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KIDS
IN CLOUDS

TEACHING SCENARIO FOR IMPLEMENTATION OF THE INTERDISCIPLINARY PROJECT FOR STUDENTS

Project title:	Golden section
Correlating subjects:	History, Math, ICT
Key terms:	Golden section, renaissance, proportion, golden rectangle, ratio, Fibonacci

Activity title:	Ecce homo. / Behold the man
Activity duration (min):	45 min

Detailed activity description:

Once students have mastered the concepts of humanism and renaissance and understand the historical context in which new directions emerge, they will compare medieval and renaissance art.

Using the content prepared in the Genially digital tool, show students two pictures of the same subject from different periods (pages 1, 2 and 3: students will first list the obvious similarities and differences, and then analyze the works of art in more detail with questions). Ask students what feelings prevail in the pictures.

As an introduction to the listed features of medieval and renaissance art (page 4), discuss with students the features of the Middle Ages and the Renaissance that they had previously adopted (eg feudal system, class society, great influence of the Church on society, importance of religion, knowledge of man and world based on religious beliefs and superstitions, humanism, with the emphasis on mankind as a whole nd individuals, the development of scientific thought, the influence of Greek and Roman art…). Using the example of the first two pictures, explain to students certain terms from the list on page 4 (compare the characteristics of medieval and renaissance art - you can adapt the list to your students and print it in advance, and at this time share it with students).

The following pages (5-9) provide examples of medieval and renaissance art: for each work of art, students will try to determine which period they belong to by arguing their choice. The examples are obvious and evenly distributed, but you can arrange them in advance and differently. If necessary, supplement the student's answers by listing the characteristics of a certain period, which are visible in the picture.

The last examples (pages 10 and 11) show changes in the depiction of the human body (both sculptures depict David). Discuss with students what they see and how these works testify to the development of science, anatomy, and medicine in the context of the Renaissance (Teacher Literature: Recovering the Golden Age, The study of Anatomy).

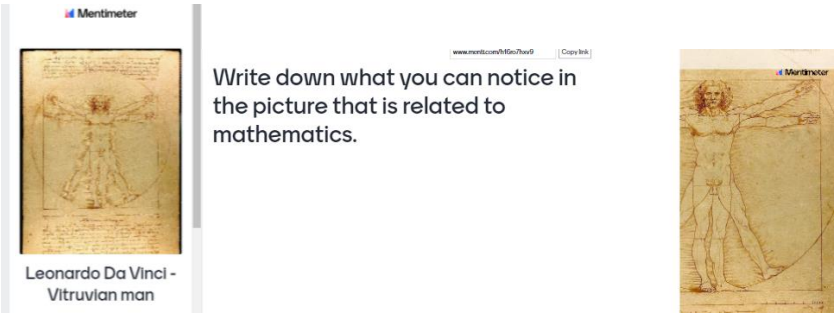
Students will respond in writing to the task on page 12.

Activity adaptation for students with difficulties

Activity adaptation for gifted students and those willing to learn more

Activity title:	Beauty, charts and Math (Math)
Activity duration (min):	45 min
Detailed activity description:	

Show students a sketch of Vitruvius' man by Leonardo Da Vinci and write down the question of what they may notice in the sketch that is related to mathematics. Give students time to think, and to write down each student's idea and question, you can ask a question using the Mentimeter tool.



Divide the students into pairs and instruct them to prepare a meter (ruler) and tables according to the instructions you can find at the worksheet attached to this teaching scenario. The tables contain descriptions of what needs to be measured, how and where to enter. Students will measure the length from fingertip to wrist, then measure arm length and arm length from fingertip to elbow, then length from eyes to mouth and from mouth to tip of chin, etc. After students have completed the table, instruct them to complete and the third column, which indicates the ratio of the two measured values, and discuss the results obtained.

You can then stimulate a discussion in the form of a debate with the topic of beauty is / is not in the eye of the beholder.

Activity adaptation for students with difficulties
Activity adaptation for gifted students and those willing to learn more

Activity title:	The beauty of a rectangle
Activity duration (min):	45 min
Detailed activity description:	

Divide students into groups to explore the concepts of the golden rectangle and the golden spiral and to briefly describe those concepts, accurately draw and describe the geometric construction of the concept. Limit students' research time to 15 minutes and to making a golden rectangle and spiral about 20 minutes. (Links you can share with students to help Golden rectangle, Golden Spiral)
Each group will present their research, and all research can be collected at the end and a joint presentation will be made in Adobe Spark, which will include the best examples from each group.

Activity adaptation for students with difficulties
Activity adaptation for gifted students and those willing to learn more

Activity title:	Is beauty in the eye of the beholder? (ICT)
Activity duration (min):	30 min
Detailed activity description:	
Instruct students to search and select several different logos of well-known companies on the Internet (for example, Apple, Toyota, National Geografic, Google, etc.). Students download the selected logos to a computer and display them using a gold rectangle and a gold spiral in one of the photo processing tools (eg Gimp). Distribute the prepared picture of the golden rectangle without a background (attached) to the students and instruct them to open the pictures in layers, so that they can display a certain logo inside the golden rectangle.	
Activity adaptation for students with difficulties	
Students can choose one of the offered logos from the attachment and work alone or in pairs with other students.	
Activity adaptation for gifted students and those willing to learn more	
Students who do well in the selected program can process multiple logos or assist individual students in the work, if necessary.	

Activity title:	A wonderful sequence of numbers (ICT)
Activity duration (min):	45 min
Detailed activity description:	
Show students one string of numbers and ask them to continue the string (e.g. 1,4,9,16,25 ..,,) Divide the students into groups of 3-4 students and instruct them to come up with their own sequence. After creating the arrays, the groups exchange their arrays with the other groups and try to continue the default array. Encourage students to analyze strings and observe rules. Repeat with students the repeat command in a programming language (eg Python - for loop). Students then independently devise a computer program in (In Python or some other programming language) that will print one of the given strings using the learned repeat and print commands. (eg Printing the first 10 even or odd numbers, printing every 5th number, etc.) Upon completion of their algorithms, students can briefly describe their solution - Are there different algorithms for the same solution i.e. string? If so, what's the difference? Which set requires the most complex algorithm?	

After programming the given arrays, students explore the concept of the Fibonacci sequence on the Internet. What is the Fibonacci sequence? What is the rule for continuing the Fibonacci sequence?

Encourage students to think about how to print a Fibonacci sequence using a programming language.

Which members of the string are needed to determine the next number in the string? How to mathematically determine the next number in a sequence? What commands are needed? Can applying lists help create a string within an algorithm?

If necessary, create a flowchart with students for an algorithm that prints a Fibonacci sequence.

Students then write an algorithm that prints so many members of the Fibonacci sequence for a given number (eg 6 - 0,1,1,2,3,5). Remind students to use learned branching commands, loops, and lists when programming.

To repeat the content with the students, you can play a quiz on the topic of the Golden ratio and the Fibonacci sequence.

Activity adaptation for students with difficulties

Students create a simple algorithm that requires the entry of several numbers (eg the beginning of a Fibonacci sequence), adds them to the list and then prints all the numbers entered.

Activity adaptation for gifted students and those willing to learn more

Students upgrade their algorithm so that the program prints the required string element. For example, they determine which number is 7th in a row and which number is the previous and next in the sequence.

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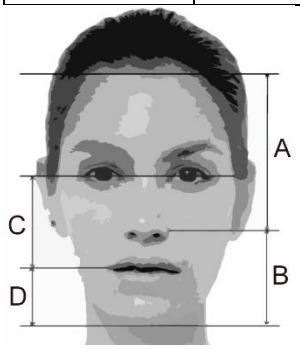
Worksheet – Proportionality in the human body

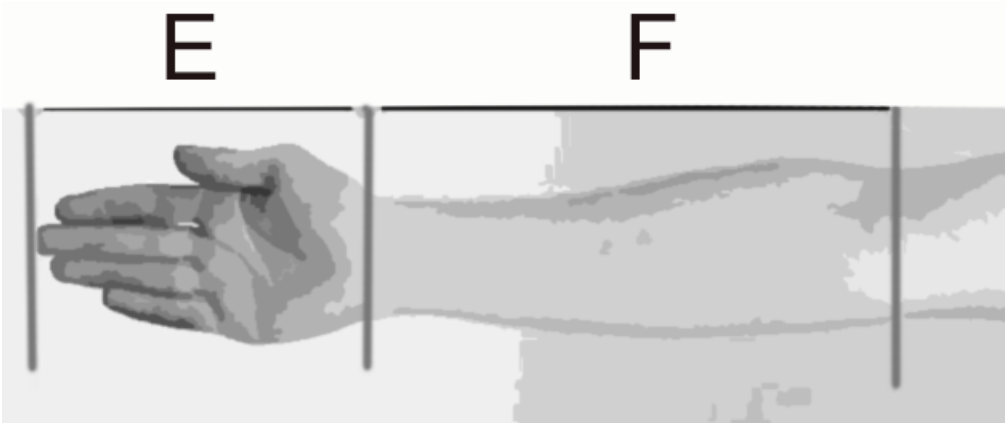
Task:

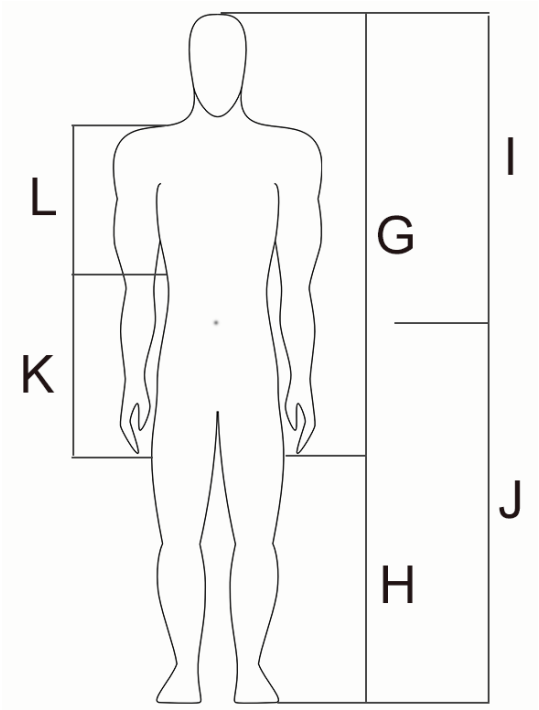
Measure the lengths shown by the labels for each member of the group and include them in the corresponding places in the table. Measure only straight lines and be as accurate as possible.

A	B	A/B
C	**D**	**C/D**



E	F	E/F
(E+F)	**F**	**(E+F)/F**





G	H	G/H
J	I	J/I
K	L	K/L

Investigate some other parts of the human body that could give a similar ratio and draw and measure them yourself on the other side of the slip.

Is beauty in the eye of the beholder?