



# MARBLE RUN

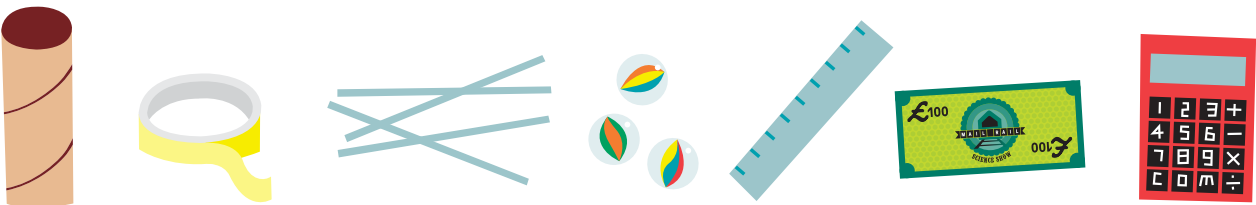


## STUDENT CHALLENGE CARD

**NEWSFLASH!** The Post Office is building an underground railway called Mail Rail. Help is needed to build tunnels to move the mail (marbles) from the Mount Pleasant Sorting Office (the starting point) to Paddington station (the end point).

### Your challenge

Work as a team of Mail Rail engineers to build the cheapest and fastest tunnel you can to move the mail (marbles) from the Mount Pleasant Sorting Office (the starting point) to Paddington station (the end point). Take care to build the tunnel around the underground obstacles.



**Prepare** Discuss the best way to build the tunnels. Remember you need to build supports for the tunnels.

Decide who will record the cost of your building materials.

Gather your building materials.

Build your tunnel.

Remember to build supports for the tunnel.

Think about how to make a strong structure.

Remember to build around the underground obstacles.

Record the cost of your building materials.

Test your tunnel.

Measure and record the length of time it takes for the marble to travel from start to finish.

Calculate and record the cost per second of the marble running



**Sketch a plan for your tunnel:**



**Cost of building materials:**

.....

**Time taken to travel from start to finish:**

.....

**Cost per second of the marble running:**

.....

**The competition** Share your findings with the rest of your class to find out which team has built the fastest, cheapest tunnel.

**Here are some extra challenges:**  
How could you have made the marble travel faster?  
How could you have made the tunnels cheaper?

**Congratulations!** You are now a brilliant Mail Rail Engineer!

Collect your stickers and get ready for your next challenge!