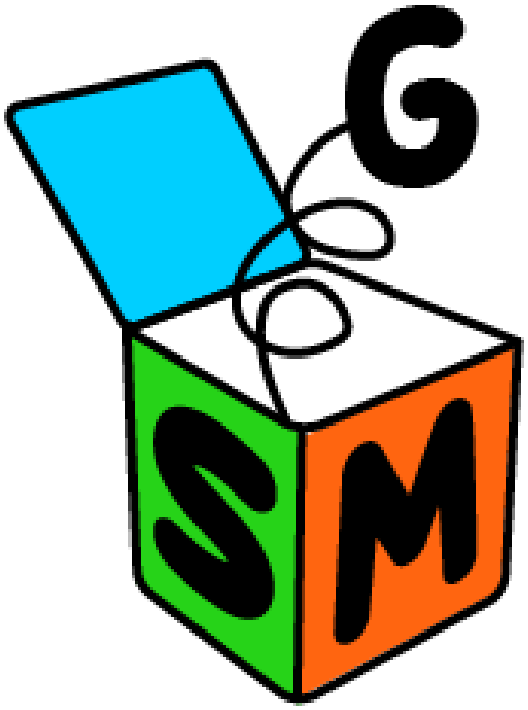
THE GAME

Set me up!



The game Set me up! was created within the project SciMaG - Science&Math educational games from preschool to university. The project is co-founded by the Erasmus+ Program of the European Union, KA220-SCH – Cooperation partnerships in school education (023-1-HR01-KA220-SCH-000165485).

Co-funded by the European Union

How to play the game?

To play successfully, you will need to: classify elements of sets according to given criteria, notice the same and/or different properties of individual elements of sets, notice the criteria by which different elements are classified into the same set, ... Good luck!

Each game has two sub-variants:

- Place me
- Describe me

The Place Me variant is simpler. However, if you solve the Place Me variant for a particular game, you will immediately know the solutions to the Describe Me variant. And vice versa, from the text of the Describe Me variant problem, you can easily determine the solution to the Place Me variant. That is why ... decide in advance which variant you will solve 😊

In the **Place Me variant,** the goal is to sort elements according to given instructions and criteria. While in the **Describe Me** variant, it is necessary to discover the criteria according to which the elements are sorted into sets.

How to check your solution?

You can check the solutions to the Place Me variant by looking at the picture in the Describe Me variant. The solution to the Describe Me variant is easiest to check in the table with solutions at the end of this booklet.

GAMES (topic: geometric shapes)

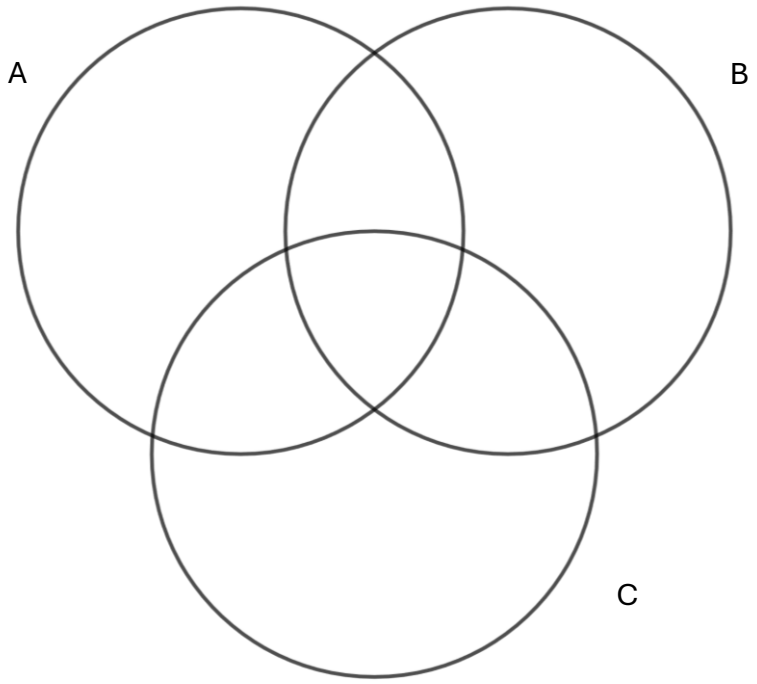
GAME G1 (place me)

Arrange the sets A, B, and C whose union is the set {cube, cuboid, tetrahedron, octahedron, dodecahedron, icosahedron, quadrilateral pyramid, pentagonal prism} so that:

all elements of set A are prisms

all elements of the set B are regular solids

all elements of set C are pyramids



GAME G1 (describe me)

CRITERIA

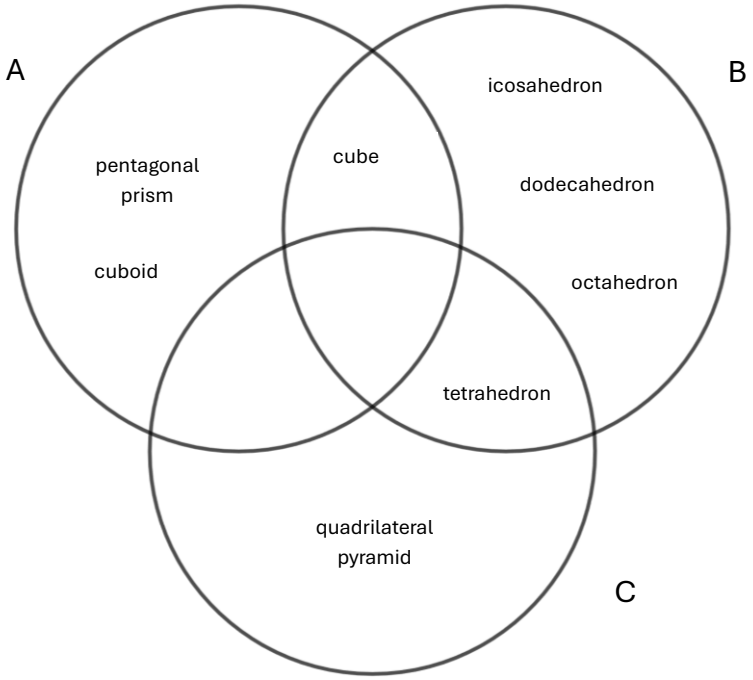
K1: all elements of the set are regular solids

K2: all elements of the set are solids with curved surfaces

K3: all elements of the set are pyramids

K4: all elements of the set are prisms

K5: all elements of the set are regular polygons



Task: By what criterion are the elements classified into sets A, B and C?

Solution:

SET	CRITERION
A	
B	
C	

GAME G2 (place me)

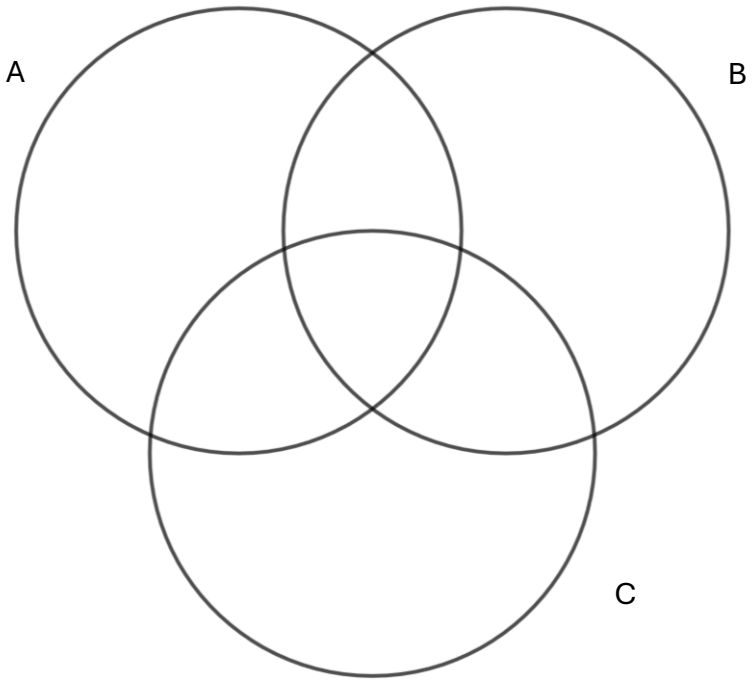
Arrange the sets A, B and C whose union is a subset of the set containing the following forms:

so that:

all elements of set A are quadrilaterals

all elements of the set B are parallelograms

all elements of the set C are regular polygons



GAME G2 (describe me)

CRITERIA

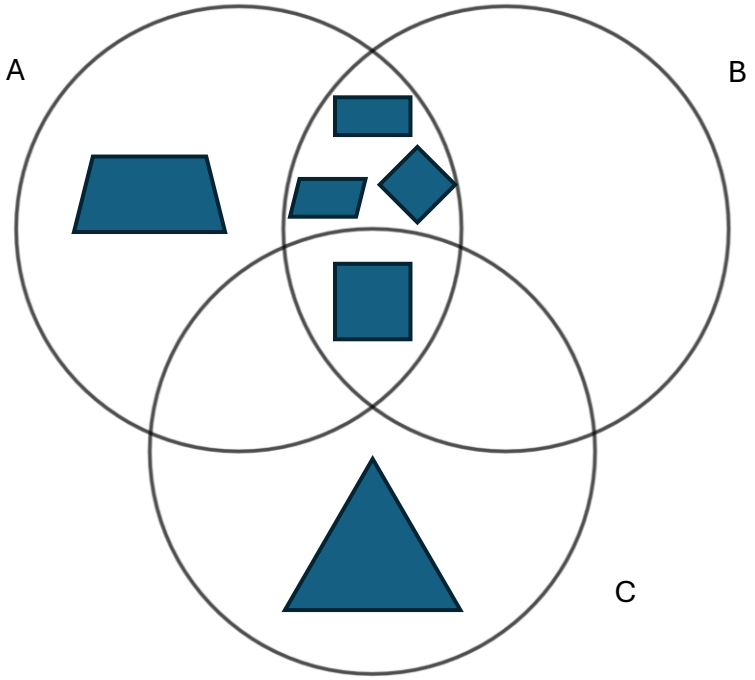
K1: the elements of the set are parallelograms

K2: all elements of the set are triangles

K3: all elements of the set are quadrilaterals

K4: all elements of the set are regular polygons

K5: all elements of the set have at least one right angle



Task: By what criterion are the elements classified into sets A, B and C?

Solution:

SET	CRITERION
A	
B	
C	

GAMES (topic: sets of numbers)

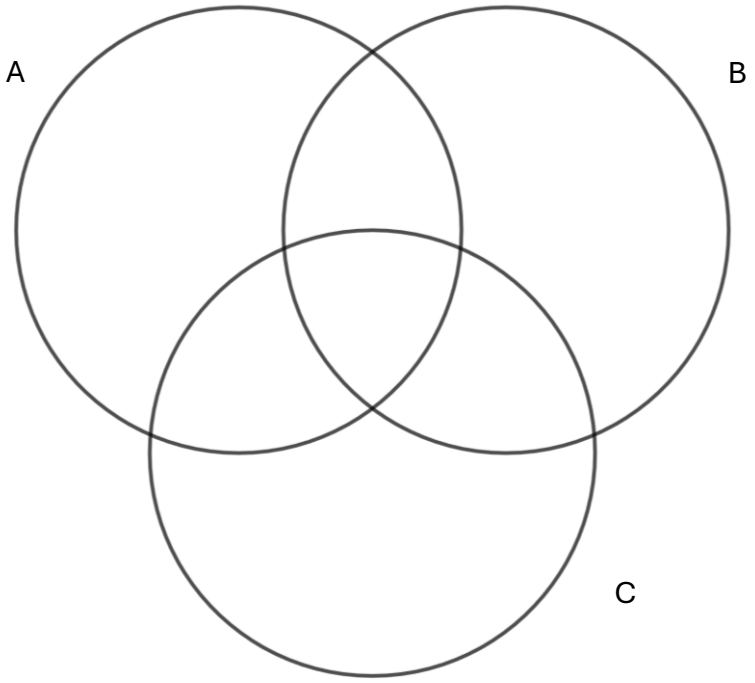
GAME B1 (place me)

Arrange the sets A, B and C, each with 5 elements, and whose union is the set {2,3,6,8,10,12,13,20}, so that:

all elements of the set A are even numbers

all elements of the set B are positive integers greater than or equal to 1

all elements of the set C are positive integers less than or equal to 10



GAME B1 (describe me)

CRITERIA

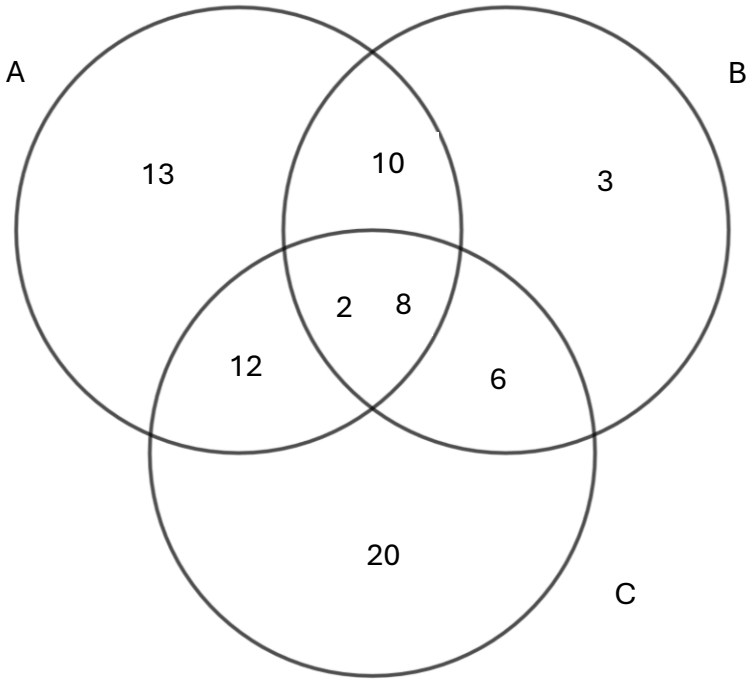
K1: all elements of the set are prime numbers

K2: all elements of the set are even numbers

K3: all elements of the set are odd numbers

K4: all elements of the set are positive integers greater than or equal to 1

K5: all elements of the set are positive integers less than or equal to 10



Task: By what criterion are the elements classified into sets A, B and C?

Solution:

SET	CRITERION
A	
B	
C	

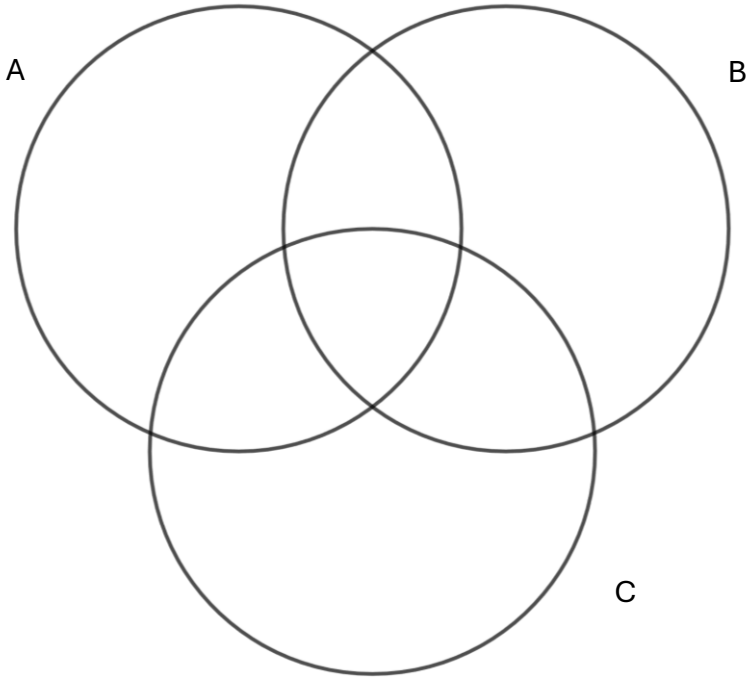
GAME B2 (place me)

Arrange the sets A, B and C, each with 5 elements, and whose union is the set {-5, 0,1,3,4,9,10,13} so that:

all elements of the set A are odd numbers

all elements of the set B are elements of the set ⟨-5,9⟩

all elements of the set C are divisors of the number 420



GAME B2 (describe me)

CRITERIA

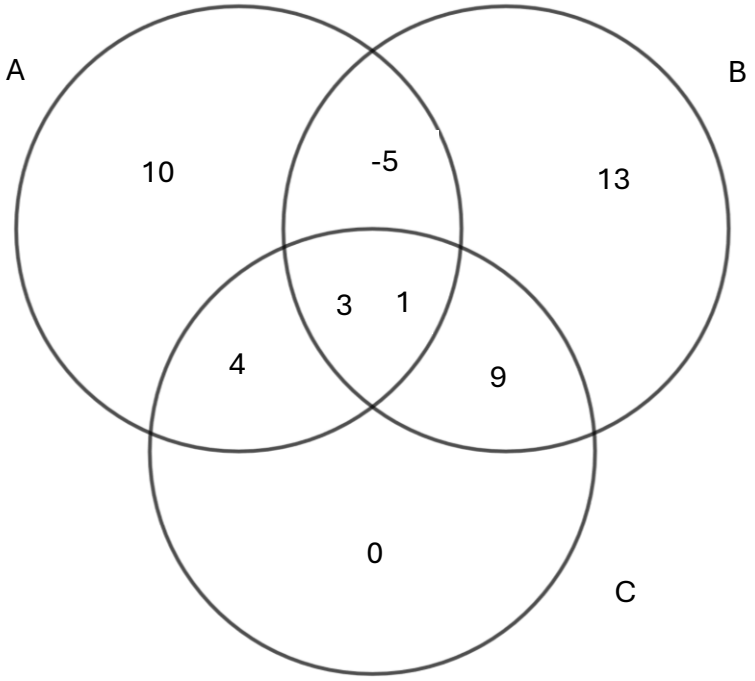
K1: all elements of the set are prime numbers

K2: all elements of the set are even numbers

K3: all elements of the set are odd numbers

K4: all elements of the set are elements of the set ⟨-5,9]

K5: all elements of the set are divisors of the number 420



Task: By what criterion are the elements classified into sets A, B and C?

Solution:

SET	CRITERION
A	
B	
C	

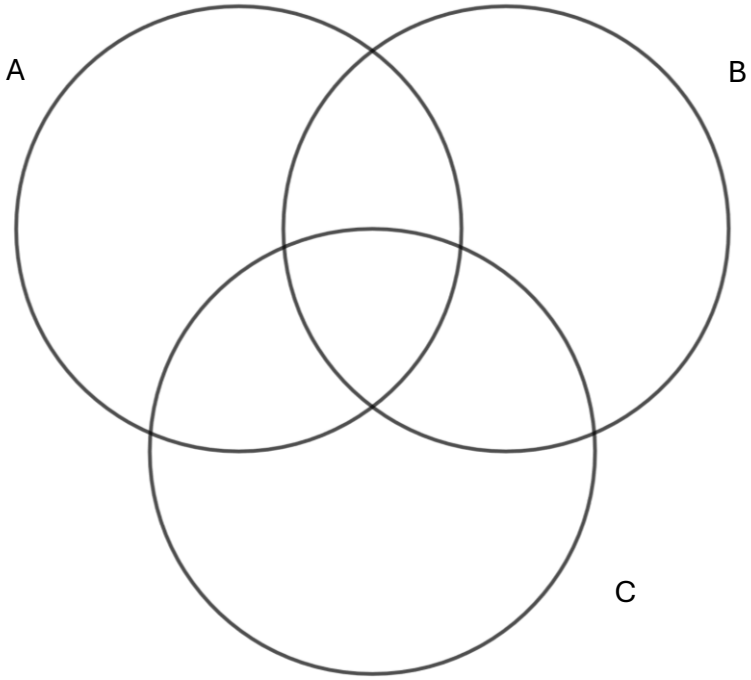
GAME B3 (place me)

Arrange the sets A, B and C, each with 5 elements, whose union is the set {-11, -4, 0, 2, 3, 4, 5, 6, 7, 11} so that:

all elements of the set A are prime numbers

all elements of the set B are even numbers

all elements of the set C are relatively prime with the number 3



GAME B3 (describe me)

CRITERIA

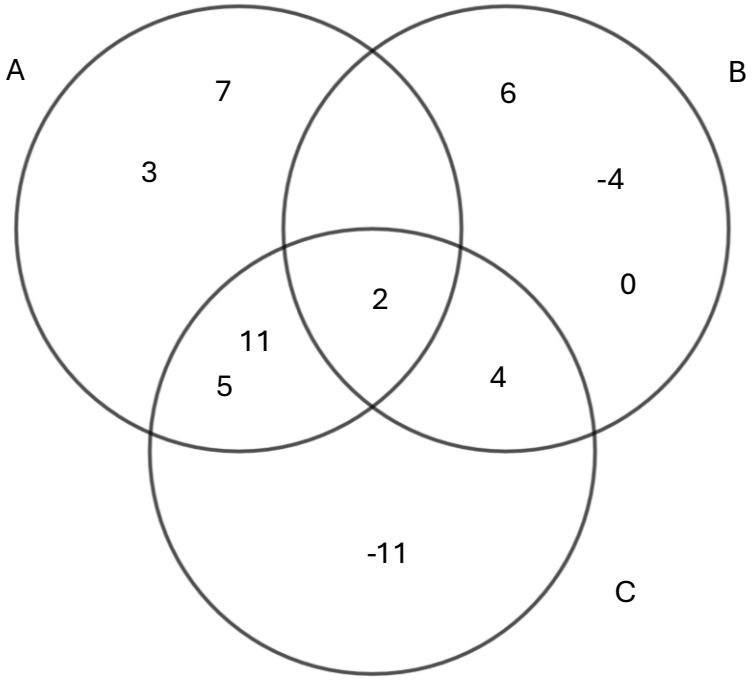
K1: all elements of the set are prime numbers

K2: all elements of the set are even numbers

K3: all elements of the set are odd numbers

K4: no element of the set is a positive number

K5: all elements of the set are relatively prime to the number 3



Task: By what criterion are the elements classified into sets A, B and C?

Solution:

SET	CRITERION
A	
B	
C	

GAMES (topic: interdisciplinary)

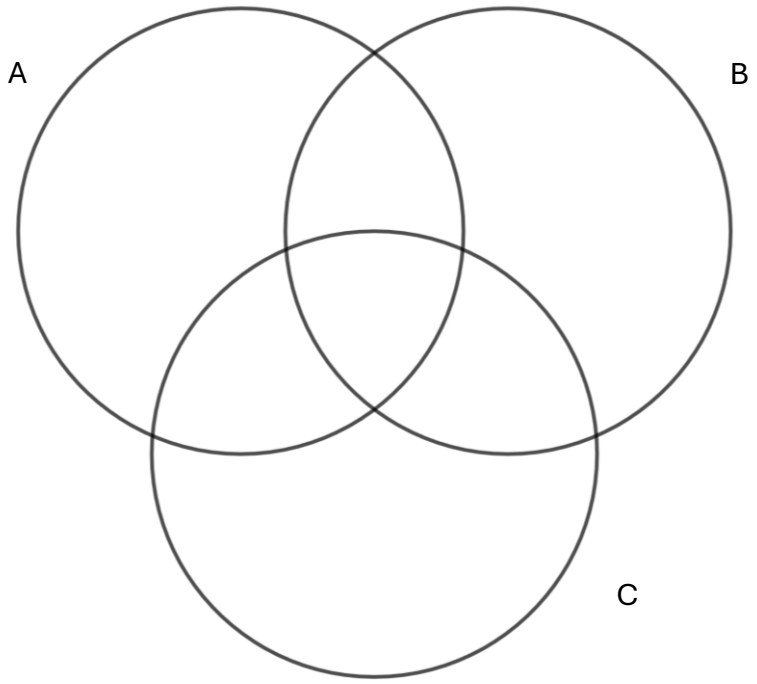
GAME I1 (place me)

Arrange the sets A, B, and C whose union is the set of balls for the following sports: basketball, football, futsal, volleyball, tennis, badminton, table tennis, rugby; such that:

all elements of set A are balls for sports that can be played with the foot

all elements of set B are balls for sports played over a net

all elements of set C are balls for team sports that have a maximum of 15 players on the field



GAME I1 (describe me)

CRITERIA

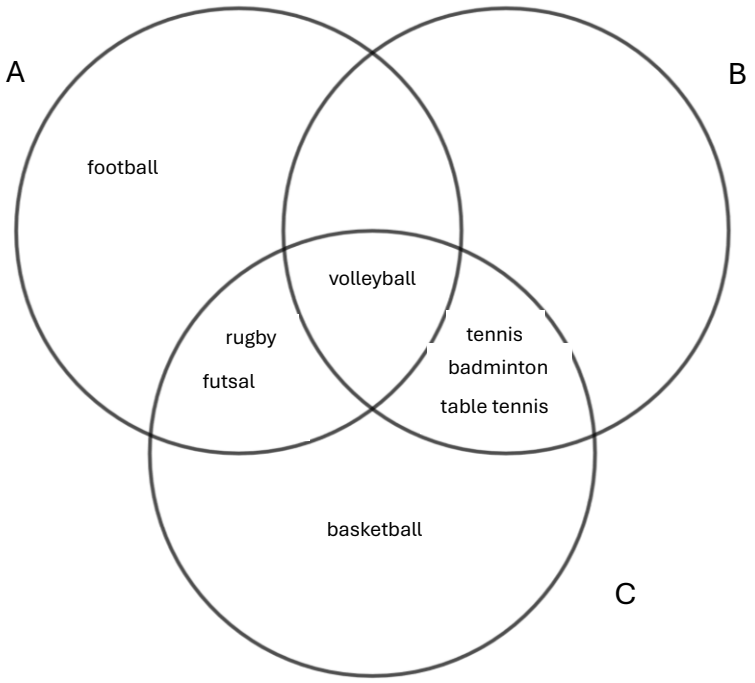
K1: all elements of the set are balls for team sports with a maximum of 15 players on the field

K2: all elements of the set are balls for sports in which playing with foot is allowed

K3: all elements of the set are balls for sports that have a goalkeeper on the team

K4: all elements of the set are balls for sports played over a net

K5: all elements of the set are balls for sports played individually



Task: By what criterion are the elements classified into sets A, B and C?

Solution:

SET	CRITERION
A	
B	
C	

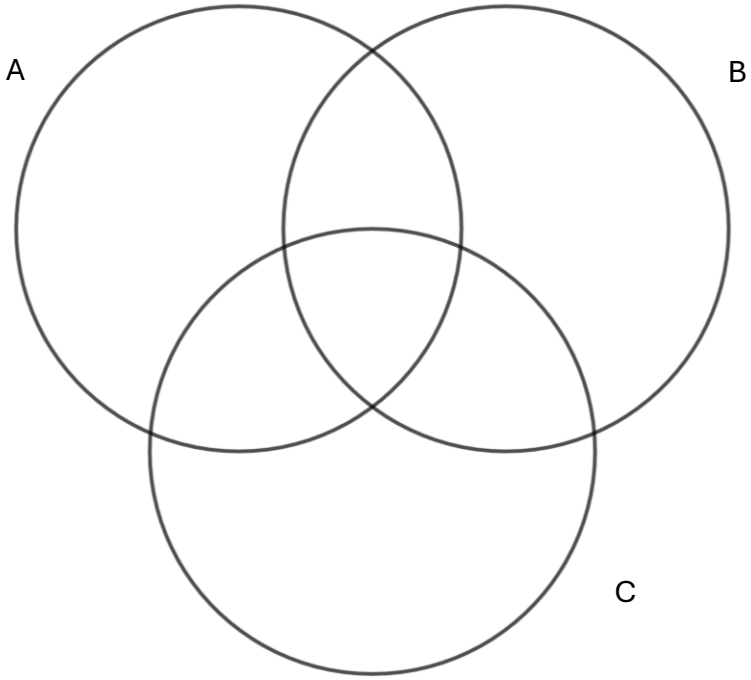
GAME I2 (place me)

Arrange the sets A, B and C, each with 5 elements, and whose union is the set {WATERMINE, pear, TOMATO, potato, apple, ZUCCHINI, plum, LEMON, PUMPKIN, broccoli} so that:

all elements of set A are written in blue

all elements of set B are fruits

all elements of the set C are written in capital letters



GAME I2 (describe me)

CRITERIA

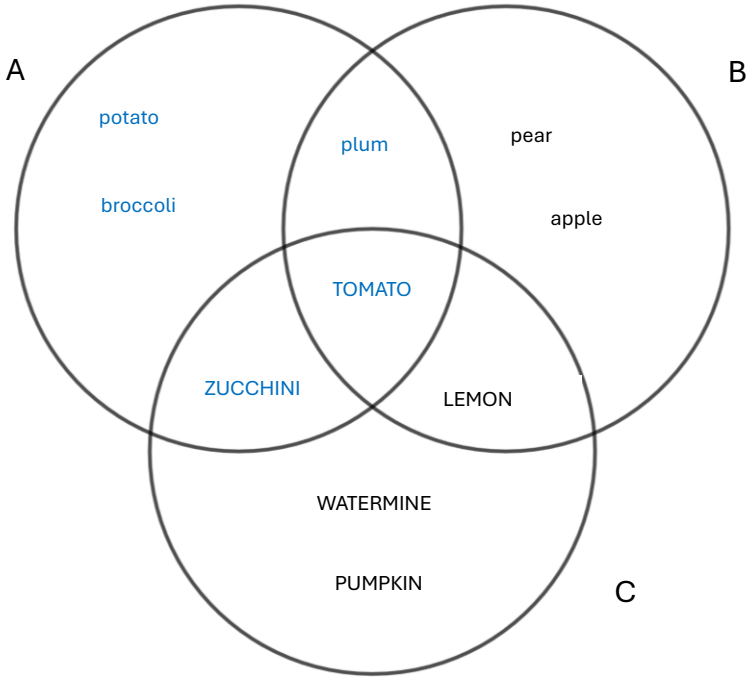
K1: all elements of the set are fruits

K2: all elements of the set are vegetables

K3: all elements of the set are written in block letters

K4: all elements of the set are written in blue

K5: all elements of the set are written in black



Task: By what criterion are the elements classified into sets A, B and C?

Solution:

SET	CRITERION
A	
B	
C	

SOLUTIONS

GAME	SOLUTION	GAMES	SOLUTION	GAMES	SOLUTION
I1	K2, K4, K1	G1	K4, K1, K3	B1	K4, K5, K2
I2	K4, K1, K3	G2	K3, K2, K4	B2	K5, K3, K4
				B3	K1, K2, K5