

## IO2: Functions (Mathematics) – University of Zagreb, Faculty of Science

### Aims of the module: preparing future teachers in teaching modelling and solving problems with functions

1. Acquiring the concept of a function and dealing with different representations of functions [conversion between words, tables, graphs and formulas]
2. Building a repertoire of elementary functions and recognizing their similarities and differences [linear, quadratic, exponential etc.]
3. Functions in real world – observing dependencies and modelling with functions [interpolation, braking distance, area etc.]

Why do students need functions?



Consider a car braking in such a way that the speed decreases by 10 km/h every 0.4 seconds. You are asked to investigate how the braking distance relates to speed just before braking

Observing functions in every-day life and solving problems in different contexts

Using different representations and making conversions meaningful to students

$$y = \frac{1}{2}x + \frac{1}{2}$$

x	y
-1	0
1	1
3	2
5	3

$\{(-1,0), (1,1), (3,2), (5,3)\}$

$$A(x) = x(d - 2x)$$

Find the maximum possible area of a rectangular area, one of whose sides is the wall and the other three are made of fence 240 m long.

How could teachers teach functions?

Braking the illusion: „all functions are linear“ - teaching similarities and differences of functions

### CONTACT US

We would love to hear your thoughts on Key Competence Development in STEM Education!  
Did we spark your interest in collaboration on mathematics?  
For further information, you can contact us anytime:



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