

# Learning Area and Perimeter Through Play

Rahul Singh Rathore

Play is one of the main ways through which children learn and develop. When we explain a concept in any subject, such as an event in history, a poem or a concept in mathematics, it can be made more interesting and meaningful through play. In an environment in which children themselves do things, they move towards learning easily and quickly. I want to share one such experience of mine.

In class V, I was getting ready to teach the topic, *Perimeter and Area* and decided to explain these two concepts through games and activities. I took the children to an open field and asked them to tell me one game that they like so that we could play it. All the children wanted to play *kabaddi*. So, I divided the children into two teams - A and B. The *kabaddi* match started. The children of team A were scoring more points, so team B said that the size of team A's court was bigger, that is why they were scoring more points. Team A said that this was not correct. Both the teams started arguing.

I told them to measure the playground. Based on their previous knowledge from class IV, they said that if they measured the area, the truth would come to light. All the children agreed to do this.

But now the problem was how to measure it? One child suggested that we first measure a small part, then, based on that, the remaining part could be calculated. Everyone agreed. I divided the children into three groups – A, B and C and assigned a part of the playground to each group and asked them to find the area and perimeter of that part. I told them that they must measure the field using the material they find in the field. Everyone started by choosing the material they would use. Some children used a wooden stick, some used tiles and some used their fingers.

The conversation that took place between some children is given below. As the teacher, I facilitated this discussion and steered their thinking in the right direction.

## Group A

Ravindra: We have drawn a line around our part of the playground. But we do not know what to do next.  
Teacher: We have to find out the area of the court we were playing in.

Ravindra: But we need to find the area of the part covered by the line we have drawn.

Teacher: Yes.

Ravindra: So how to find out how much space is occupied by the part of court given by you?

Teacher: How did you figure out the area of leaves in class IV?

Children: We counted the squares by placing the leaf on graph paper. The number of squares that we got was the square unit area.

Teacher: So, can you do the same in this case?

Gairki: But we will need graph paper.

Teacher: Will you place the graph paper on the entire *kabaddi* court and measure it? In that case, if the area of the playground is to be calculated, then we will have to paste the paper on the entire playground and then count the squares.

Gairki: If we do that, the paper will fly away. Then how to measure? Where will we get so many papers?

Teacher: You can take some object to measure it.

Gairki: Okay. I have got this piece of plastic and have given it a square shape. Now we will measure with this.

Teacher: Okay.

Raju: But how will we measure with it?

Praveen: Let me demonstrate. We will mark the place wherever we place this piece of plastic. In this way, the number of pieces that occupy the space will be its area.

Monica: (pointing to the ground) But there is some space left here, how will we measure it?

Praveen: To calculate the area of leaves on graph paper, we counted more than half-filled squares as one square and did not count the ones that were less than half-filled. We will do the same here.

Raju: Okay.

Praveen: Look at this, we are getting a total of twenty squares here. So, its area is 20 square units.

## Group B

Mayank: We have also measured it this way.

Teacher: Tell us how you did it. Then the children of group A will also know about it and we can measure our playground.

Mayank: We have measured with an eraser. We

kept it on the given part 300 times. So, the area of our part is 300 erasers.

Raju: But our part of the field was as much as theirs. How come we got only 20 squares, and they got as many as 300 erasers? It means that their area is bigger.

### Group C

Sunil: Our group measured the area with a wooden stick. Our part was almost the same as theirs. But we covered our part by keeping the stick a hundred times. Therefore, our area is 100 units. Each group is getting a different area while the piece of field is the same, so how can it be correct?

Diva: Why don't we measure everyone's part of the field with a similar object, then the answer may be correct.

Teacher: Yes. By measuring with a similar unit, the answer will be correct. Because when we measure the area of our fields, houses, plots, it remains the same and its value is also the same everywhere.

Diva: But we measured such a small part. How do we measure our playground which is so big?

Teacher: Look at your part and think about the material that can be used to measure the area.

Mayank: My uncle measures with a (measuring) tape and calculates the area.

Diva: But only the length can be measured with it, how will we get the area?

Teacher: All of you look at your part. Observe if you see a pattern that allows us to find the area quickly.

Children: Okay, we will do this.

Gaurav: I have seen the part of the field given to everyone. It seems to me that if we multiply one side by the other side, then we get to know the number of times we have covered the ground.

Gairki: This means that we can also measure the surrounding boundary.

Teacher: Yes, why not? This is known as the perimeter.

Raju: So, can we measure our playground with the help of a big stick and get the area?

Teacher: Of course, you can.



In this way, all the children shared the *kabaddi* ground equally and used a stick (same unit) to measure it. Other children of the school also used it, which helped them to understand the concept. We continued the same unit in the classroom and the concept of area of rectangles and squares was formulated in the same manner.

Children like to play with different types of materials. They easily engage in the manipulation of materials. When given appropriate tasks with adequate and suitable materials, children are naturally attracted to them and prefer to use them to complete tasks. Children feel burdened and uninterested if asked to work without any play activity and proper material. Generally, young children are attracted to objects of different colours and sizes. They are curious to work with their hands in different ways. This helps in developing the habit of playing with different objects which, in turn, enhances their creativity. In addition to the textbook, there is a wide range of ways in which learning can happen. With proper guidance from teachers, these methods can enhance children's learning.

*\*Names have been changed to protect children's identities.*



**Rahul Singh Rathore** is a mathematics teacher at the Azim Premji School, Sirohi, Rajasthan. Prior to this, he has worked in several other institutions in Rajasthan. He is a post-graduate in mathematics, with a B Ed and a post-graduate diploma in Computer Applications. He may be contacted at [rahul.rathore@azimpremjifoundation.org](mailto:rahul.rathore@azimpremjifoundation.org)