



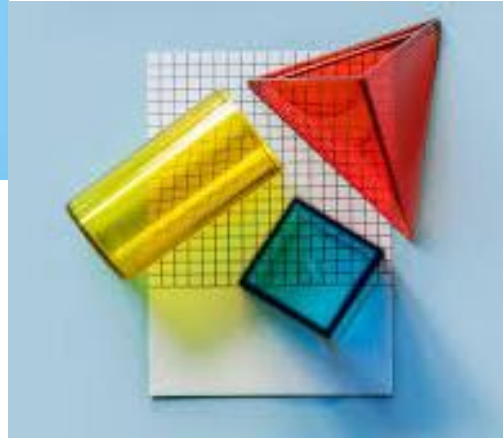
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Erasmus+ Call: 2019 - KA2 -



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2nd  
Primary School  
of Chios



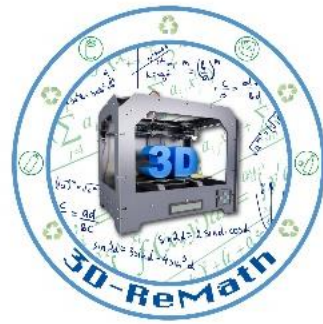
3D printing technology aims students understanding maths and recycling procedure

*02\_2<sup>nd</sup> Curricula of Maths: Sets & Subsets*

Lecture\_5

# Outline

- Getting from sets to combinations
- To remember
- Activities
- Videos



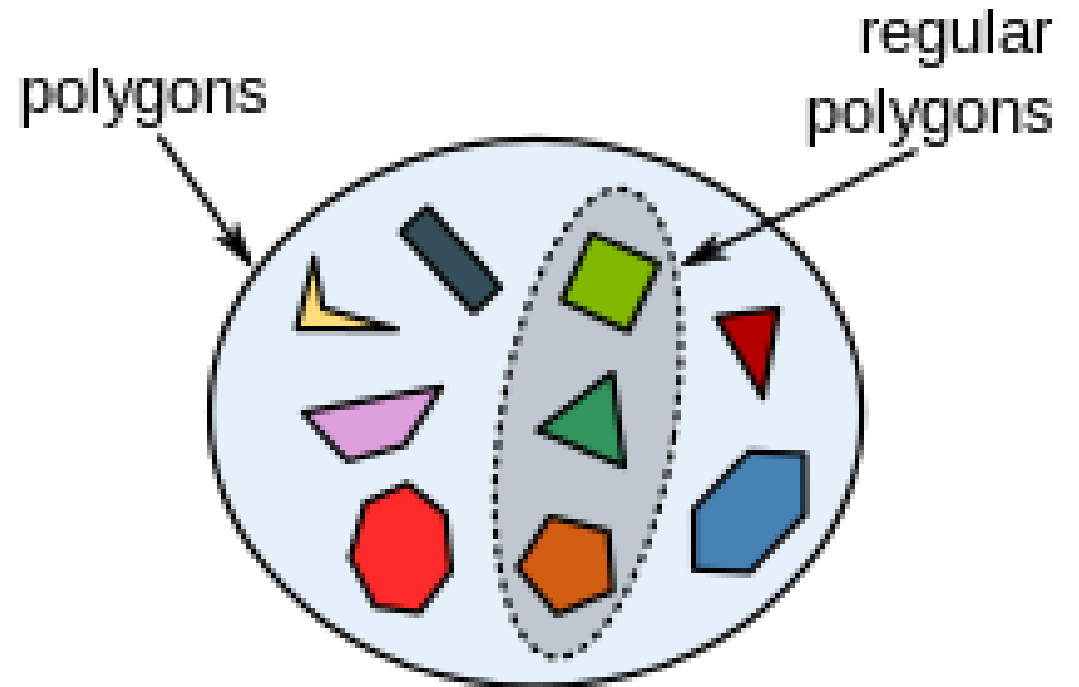
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# To get started

A **subset** of a set is another set that contains only elements from the set, but may not contain all the elements of the set.





## ACTIVITY

Let's say that there are 6 pupils: Alberta, Diogo, Filippos, Aline, Adriano and Lydia. Their teacher decides to divide them into two evenly sized teams. How many ways are there to do this?



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# Remember...

When problems are of large scale, enumeration takes too long and it is necessary to formulate and generalize counting methods.



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# Basic Concepts...



Imagine you have five chairs each one with a different colour in your classroom. How many ways can you arrange these five chairs in a line?

There are 5 options for the first chair in the arrangement. Now, whichever chair you choose to be the first chair in line, there will be 4 remaining chairs to set as the second chair in the arrangement. And whatever chair you choose, there will be 3 remaining numbers for the third chair and so on.

In total, you will have:

- 5 options for the first choice,
- 4 options for the second choice,
- 3 options for the third choice,
- 2 options for the fourth choice,
- 1 option for the fifth choice

So the number of ways to arrange the five differently colored chairs is

$$5 \times 4 \times 3 \times 2 \times 1$$

This is known as counting permutations.



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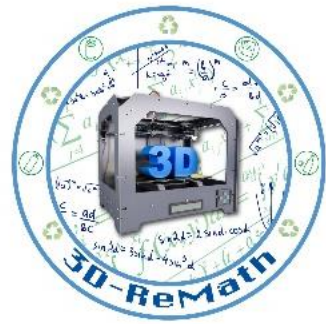


# Videos

From sets to subsets

<https://www.youtube.com/watch?v=9Wvu-R04go>

<https://study.com/academy/lesson/subsets-in-math-definition-examples-quiz.html>



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## ACTIVITY 2

How many different ice cream cones can be made by choosing two scoops from 4 flavours? Flavours are: Banana, Strawberry, Vanilla, Chocolate and each scoop has to be a different flavour



### Students Print

4 different scoops (balls) of different flavor (different color)

- ✓ Banana (yellow)
- ✓ Strawberry (pink)
- ✓ Vanila (white)
- ✓ Chocolate (Brown)

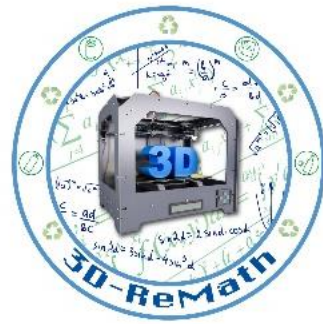


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## ACTIVITY 2\_Key

How many different ice cream cones can be made by choosing two scoops from 4 flavours?  
Flavours are: Banana, Strawberry, Vanilla, Chocolate and each scoop has to be a different flavour



- 1st choice: Banana - Strawberry
- 2nd choice: Banana - Vanilla
- 3rd choice: Banana - Chocolate
- 4th choice: Strawberry - Vanilla
- 5th choice: Strawberry - Chocolate
- 6th choice: Vanilla - Chocolate



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## ACTIVITY 2\_key

How many different ice cream cones can be made by choosing two scoops from six flavours?



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