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# Quarterly Problem

- Maths Edition -

## Elevators and Escalators



*In a film documentary about the Eiffel Tower, we learned the following information: The elevators in the Eiffel Tower travel as many kilometres in a year as if they circled the entire globe two and a half times. How could you check if this information is correct? Can you model the mathematical background of the information?*

### Explore elevators and escalators in your town!

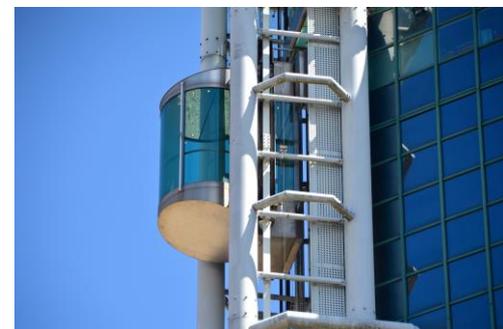
Can you find the escalator in your town, which is the longest or the fastest or the slowest or the shortest? Is there a special elevator in your city? Take a picture of an elevator in your town and try to find out how fast it is and how often it is used.

Search the Internet for information on escalator speed limits. Are there prescribed limits for the speed at which the escalator moves? If so, why is it necessary to respect these limits? Can you find information about the fastest elevators in the world on the Internet? Note the data about fastest elevators and compare their parameters.

Now try to estimate: How long does the elevator in your town or the one in the Eiffel tower or the fastest in the world travel and how does this compare to circling the globe?

### Brainstorm-Box

How could you measure the speed at which an elevator or escalator moves?



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### Whose method is the most correct?

Present your research in a concise, understandable manner. Indicate what sources and assumptions you used for your estimates?

#### Extra question:

What do you think about a special type of elevator named “paternoster”? Watch the short movie and describe your observations and feelings about this technical speciality.  
<https://www.youtube.com/watch?v=YgJBD1wf-YQ>