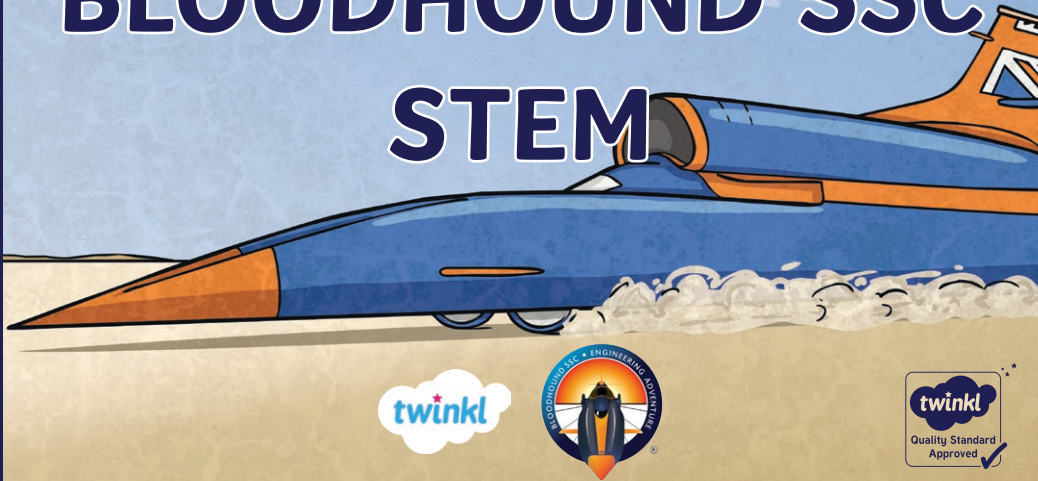
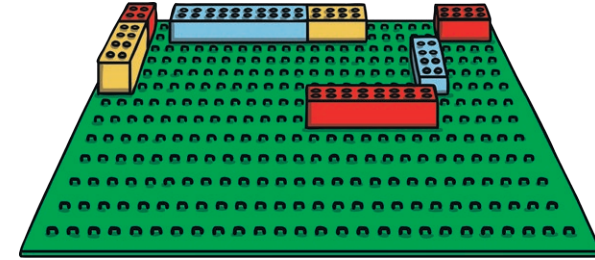


# BLOODHOUND SSC STEM



## BLOODHOUND SSC STEM

Using bricks and a board, can you make a track so that a marble will travel from the top of the board to the bottom in a time of exactly 3.6 seconds?



HINT: Think about how steep your board is if you need to slow the ball down.

## BLOODHOUND SSC STEM

The people who have designed and built BLOODHOUND SSC are called engineers.

Can you design and make a car that will travel independently down a ramp?

With your classmates, see whose car travels the fastest?

Whose car can travel the farthest?

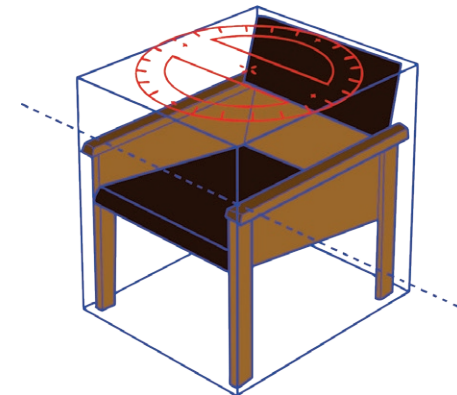
What if the ramp had sand paper on it like a desert?

How could you make your track bumpy like the runway at Newquay?

## BLOODHOUND SSC STEM

The designs for BLOODHOUND SSC were created using 3D modelling software.

Use a design program to create your own 3D model.



### BLOODHOUND SSC STEM

Andy Green, the BLOODHOUND SSC driver, has a lot of wires and switches in the car so that he can control what the car is doing and can communicate with the team.

Can you make a circuit that Andy could use to buzz the team?

What about a circuit that can turn the motor on and off?

Can you combine both functions in one circuit?



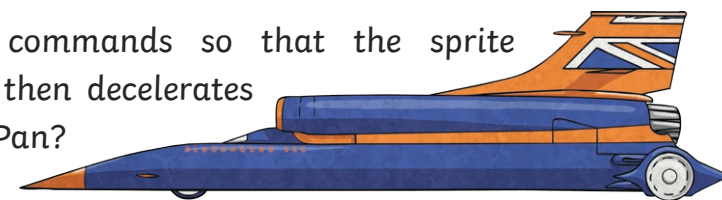
### BLOODHOUND SSC STEM

Use coding software to create a sprite of BLOODHOUND SSC and a backdrop of The Hakskeen Pan, showing the refuelling station and rocket swap station.

Program your sprite to travel the 12 miles, visit the refuelling station, travel onto the rocket swap station and then turn the vehicle around to travel the 12 miles back.

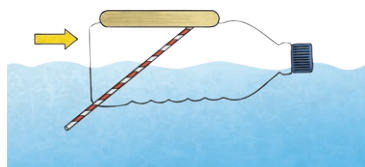
Stop the vehicle at the start/stop line.

Can you add commands so that the sprite accelerates and then decelerates as it crosses the Pan?



### BLOODHOUND SSC STEM

The rocket on BLOODHOUND SSC uses a chemical reaction to create thrust. Build a chemical-powered boat and race it across a tub of water.



You will need: safety goggles, a plastic bottle, a cork, a drinking straw, two lolly sticks, bicarbonate of soda and vinegar.

Make a hole in the bottle to poke the straw through. Attach the cork and lolly sticks in a triangle to the top of the bottle.

Pour the vinegar into the bottle and add the bicarbonate of soda. Put the top on the bottle. Cover the end of the straw and shake the bottle. Place your boat into water and watch it go!

### BLOODHOUND SSC STEM

The parts of BLOODHOUND SSC are held together in a variety of different ways.

Whatever way is chosen has to be strong enough to survive the forces the car experiences during supersonic travel.

Use different ways of fastening two sheets of paper together. Test the strength of each join using a hanging mass.

