THE 2024 YOUNG MATHEMATICAL STORY AUTHORS (YMSA) COMPETITION

THE STUART J. MURPHY AWARD

(THE 8-11 YEARS OLD CATEGORY)

SHORTLISTED

‘The Orange Archer’ by Ilan Shaikh (9 years old)

at The Hall School (UK)

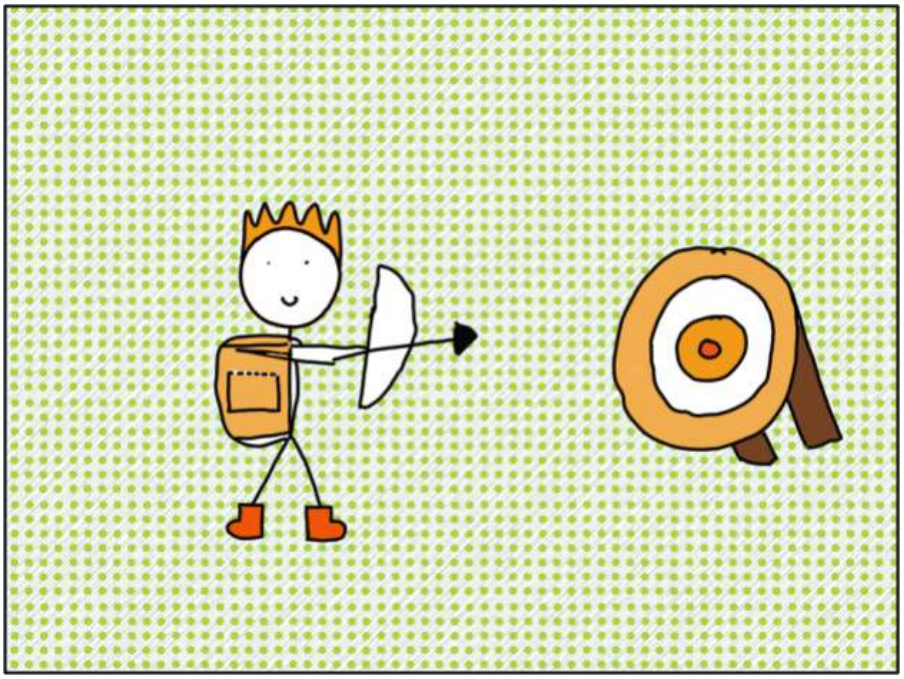
You can read the author’s inspiration for the story and the judges’ comments on:

www.mathsthroughstories.org/ymsa2024

#YMSAMaths

The Orange Archer

A story about angles



by Ilan Shaikh

The Hall School

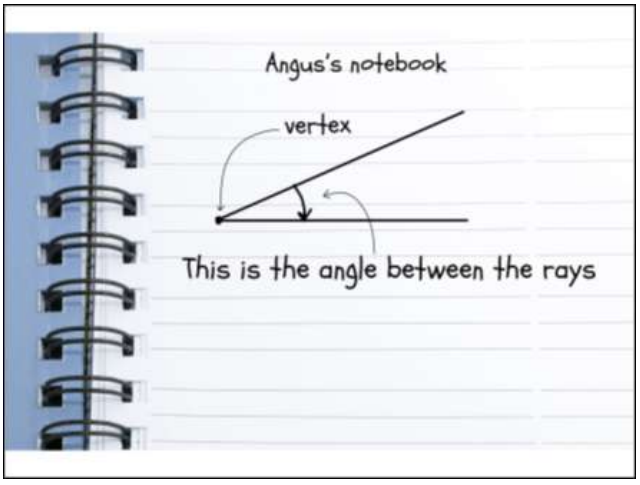
Age 9, male

Degreeville Primary School was an old, worn down school nestled amongst a grove of oak trees. Acorns decorated the wet, muddy soil that circled the school. DPS seemed like an ordinary place but extraordinary things were rumoured to happen there. Today looked like a normal school day apart from the fact that the sky was an unusually greenish colour. The pupils were too busy throwing acorns to care. Well, all of the pupils except a flame-haired boy called Angus.

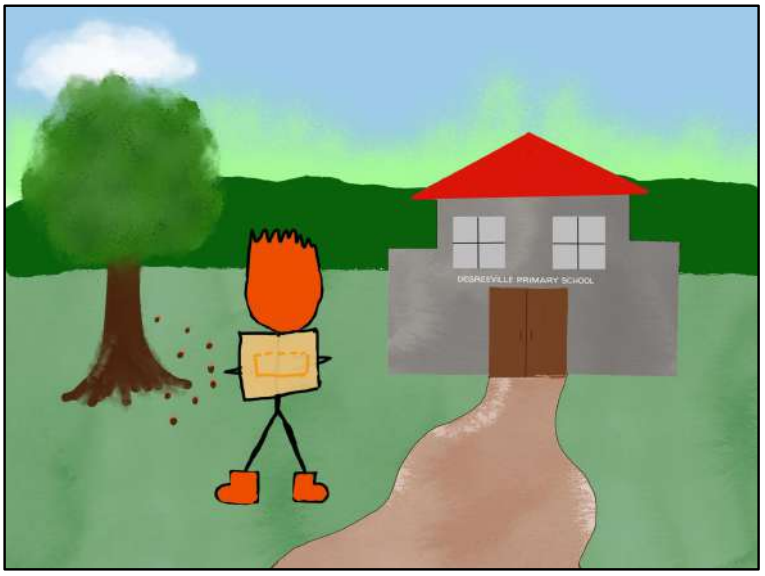
Angus was a curious boy. His eyes, which were almost the colour of the unusual sky, were focused on the confusing hue of the horizon. He shuffled his feet, which were wearing a pair of chunky apricot-coloured boots. He stuffed a few Wotsits into his mouth and adjusted his bulky terracotta bag on his shoulder.

Angus looked like any other pupil, apart from his obsession with the colour orange. However, he was no ordinary child. He had two secret talents: archery and mathematics. He was a genius at both. Everyone in school knew he was a maths whizz, but only his best friend Saffron knew about his archery skills. His secret was safe with her.

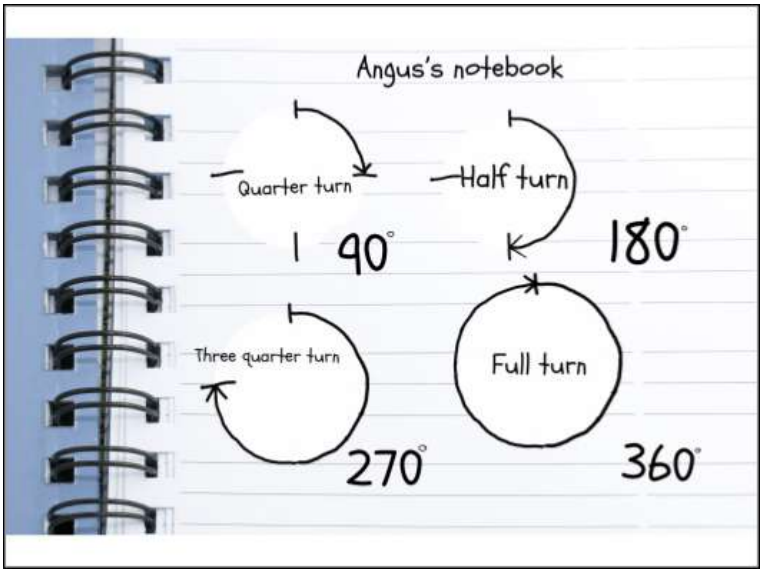
Angus's favourite maths topic was angles. If you looked inside his overflowing backpack, you'd find a marmalade-toned bow, copper arrows, a notebook with lots of maths doodles and a handful of raisins. If you peeked inside his boots, you'd see his trusty laser and protractor, which he used for measuring angles. He was always telling his friends what he knew about angles. "Angles are formed by two rays that share a common endpoint called a vertex. Isn't that interesting?" or "There are six different types of angles: acute, right, obtuse, straight, reflex and full!" He loved living in Degreeville because angles are measured in degrees.



Angus was telling Saffron once again that the internal angles of a quadrilateral add up to 360° when he heard a strange noise, something he had never heard before. It was a high-pitched whistling noise in the distance. All of the students stood there silently as Angus walked towards the noise. Everyone else stepped back. He stood there, staring out waiting for something to happen. The others retreated until Angus was the only one left. He stood alone in front of the school. He could not see anything but the oak trees and the emerald sky, which was getting greener.



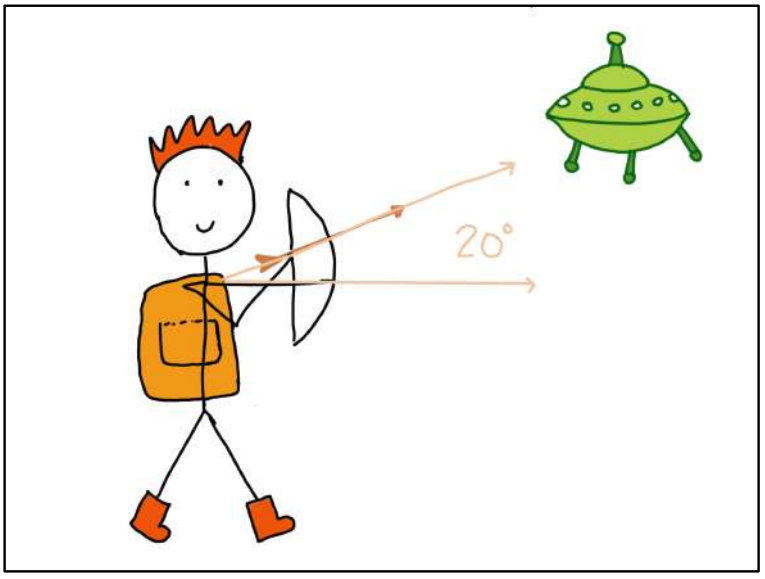
The noise was getting louder and starting to hurt his ears. He carried on looking from every angle including 90° (a ¼ turn), 180° (a ½ turn), 270° (a ¾ turn) and 360° (a full turn).



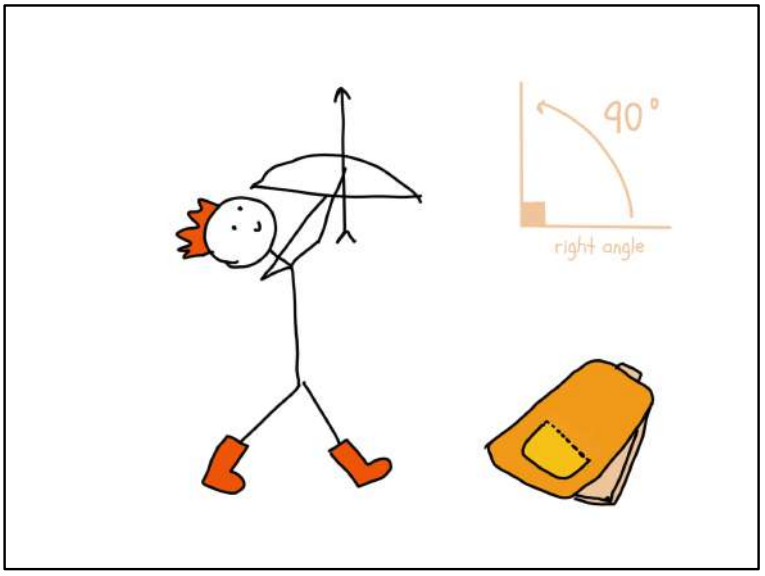
Just then, he spyed several mint green spaceships with bright, fluorescent lights soaring through the sky. He quickly ripped his bow, arrows and quiver from his rucksack and then his protractor and laser from his boots. He knew he would need his

sharpest and deadliest arrow tips if he had any chance of spearing through a metal spaceship.

Using his protractor and his laser, he worked out that the spaceship was at a 20° angle (an acute angle, because it was less than 90°) from the horizon. He lifted his bow and slotted in his first arrow. He released it at exactly 20°. It went straight at the spacecraft and got caught in one of its propellers. The spaceship slowed down, giving him more time to react.

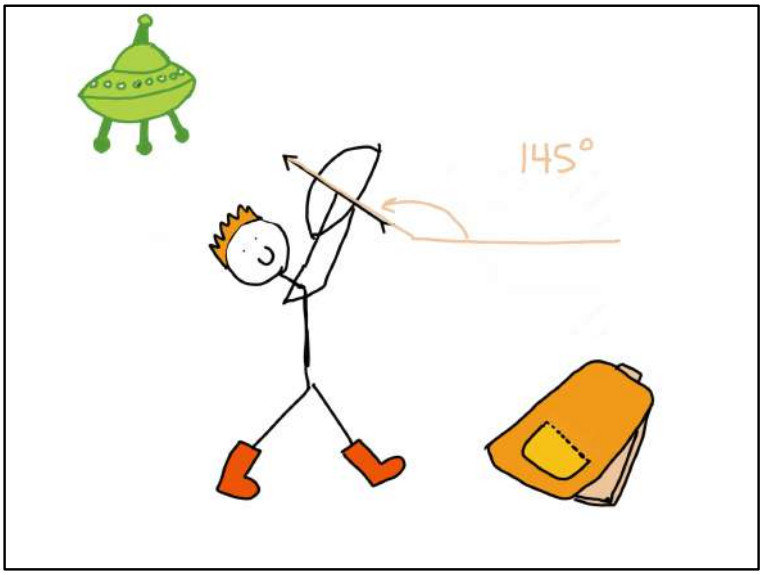


The spaceship flew directly over Angus's head. He released another arrow at exactly 90° (a right angle, perpendicular to the horizon), sending it crashing to the ground. Angus had to jump out of the way, temporarily slowing down his attack.

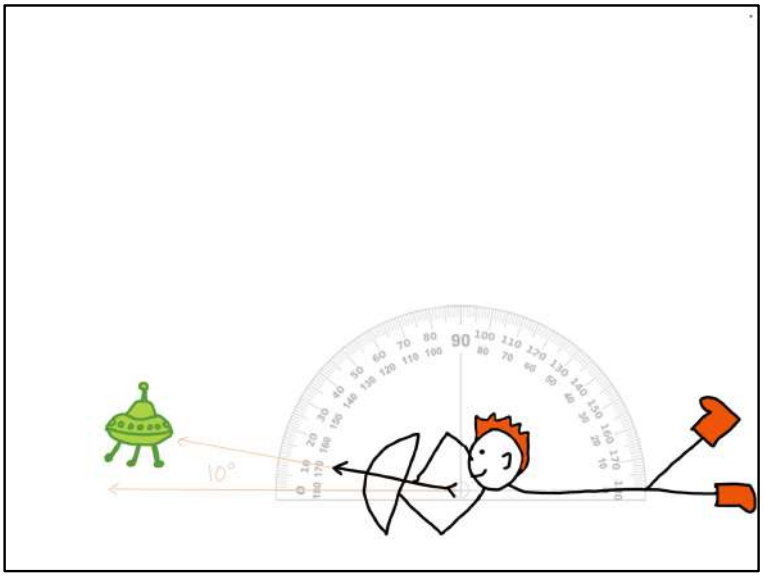


Another spaceship immediately arrived. Angus was in a bad position; the alien had approached from behind. He had to make an obtuse angle. Angus leant back 145°

and fired the arrow. HIT! Angus turned around to face the spaceship which was still flying. He hoped one more hit would take it down. He rapidly looked around to see if there were any more ships to worry about, but he could see none. He could hear their sound though, so he knew he was not safe yet.

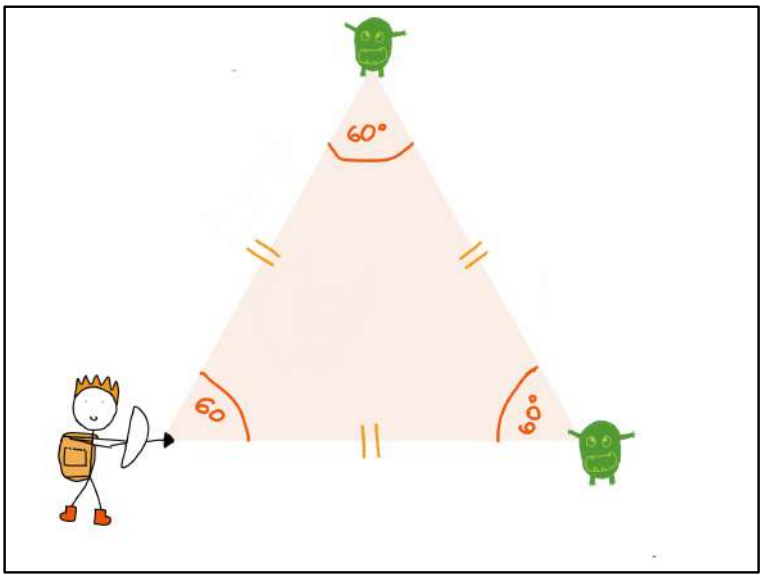


Just then, another flying saucer came swooping from the sky, hurtling towards Angus. Luckily, he dodged it. He spun around trying to track the ship's movement. He completed a full 360° turn, examining the sky as he spun around. This was the last spaceship he could see. It was hovering just above the horizon. Dizzy, he fell down. He angled his bow upwards at a tiny 10° angle and shot another arrow. Finally, the UFO crashed down and Angus had finally beaten the rise of the spaceships. He sighed with relief.

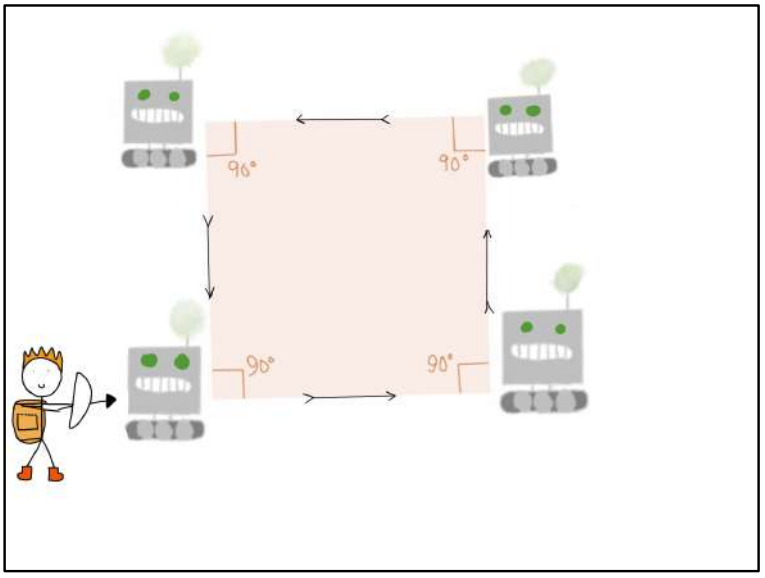


Unfortunately, the danger was only just beginning. Two aliens emerged menacingly from one of the crashed spacecrafts and headed for the school. Angus swiftly tore out

one of his rubberised arrows and dipped it in poison. He ran into the building. The aliens wrecked the school as quickly as they could. Calculating the 60° angles precisely, Angus fired his arrow with great accuracy at the aliens making an equilateral triangle as the arrow bounced off both of the aliens and returned to him. The aliens fell to the ground screeching as the poison started to take effect.

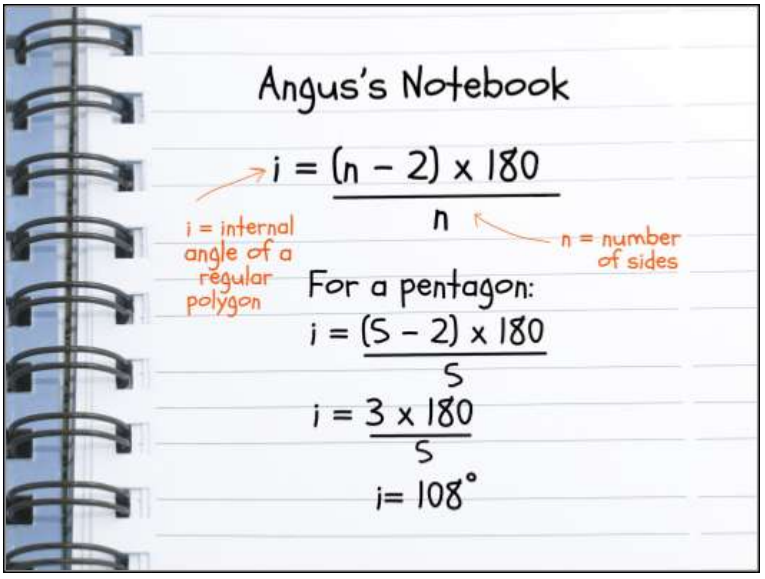


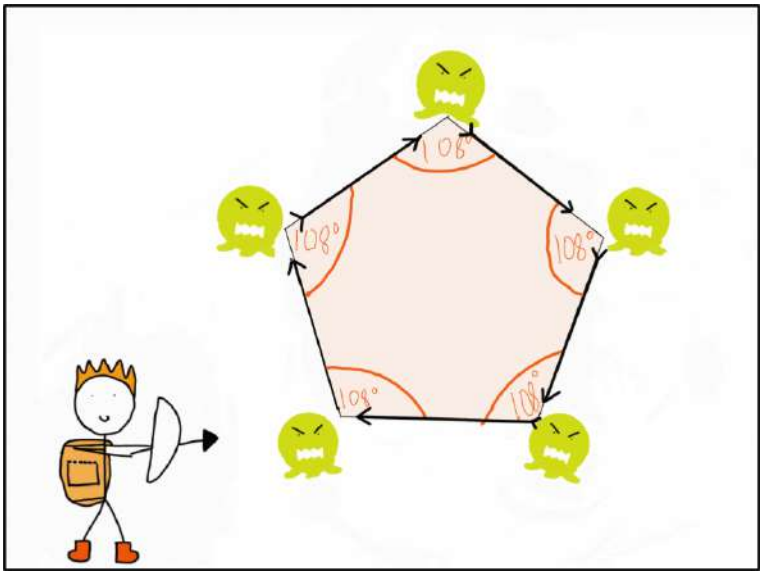
As Angus knelt down to catch his breath, he spotted four silver, dog-sized robots marching towards him in a square formation. Angus launched a rubber arrow at the edge of the first robot, which deflected 90° off each robot and knocked all four of the robots over. Before the robots could figure out how to get back up, Angus swiftly grabbed another pupil's water bottle and doused their electronics. The extraterrestrial robots sparked as they short circuited.



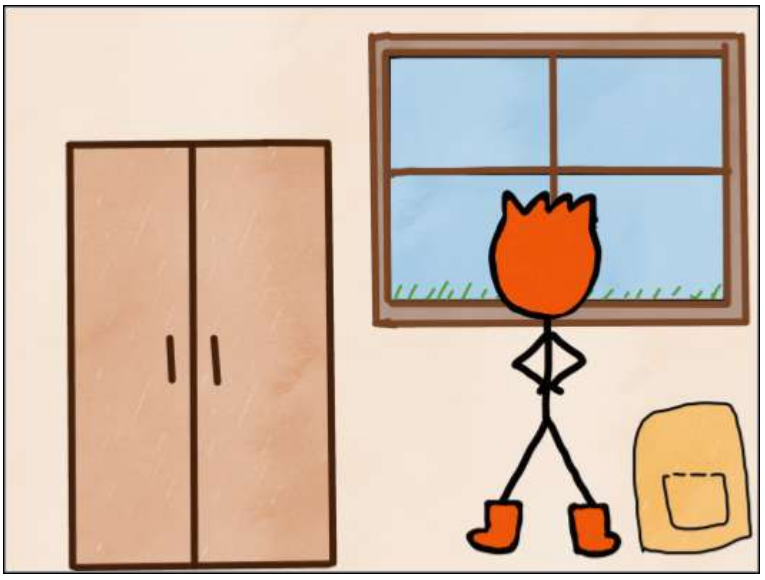
Angus collected his rubber arrow and knelt down to return it to his quiver in his rucksack. As he rose to his feet again, he was confronted with yet another dreadful

challenge: a series of chartreuse-hued, squishy blobs with sharp, triangular teeth bouncing towards him in a pentagon arrangement! Not again! He grabbed the arrow that he had just tidied away. He hadn't practised shooting pentagon shapes before so he hoped he would get it right. Remembering that the internal angles of a pentagon are each 108°, he aimed and released his trusty rubber arrow. The slimy blobs made a squelchy, moaning sound as the arrow bounced off of them. Within seconds, puddles of gooey, green ooze leaked all over the floor where the round blobs once were.



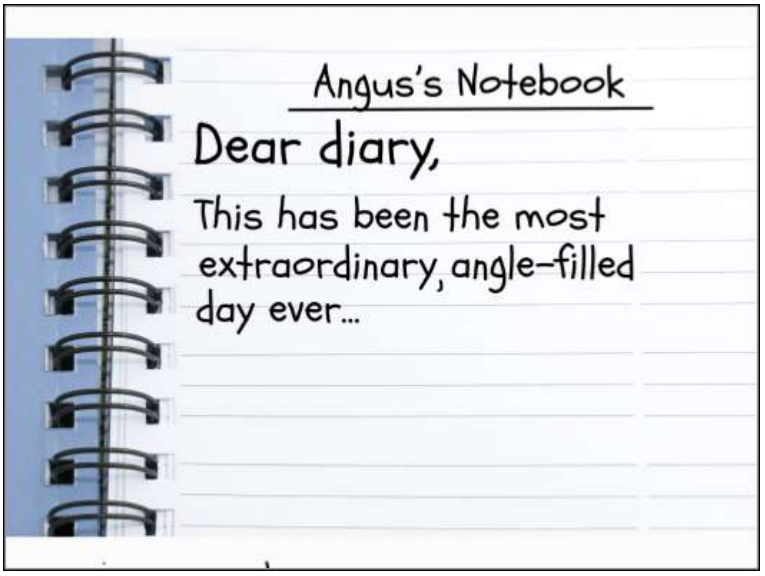


Angus listened for any more noises but was silent except for the sound of a boy breathing who had been hiding in the classroom cupboard. Angus tiptoed to the window and peered outside. He looked to the sky. It was not green anymore, it was an ordinary sky blue colour. He saw no aliens on the ground. He exhaled and his muscles relaxed. He knew that they were all safe.



He dashed over to the boy in the cupboard. Angus opened the door and helped him out. The boy was grateful, “Wow, how did you do that? Thank you!”

Angus was delighted with his accomplishment. Slowly, the pupils appeared from their hiding spots. They were overjoyed that the extraterrestrial intruders had been annihilated and they high-fived Angus enthusiastically. Angus had saved the day! From that day on, his classmates all called him the “Orange Archer”. The Orange Archer—a hero who used both archery and maths as his weapons!



The Orange Archer is an amazing story about a brave red-haired boy who uses maths as a weapon!

Illustrations by Ilan (using the app 'Sketches School')

ABOUT THE AUTHOR/ILLUSTRATOR

Ilan Shaikh is an enthusiastic writer who enjoys cricket, squash, Indian food and Formula 1. He is 9 years old and attends The Hall School in London, UK and lives with his parents, brother and sister. He thinks angles are fun and hopes you know more about them now!