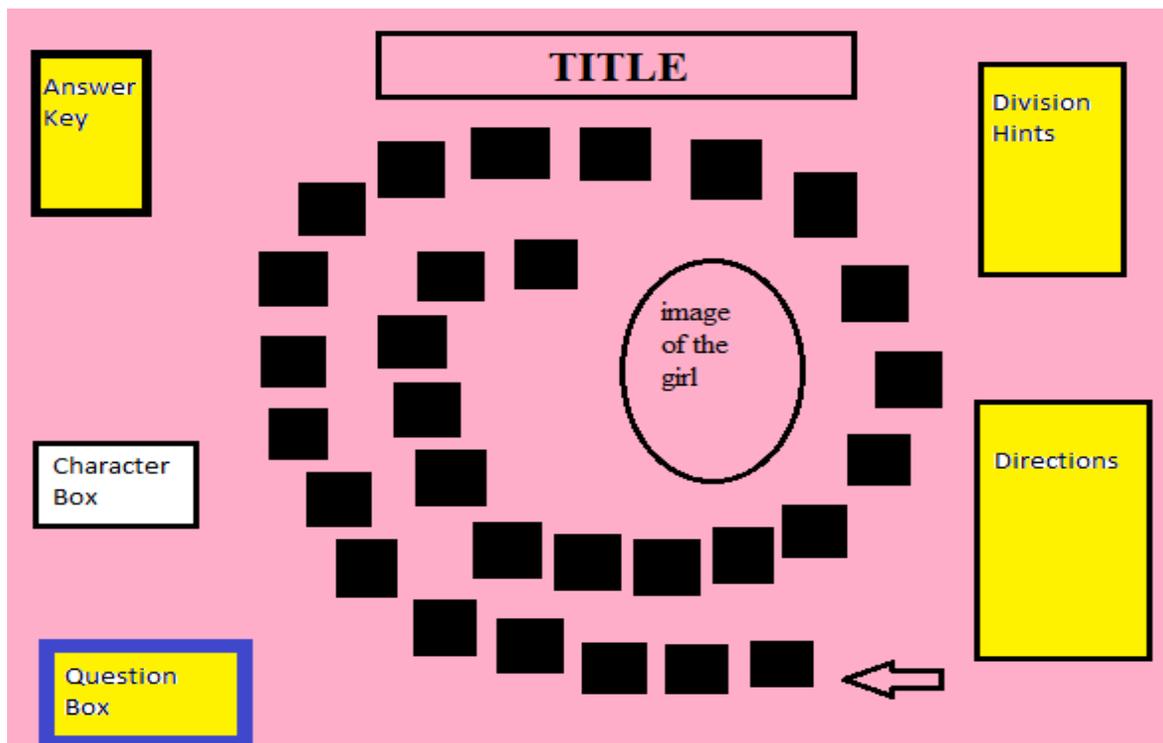


Figure 1. Neat detailed drawing of IBB.

## A FUNNY WAY OF LEARNING MATHEMATICS

**Title:** Save Mathy

**Grade Level:** from 5<sup>th</sup> to 8<sup>th</sup> grade level

**Objectives:** Students will be able to find the remainder of division operations easily with using divisibility rules in divisibility of numbers to 2,3,4,5,8,9 and 10. Students will practice their division abilities by having fun with playing a game.

**NCTM content and process standards:** The objective of my IBB is included in NCTM content standards for 6-8 grade levels which is “All students should use factors, multiples, prime factorization, and relatively prime numbers to solve problems” (NCTM, 2013). The IBB also involves with the NCTM process standards which are problem solving, reasoning and proof, communication, connections and representation, especially with the communication phase:

- Organize and consolidate their mathematical thinking through communication
- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others
- Analyze and evaluate the mathematical thinking and strategies of others;
- Use the language of mathematics to express mathematical ideas precisely. (NCTM, 2013)

**MoNE Objectives:** All students are able to explain and use the exact divisibility of the numbers to 2, 3, 4, 5, 6, 9 and 10.

For my IBB, students may need paper and pencil with regard to their grade levels. For example while higher grades can solve the problems in their minds, lower grades may need paper and pencil. While I was preparing this IBB, I used five different colors of cardboards. I used pink cardboard as the base of my IBB, I cut black cardboards into small squares and made them the steps of the road, I also cut blue, yellow and red cardboards to make the question cards. I prepared 50 question cards. I covered every material with the tape in order not to be destroyed. I

## A FUNNY WAY OF LEARNING MATHEMATICS

printed the images of super heroes and Mathy from the internet, I cut them, made them solid and covered them with the tape. I chose the super heroes as both female and male in order to gain curiosity of both girls and boys. I used transparent acetates and stuck them on the black steps of the roads, so that students could place the question cards on the black steps of the road. Here is a photo of my IBB which is shown in Figure 2.



*Figure2: Image of Interactive Bulletin Board*

I prepared an answer key and direction paper and covered them with the tape. I stuck the directions on the IBB but I attached the answer key in a removable way. I also printed the division hints and stuck it on the IBB so that students could get clues if they don't remember the division rules. I made a dice from a cardboard, and covered it with the tape. I made a box from a

## A FUNNY WAY OF LEARNING MATHEMATICS

cardboard in order to put dice and question cards and covered it with yellow cardboard and stuck it to the IBB. I made an envelope from transparent acetate to put the superheroes into it. I put some images such as flower, snake, smiley, skull which makes students to move forward or backward in order to make the game funnier. I wrote the directions clearly so that students could play the game without my help. I wrote the numbers of each question on the number cards so that students could easily check their answers from the answer key. My IBB is consisted from a game: Mathy is falling down from a huge building. You should save Mathy with using your mathematics skills in division rules. The game is played between two individuals or two teams of students. Before starting the game each team chooses five cards from question box and places them on the black steps wherever they want. Each player rolls the dice and who rolls bigger, he/she starts first and chooses his/her character first from the character box. The first player rolls the dice again and determines his or her starting point. If there is no question card at the step, player waits for the next turn and rolls the dice next turn. If there is a question card, the remainder of the division problem tells the player how many steps he/she will go. One of the students takes the answer key and checks the answers. If the answer is wrong, player waits for the next turn. The images on the road means that: Flower: move five steps forward, snake: move to the starting point and wait for the next turn, skull: move ten steps back and wait for the next turn, smiley: move three steps forward. There are 50 division problems and some of them were;

1238975/2 ,

979376/3,

3498721/4,

2387464/5,

23489722/8,

## A FUNNY WAY OF LEARNING MATHEMATICS

32487628/9,

34957356/10.

At each turn of the game, students choose different question cards and place them wherever they want on the road, so students create their own scheme of the game. Student can easily reach the directions at the right hand side of the IBB and they do not need further directions. As the answer key is stated clearly with respect to the numbers on the question cards, one student easily check players' answers or players can check their own answers. Luck is also important in this game as students rolls the dice if there are no question cards at the steps. Students have to find the remainder of the division problems in order to move forward. So students practice their abilities in division rules by having fun.

This IBB can be used for different ability levels from five to eight grade levels. As students need to practice the division rules at those levels, this IBB can be very useful for them. For lower grades such as fifth grade classes, students also can learn how to find remainder of division problems through this IBB.

This IBB is very suitable for different topics and different subject areas as well. By changing the questions, students can learn different subjects by having fun. Also this IBB is very durable and can be used again and again. Although this IBB was played by lots of students, it wasn't destroyed.

### **My Reflections on the Product**

I had a chance to show my IBB at fifth and eighth grade classes in BLIS. When I entered the classrooms with the IBB, students were curious about what it was. At the end of the lessons students played the IBB. Although I had prepared this IBB for from six to eight grade level

## A FUNNY WAY OF LEARNING MATHEMATICS

classes, I surprised that fifth grade students could easily play the game on IBB. So I changed the grade level as from fifth to eighth grade levels. Another thing that I surprised was that students didn't need my help after I determined the players. They read the directions and played the game easily. The super heroes were a big motivation for students as they chose their favorite super heroes. At fifth grade class, students played between two individuals and at eighth grade class, students played between two teams. The players were struggling to reach Mathy as soon as possible. Students were communicating each other with their team mates to solve the problems correctly. Other students were watching the players curiously. Winners of the game demonstrated a huge enthusiasm. After one game was finished, other students immediately determined their own teams to play the game. One student got sad because he couldn't play with the IBB because of not finishing his class work early. So he requested me to bring the IBB again next week. I was very happy that students demonstrated that much interest to my IBB.

After I observed students while they were playing the game on IBB, I experienced that mathematics can be adapted into a funny subject area through the interactive tools such as IBBs. I saw that as much as students interacted with the IBB, they learned the topic better. As my IBB was created in the way that you can move by solving questions, student got happy when they encountered the question cards. So I learned that students could develop positive attitude towards mathematics with IBBs. Here are photos of student interactions with the IBB in Figure 3 and Figure 4.

## A FUNNY WAY OF LEARNING MATHEMATICS



*Figure 3.* Interactions of grade five students with the IBB

## A FUNNY WAY OF LEARNING MATHEMATICS



*Figure 4.* Interactions of grade eight students with the IBB

### **My Mentor Teacher's Brief Evaluation**

I showed my IBB to one mathematics teacher and my mentor teacher. Both of them liked it very much especially the title and the way that it provides students revise division rules through a game. My mentor found the IBB appropriate to middle school, mostly for seventh and eighth grade levels. She said that this activity could be also used at grade nine for warm up. So she mentioned that the activity is appropriate and useful for wide range of grade levels. My mentor also gave feedback about my IBB. She pointed out that this game could be challenged via keeping time. Also she said that this activity might work with a referee watching to determine

## A FUNNY WAY OF LEARNING MATHEMATICS

winner. According to my mentor, this game might be updated by putting more than five cards for providing fewer blanks on the road.

### **Conclusion**

I learned lots of things through designing an IBB. While I was designing the IBB I had to think every detail in order to make the IBB appropriate to my aims. Having a chance to observe students' involvement with the IBB, I realized that I achieved my purpose. I learned through this activity that teaching mathematics should have been enriched by IBBs. Consequently I saw that as much an activity requires student interaction, as more students get benefit from that activity. It was an enormous happiness for me to see the products of something that I designed.

# A FUNNY WAY OF LEARNING MATHEMATICS

## References

National Council of Teaching of Mathematics (2013). *Principles and standards for school*

*mathematics*. Retrieved from

<http://www.nctm.org/standards/>

"A Bilkent student does not lie, cheat, or steal or tolerate those who do. On my honor, as a Bilkent student, I have neither given nor received unauthorized aid on this academic work."

---

Cigdem Ozdemir

---

---