



ABOVE: A general view of the seventh Rotary Technology Tournament at the National Railway Museum in York  
Pictures: David Harrison



ABOVE: Tom Norrington and Danny Hunter from Lady Lumley's School, Pickering  
BELOW: Shannon Mortimer, Emily Thompson, Max Colley and Matthew Elliott from Huntington School



**O**N a work desk at the far end of the National Railway Museum's Station Hall, four schoolboys are clustered around a small wooden contraption. It looks a bit like a miniature slide, except that this is designed to carry rolling coins, not people.

In common with the 170-odd youngsters gathered in the hall, George Lund, Matthew McGurk, Jacob Cosquer and Sam Oliver have been set the task of designing a 'coin sorter': a gizmo to sort and count coins by their size and weight.

The basic design the Woldgate School pupils have come up with is simple enough: a slope for the coins to roll down, with holes to fit different sized coins. The idea is that the smaller coins fall through first, and the larger ones roll on until they reach a hole big enough for them to fall through.

It isn't quite that straightforward, however, as the Woldgate team discovers.

"It's all about the angle," says 13-year-old Sam. Jacob, 12, elaborates. "If the angle is too steep, the coins go past." He demonstrates, tipping the 'slide' so that a 1p coin rolls down, leaping straight over its own hole and carrying on to the next one.

At a nearby table, a team of slightly older teenagers from Joseph Rowntree School are having the same problem.

Because they are older, their sorter has to be able to deal with more sizes of coin. They have opted for a flat-bottomed slide, down which the coins slide rather than roll. But they, too, are having trouble with the angle.

"We have to try to get it just right," says Olly Inman, his brow furrowed with concentration. "If it's too steep, the coins miss their hole. If it's not steep enough, they won't go down..."

Welcome to the seventh annual Technology Tournament, organised by York's three rotary clubs. A total of 43 teams have entered from 13 schools in York and the surrounding area. Each school was given a list of tools and materials its teams should bring - drills, saws and glue. But the teams didn't know until they arrived this morning what their 'challenge' would be.

"They each had a sealed envelope that they weren't allowed to open until 9.30am," says Mike Fieldsend, chairman of the Rotary Clubs of York and organiser of this year's tournament.

There are three age groups - foundation, intermediate and senior. Each level has been set essentially the same task, but at a different level of complexity.

"You have been collecting money for charity," say the instructions for the intermediate-level teams. "At the end of the day the money needs to be sorted into same value groups and counted, ready to be paid into the bank."

"Your task is to design and build a device that will sort different coins into their same value groups and display the total value of each group..."

The tournament ties in with National Science And Engineering Week, says Mike; and, as well as being fun, it is designed to test the youngster's problem-solving and design skills. Each team has four hours to brainstorm ideas, draw up plans, decide on the best solution: and then build their sorter.

The intermediate team from St Peter's School - which later goes on to win the silver medal in its category - seems to have got to grips with the problem.

Their sorter is a coin roll with a banked side, against which coins lean as they roll down. Holes are cut into



ABOVE: Pictured from the left are Adam Freshwater, Will Huffer, Patrick Hayes and Jack Coultard from St Olave's School

# Pupils on a roll as they solve counting problem



LEFT: James Wainwright and Sam Rippon from Archbishop Holgate's School



▲ Oliver Headlam-Morley, Helen Williams, Hannah Gee and Josh Frost from St Peter's School

the side of the bank to fit different-sized coins. Fifteen-year-old James Bell demonstrates the effectiveness of their design with a series of coins; each of which roll steadily down the slope before vanishing into their respective

holes and being gathered neatly into small containers beneath. "We had a portfolio of about three ideas, and we incorporated the best bits from each one," explains Ivan Cheng, 16. Now that's problem-solving.

• The Technology Tournament took place at the National Railway Museum on Tuesday. The winners of each category were:  
Foundation level: Millthorpe School  
Intermediate level: Bootham School  
Senior level: St Peter's School.