



## THE 2022 YOUNG MATHEMATICAL STORY AUTHOR (YMSA) COMPETITION

THE STUART J. MURPHY AWARD  
(THE 8-11 YEARS OLD CATEGORY)

### SHORTLISTED

'Problematic Pitch!' by Aidan Burford (9 years old)  
at St Benedict's Catholic Primary School (UK)

You can read the author's inspiration for the story and the judges' comments  
on:

[www.mathsthroughstories.org/ymsa2022](http://www.mathsthroughstories.org/ymsa2022)

#YMSAMaths

# Problematic Pitch!

By Aidan Burford

Jungle theatre

Pitch

Sweet stand  
crisps

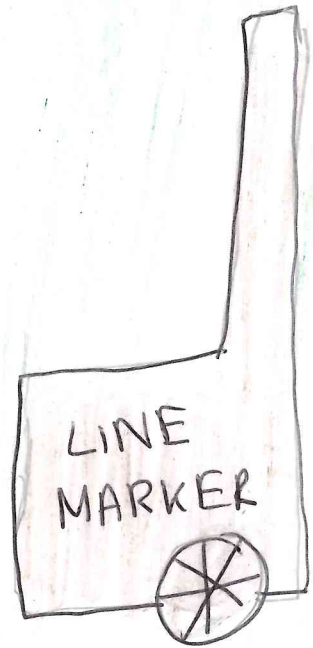
ST. BENEDICT'S  
CATHOLIC  
PRIMARY SCHOOL  
CHATHAM



Aidan was the manager of Tiger Football Club. His team were in the cup final. They had worked hard all season to beat each and every opposing team, with Ruby as their leading striker. Today was cup final day.



Aidan's first task on any match day was a 9am pitch inspection. This was especially needed today as all night he had listened to the pitter patter of rain against his window. When he arrived at the Jungle Stadium and stepped out onto the grass field, his feet sunk into the soft waterlogged pitch. It was a bog. There is no way they could play on this pitch. If they cancelled, they forfeit the match – he had to find a new pitch and fast.

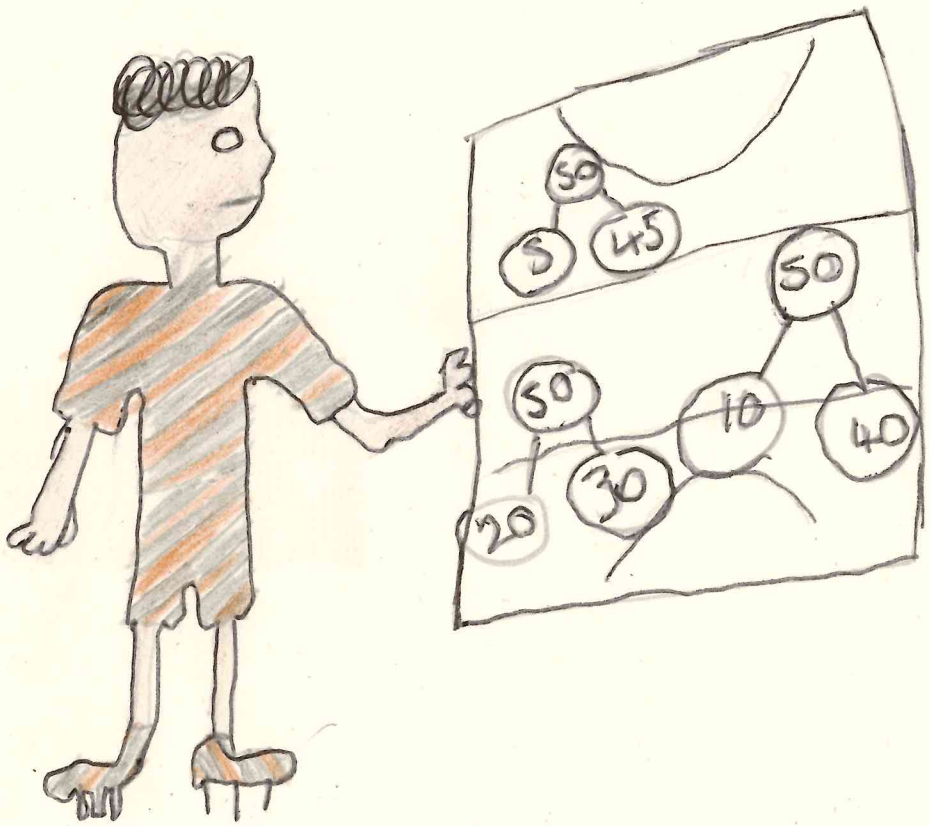


Aidan made some calls, ran to the storage shed, put line marker in his truck and headed to the local park. The players would soon be arriving at the new venue. He poured the paint into the line marker when he realised, he only had enough paint to mark 50meters. What could the length and width of the pitch be? How could he figure it out? He needed help.

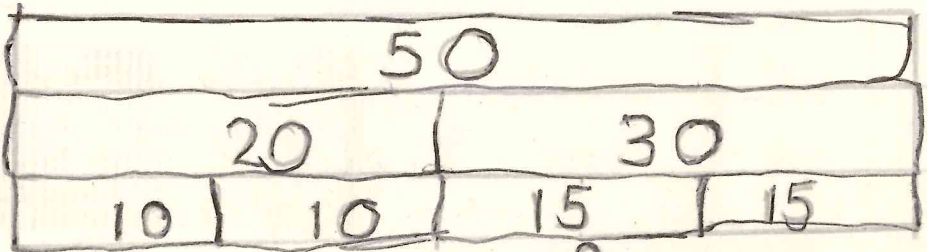
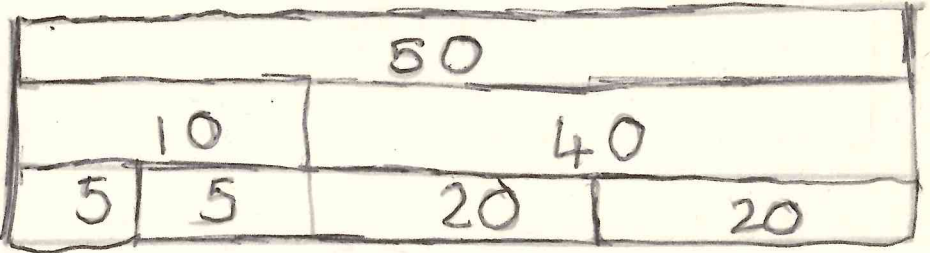
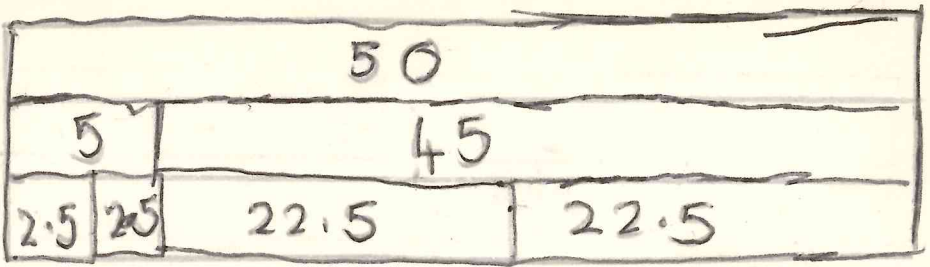


Ruby was the first to arrive and Aidan told her the problem. She told him not to worry and began to solve the problem as she had been learning about this at school. She said, "We have enough paint to paint a rectangle with a perimeter of 50 meters."

"That's right and we know a rectangle has 4 sides, 2 longer sides and 2 shorter sides." Explained Aidan.

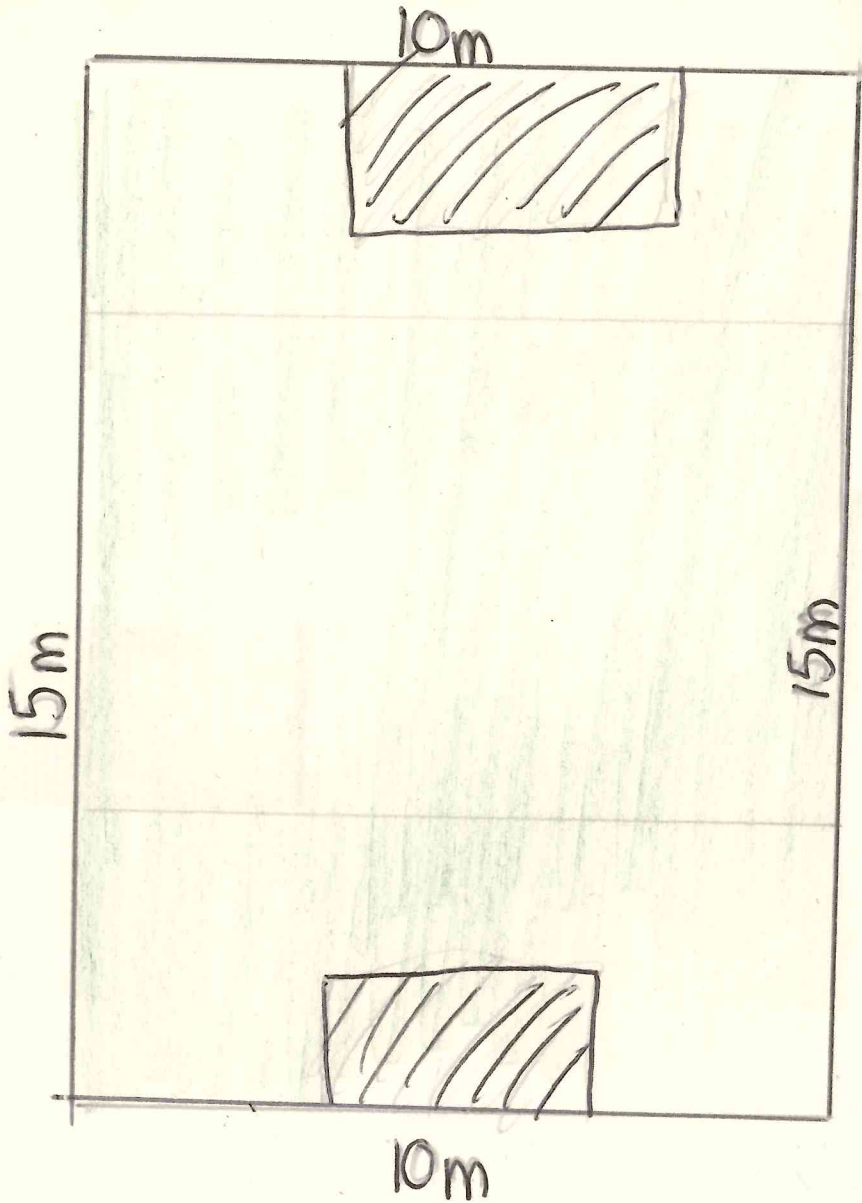


They started throwing around some ideas, but they began to doubt they would finish the whole pitch in time. Ruby mentioned that you can make fifty in many ways like  $5+45$ ,  $10+40$ ,  $20+30$ , Ruby said, "maybe you could half both numbers to figure out the length of the perfect size of this problematic pitch."

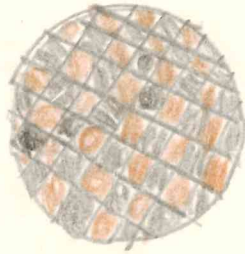


Ruby used her knowledge of bar models to calculate the possible length of each side. She set to work. Finally after a nerve wracking 15 minutes they had worked it out. They halved 30 to calculate the length of the longer sides it was 15. Then they halved 20 to find out the length of the shorter sides. Half of 20 is 10. The perfect pitch. All they had left to do was mark the pitch.





They measured out the pitch as all the players warmed up. Math and Ruby by had saved the day before she had even kicked a ball.



Aidan and Ruby used their knowledge of length and perimeter to give The Tigers a chance of winning the Cup Final

