Didactical Document
Theme-Based Trail about Rational Numbers (Grades 5-6)

Trail Code: **485152**

Title	**Grade**	**Main concepts**	**Students learn**	**Data to collect**	**Objects**	**MCM References**
Part-whole *The zebra crossing*	5	-Fraction as part-whole - Equivalent fractions	- Use fractions to indicate the relationship between a given number of parts and the total number of parts into which a whole is divided. - Simplify fractions.	- Number of elements in a set - Number of elements that meet a requirement	Pedestrian crossing	0725507
Part-whole *Chairs in the hall*	5	-Fraction as part-whole and mixed representation - Sum of integers and fractions	- Use fractions to indicate the relationship between a given number of parts and the total number of parts into which a whole is divided. - Use mixed numerals.	- Number of elements in a set - Number of elements that meet a requirement	Chairs	1725524
Ratio *Golden rectangle*	5	-Fraction as a ratio -Golden ratio	- Use fractions to indicate the relationship between two quantities. - Identify the golden ratio.	- Measurement of a segment - Dimensions of rectangles	Posters	5825509
Part-Whole *Pedestrian crossing signal*	5	-Fraction as part-whole - Percentage - Connections with the Area of the square -Area of the triangle	- Solve problems with multiple steps using rational numbers with different representations.	-Measurement of a segment -Square length -Length of the base of the triangle -Length of the height of the triangle	Traffic sign	5725511

Operator *Parking spaces*	5	- Fraction as operator - Ratio - Proportion	- Solve problems with multiple steps using rational numbers with different representations and different meanings.	- Number of elements in a set - Number of elements that meet a requirement	Parking spaces	2625515
Part-whole Operator *What do I see in the wall*	5	-Fraction as part-whole -Fraction as operator - Fraction, Mixed and Decimal representations - Operations with fractions	- Solve problems with various steps using rational numbers with different representations and different meanings.	- Number of elements in a set - Number of elements that meet a requirement	Tiles	0125526
Part-whole *Green panel*	6	-Fraction as part-whole -Percentage -Connections with reflection symmetry; rotational symmetry	- Use fractions to indicate the relationship between a given number of parts and the total number of parts into which a whole is divided. - Use symmetries.	- Number of elements in a set - Number of elements that has refection symmetry - Number of elements with rotational symmetry	Letters in a phrase	1425508
Scale *Costa Nova's house*	6	- Fraction as Ratio - Proportion	- Identify a scale as a ratio between the dimensions of a figure and the respective real dimensions. - Use a proportion between two ratios.	- Measurement of a line segment -length	Picture of a building	5825525
Scale *Model of the football field*	6	- Fraction as Ratio - Proportion	- Identify a scale as a ratio between the dimensions of a figure and the respective real dimensions. - Use a proportion between two ratios.	- Measurement of a line segment	Football field	3725517

Percentage *Good breakfast*	6	- Fraction as Ratio - Proportion	- Solve problems with multiple steps using rational numbers with different representations and different meanings. -Using percentage.	- Number of elements in a set - Prices of elements in a set	Bar	2925520

Note:

The teacher should propose a trail with 7-8 tasks containing diversified concepts (fraction as part-whole, measure, operator; fraction and decimal representation; continuous and discrete contexts). It is also important to present tasks with different cognitive levels (low; high) to motivate/challenge students.