Vocabulary

objective	the aim or intention of each challenge, a target or goal
output	the information produced by a device

The Parts

ramp	direct balls in one direction (either to the left or to the right)
crossover	balls come in one side and exit on the opposite side
bit	a switch, it stores information by pointing left or right
interceptor	stops the balls from running
gear	(and gear bits) flip each other

Knowledge Organiser

Year 5

Turing Tumble

TURING TUMBLE™

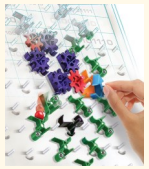
BUILD MARBLE-POWERED COMPUTERS

Learning at home

How Turing Tumble is a Computer - Bing video

The life of Alan Turing - for kids! - National Geographic

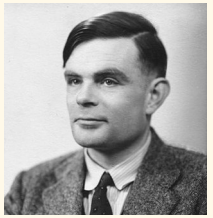
Key Facts



Turing Tumble (named after computer science pioneer Alan Turing) is a revolutionary device where you can build mechanical computers powered by marbles to solve logic puzzles.

Computers are full of ingenious logic and creativity but most of us don't understand how they work. With **Turing Tumble**, you can see for yourself: the logic isn't hidden inside a computer chip, it's right there in front of you.

Who is Alan Turing?



Born in 1912, Alan Turing is best known for creating machines that helped crack the Enigma code (a device used by Germans to send hidden messages during WW2), and laying the foundations for modern computers and artificial intelligence.

Now, to honour this remarkable man, who helped speed up the end of the war and whose work led to the technology we all use today, Alan is shown on the new £50 note.

Questions to deepen your learning...

Character	Critical Thinking	Creativity	Communication	Citizenship	Collaboration
What characteristics do you think Alan Turing needed to create his machines?	How can being an effective problem solver help you in your learning? How do you think Turing Tumble can develop your problem solving skills?	How can solving logic problems, like Turing Tumble, help develop your creativity?	*'Computers are critical for communication.'* Do you agree or disagree with this statement? Why?	If you could design a computer to change the world, what would it do? How would it work?	*'Problem solving in a team is always better than working alone.'* Do you agree? Why?

Teacher Assessment

Learning Objective	Working Towards	At Expected	Above Expected
Can I make accurate predictions about the outcome of a puzzle?			
Can I use logical reasoning to explain my solution to a puzzle?			
Can I solve a puzzle by decomposing it into smaller parts?			
Can I use a range of Turing Tumble parts to solve puzzles?			

Self Assessment

What went well...	Even better if...