

TITLE: Augmented Reality Geometry

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Timeframe of activity: 30-45 min

Tags: Cards for geometrical shapes - mathematical rules

Grade Level: K-7

App/Tech Tools: CleverBooks Geometry App, tablets

Additional material: CleverBooks Geometry Workbook

Learning Objectives:

By the end of this activity, the student will be able to:

- Recognize regular and irregular shapes.
- Recognize the types of regular shape.
- Make a comparison between the polygon and solid.
- Recognize polygon types such as (square - rectangle - circle - triangle – hexagon).
- Deduce the number of sides - vertices - angles - in a polygon.
- Recognize the types of solid such as (cube - cuboid - cylinder - spherical – pyramid).
- Deduce the number of sides - vertices - angles - and only a face in each polygon.
- Analyzing and reconstructing stereoscopic shapes.
- Deduce the name of the hologram after and before folding.
- Know the parts of the circle radius - the diameter.
- Deduce how to calculate the circumference of a circle and the area of a circle.
- Know the parts of the triangle, base and height.
- Deduce how to calculate the area and perimeter of a triangle.
- Analyzing and reconstructing shapes and finding the difference between them.
- Performs self-assessment through an electronic test using the application – Geometry.

Suggested questions:

- Which is the difference between three-dimensional and flat shapes?
- To bring the concept closer to the students, by giving an example from the real life ... If someone offers you a meal in a restaurant consisting of a burger, a mug of juice, finger chips ... How would you classify the contents of this meal in terms of three-dimensional and flat shapes?

Lesson Activity:

Divide my class students into three groups, and we elect a leader for each group

- I apply the reverse lesson strategy by sending the link of the scientific material to students before explaining it using Microsoft Teams.

- The next day, I distribute the CleverBooks Geometry resources from the Workbook to the three groups.
- So that the leader of the first group was given the Circle shape.
- The leader of the second group was given the Triangle shape.
- The leader of the second group was given the Hexagon shape.
- In addition, I give each leader a set of cards containing the following information.
- Number of vertices/number of faces / number of characters / number of angles.
- The group leader, in cooperation with a team, fills it out.
- The leader of each group exchanges his energy with the other groups in order to inform the students about the rest of the figures as well as the conclusions of his fellow students.

Work sheet ●

Group 1				
shape	Number of letters	Number of faces	Number of intersection point of letters	Cut out its horizontal plane
Circle				
Cylinder				
Sphere				
Explore other shapes and write your notes				

Group 2				
shape	Number of letters	Number of faces	Number of intersection point of letters	Cut out its horizontal plane
A rectangle				
Cubic				
Cuboid				
Explore other shapes and write your notes				

Group 3

shape	Number of letters	Number of faces	Number of intersection point of letters	Cut out its horizontal plane
Triangle				
Pyramid				
Prism				
Explore other shapes and write your notes				

Questions outline:

- Open the application- CleverBooks Geometry App- from your device and choose the icon shapes.
- Place the mobile camera on the marker with a Geometrical shape.
- Name some of 2D shapes and their properties.
- Name some of the 3D shapes and their properties.
- Find 2D shapes that have the same number of sides.
- Find 3D shapes that have the same number of letters and faces.

Additional Ideas (optional):

A video of the group leader explaining to his colleagues how to use (CleverBooks Geometry).

Resources:

The link of videos:

- <https://youtu.be/utulf3xZx3M>
- <https://youtu.be/6RGXaCpEtk>
- https://youtu.be/9_ITK6saFdU

The student Leader (Ola) a Explain the Clever- Books Geometry

- https://1drv.ms/v/s!At5_v2zU3pSRqz0OprGtFxqhRJly