Grades 3-4 (A) 5-8 (S)

Duration: 10-20 min

Tools: one 9 pcs or 16 pcs Set / group

Group work

Keywords: Addition, Multiplication, Distributive property

302 - Secret Number

1 □ 3

MATHS / NUMBERS

Erasmus+

TEACHER

Logifaces

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DESCRIPTION

1. Students form pairs within groups of 4. Each pair takes a Logifaces piece, and thinks of a secret number.

LEVELS 1-2:   The secret number is a natural number or an integer up to 10.

LEVEL 3:   The secret number can be any real number. See 'Prior knowledge' and 'Recommendations' for the description of Levels.

2. Each pair takes a Logifaces piece. The teacher says: "Check the three heights of your Logifaces piece, multiply your secret number with each height, and add the three results." (e.g. if your secret number is 7, and the heights are 1, 2 and 2, then calculate $7 \times 1 + 7 \times 2 + 7 \times 2 = 35$)

3. Each pair gives their Logifaces piece and their final result (e.g. 35) to the other pair in their group.

4. Each pair guesses the secret number of the other pair.

5. Steps 1-4 can be repeated 1-3 times. Meanwhile, teachers can give hints and input if needed, they can also suggest students to think of more complicated or special secret numbers.

6. Whole class discussion: discussing, summarising and formalising strategies, discussing different types of secret numbers (e.g. negative) and special secret numbers (e.g. 0)

SOLUTIONS / EXAMPLES

Distributive property: $(a + b)c = ac + bc$. Students use this implicitly in Levels 1-2, and explicitly in Level 3.

PRIOR KNOWLEDGE

LEVELS 1-2   Addition, Multiplication

LEVEL 3   Distributive property

RECOMMENDATIONS / COMMENTS

The exercise can be used on different levels:

LEVEL 1   practise operations and their properties

LEVEL 2   (a) prepare the distributive property (b) discover the distributive property

LEVEL 3   practise the distributive property