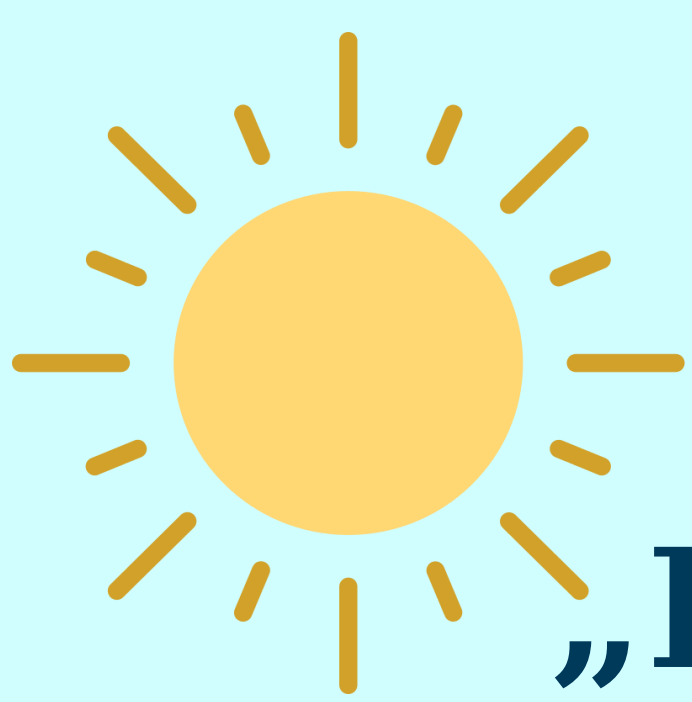


MATHEMATICS OF THE UNIVERSE

INFORMATION BOOK





SUN - CIRCLE

Rebeca Ienciu

**„Bambi” Kindergarten
Cluj-Napoca, Romania**

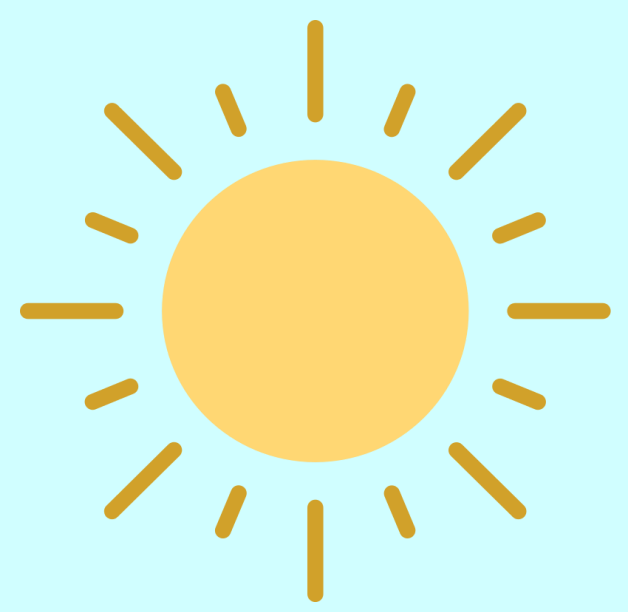


The bees learned about the Sun and the planets that revolve around it and make up the solar system. The sun is a star, an extremely hot and luminous ball of gas. It gives light and heat to the planets in the solar system. The children made a sun from colored paper and rays from crepe paper.

They had the patience to build a sun out of dominoes. With a stick they drew a sun in the corn. They really liked the movement game: jumping from circle to circle.



SUN - CIRCLE



Rebeca Ienciu

„Bambi” Kindergarten
Cluj-Napoca, Romania



MATHEMATICS OF THE UNIVERSE



Kids love fun math so they counted the dots on the sun's rays. They enjoyed the light box activity where they had to arrange the planets in the correct order according to their proximity to the sun. Shadows and lights fascinated everyone.

SUN – CIRCLE

DERYA DOĞAN

SUN – CIRCLE

DERYA DOĞAN

STARS – STAR

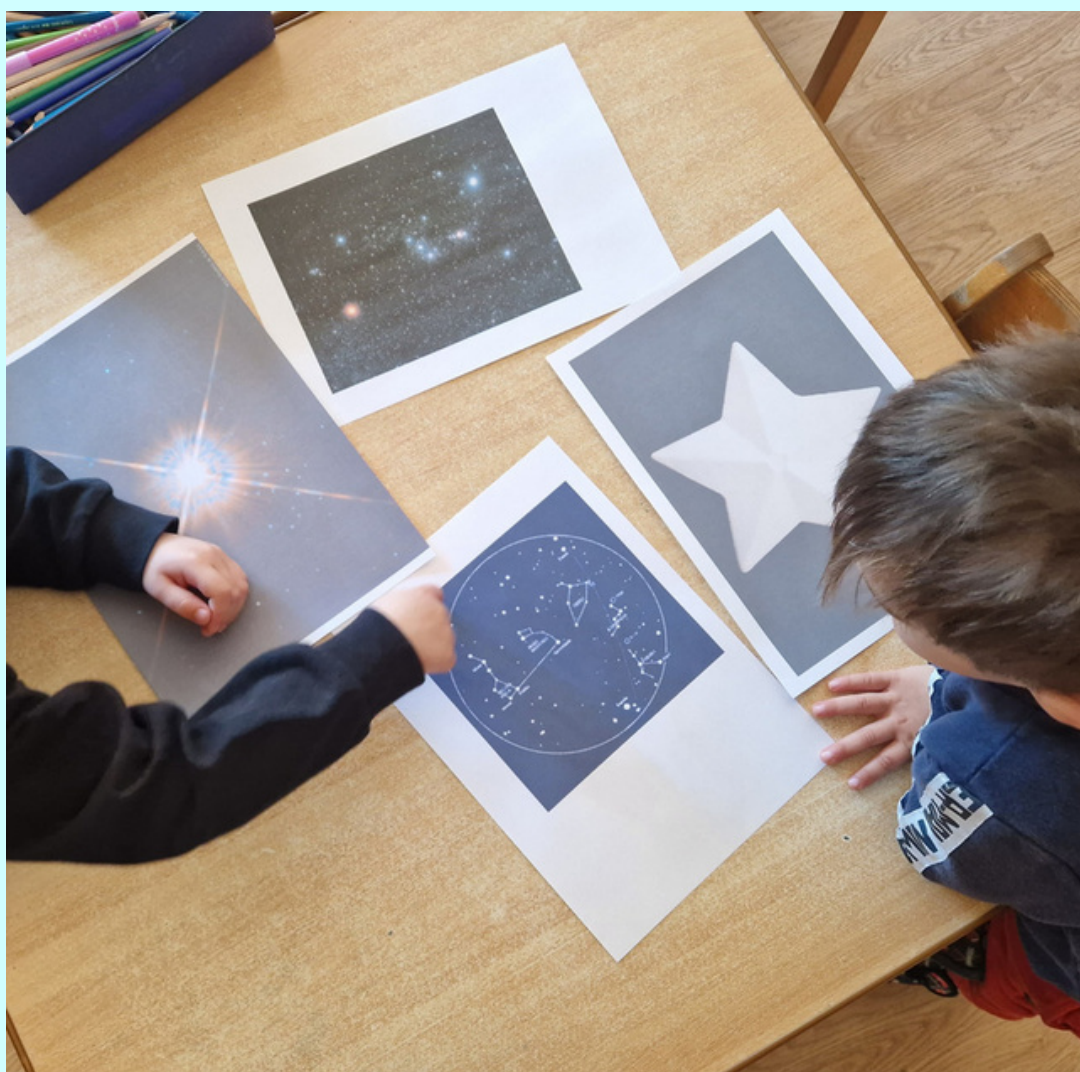
GABRIELA BLOVSKÁ

STARS – STAR

GABRIELA BLOVSKÁ

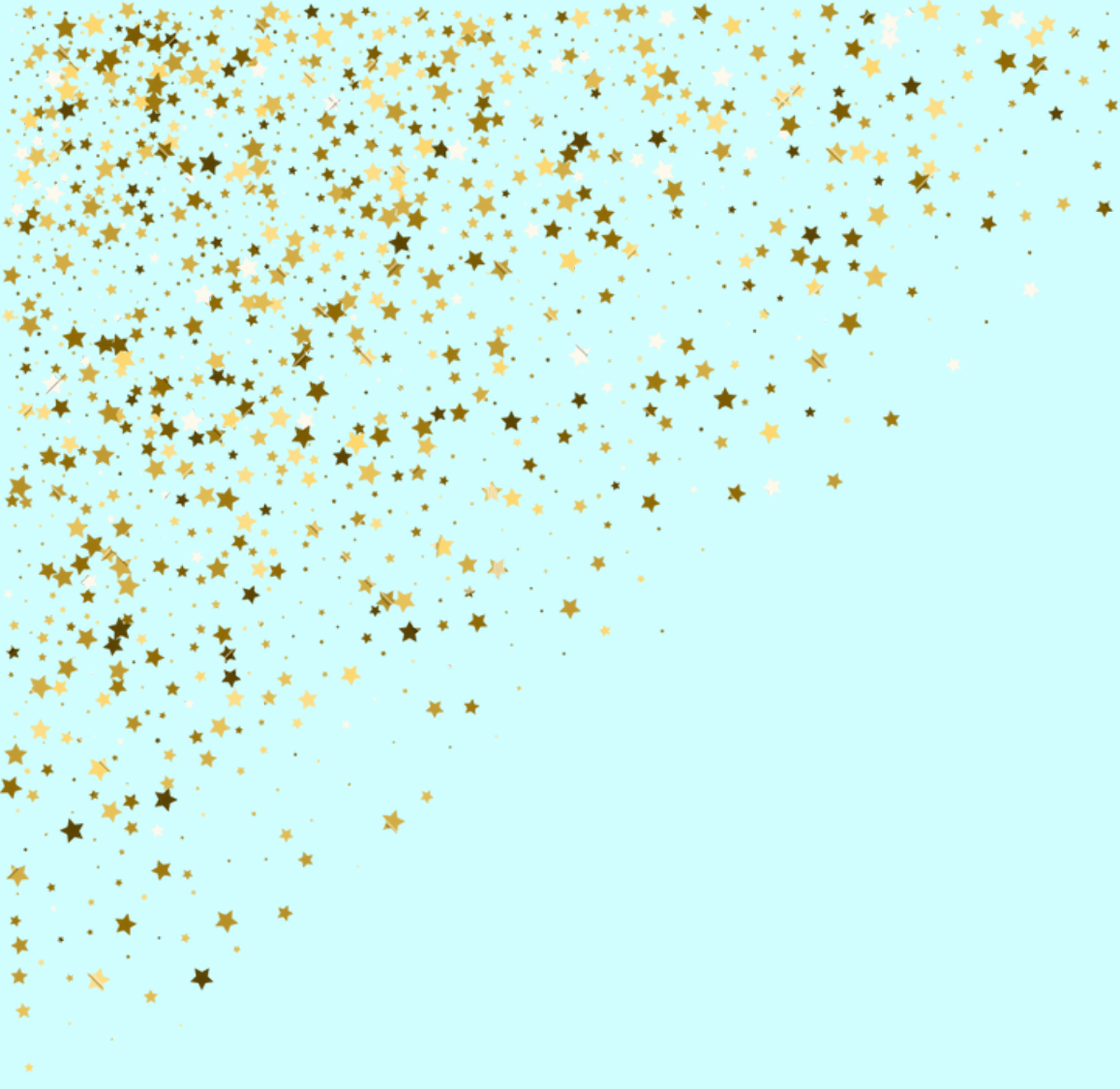
STARS – STAR

TAJANA PAVKOVIĆ
KINDERGARTEN VARAŽDIN, CROATIA

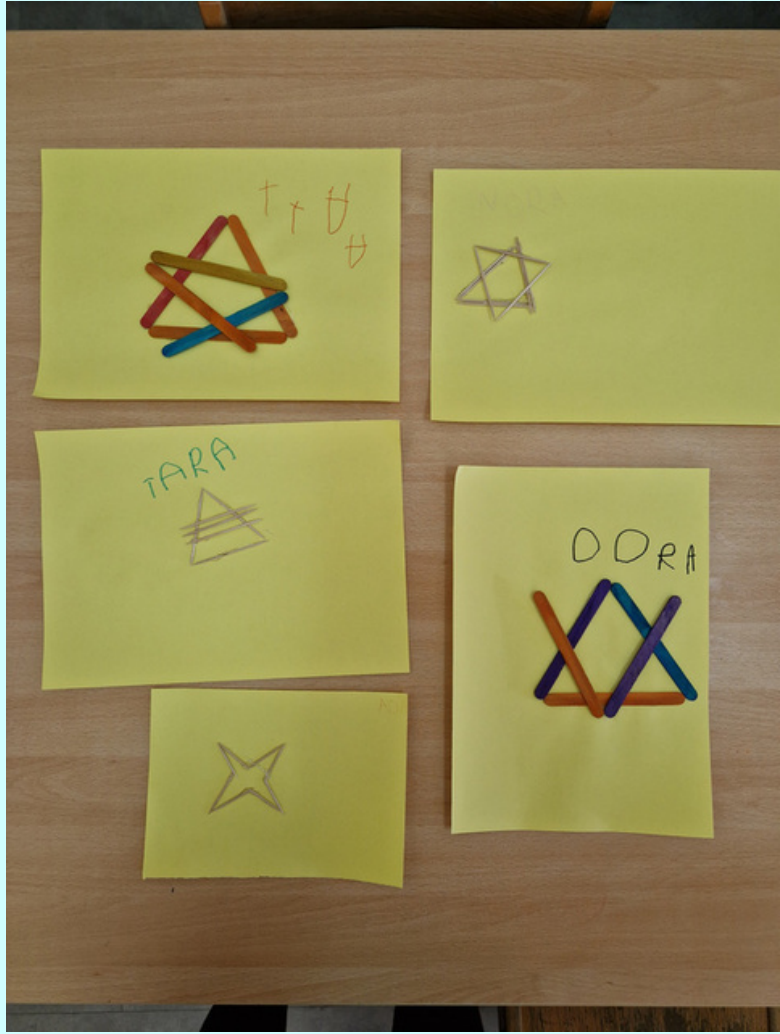
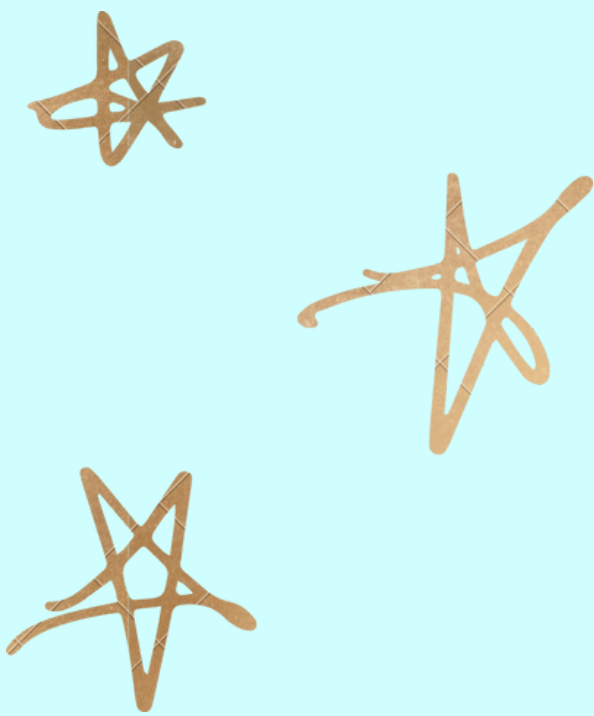


**A STAR IS A
CELESTIAL BODY
THAT CAN BE SEEN
IN THE SKY AS A
BRIGHT POINT. OUR
BRIGHTEST STAR IS
THE SUN AND IT IS
BELIEVED THAT
THERE ARE 70
TRILLION STARS IN
OUR UNIVERSE.**

**THE STUDY OF THE CONSTELLATIONS
PARTICULARLY INTERESTED THE CHILDREN.
THEY NOTICE THE DIFFERENCE IN THEIR SIZES,
COLORS AND SHINE. CHILDREN GAIN NEW
KNOWLEDGE AND SUPPLEMENT EXISTING
KNOWLEDGE. THEY OBSERVE A SET OF STARS
THAT GIVE CERTAIN GEOMETRIC SHAPES, AND
PROMPTED BY THEIR CURIOSITY, THE CHILDREN
WANT TO CREATE THEIR OWN CONSTELLATIONS.**



STARS – STAR





SATURN - RING

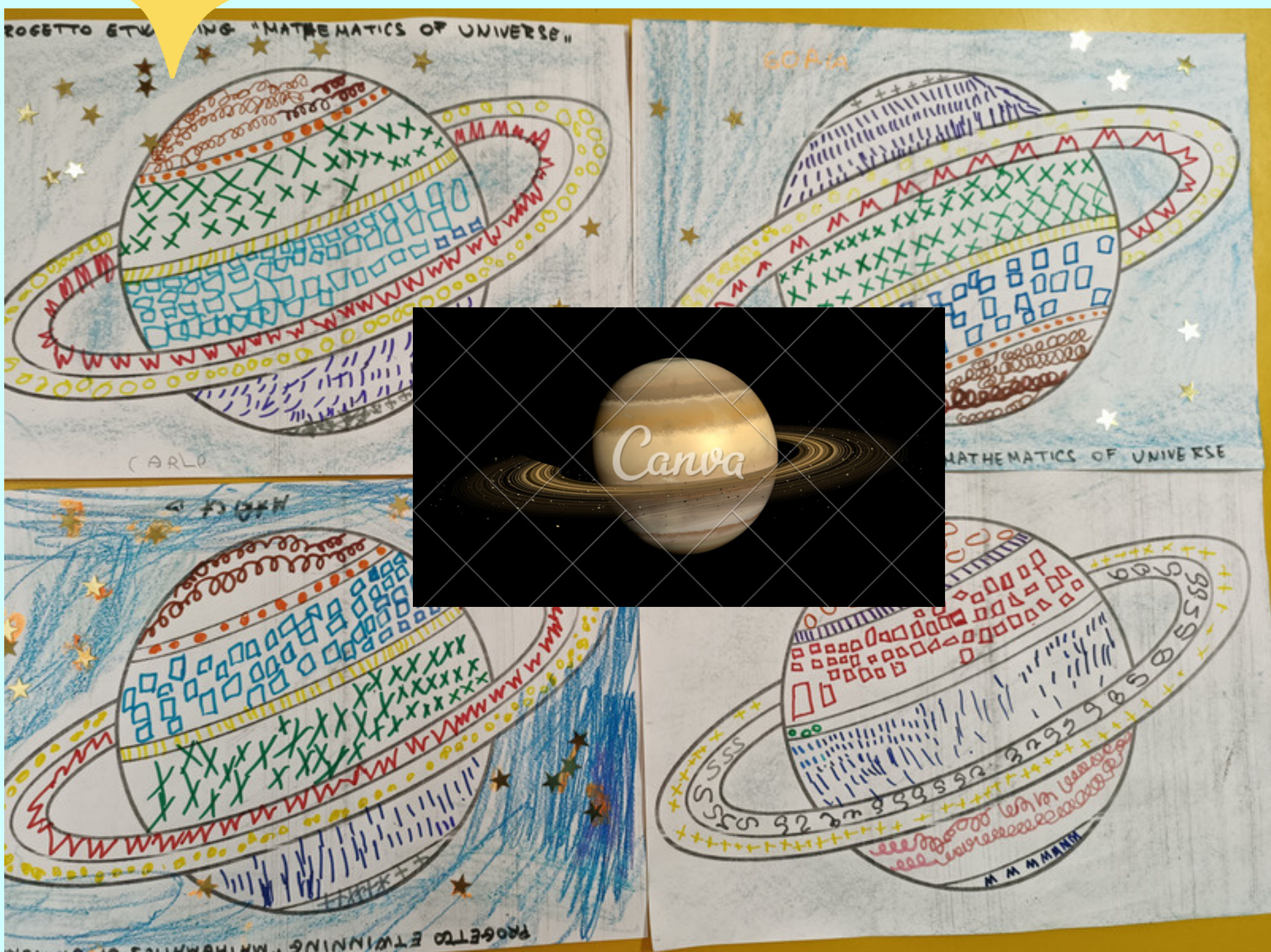
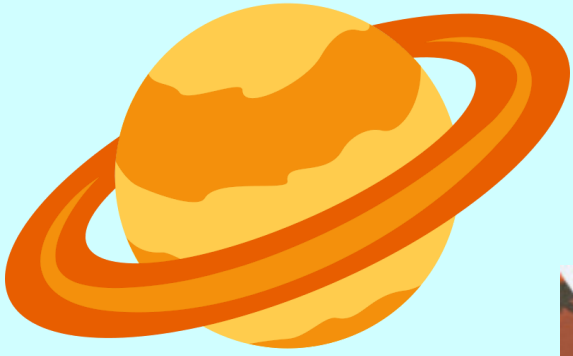


MARIA TERESA PERROTTA,
IC CORRADINI POMILIO,
AVEZZANO, ITALY



SATURN – RING

MARIA TERESA PERROTTA



SATURN – RING

SATURN – RING

SATURN – RING

SATURN – RING

SUN - *circle*

SUN - *circle*

SUN - *circle*

SUN - *circle*

EARTH – GLOBE

**Ayten Balazairova -Azerbaijan,
school 101**



**We discussed with my students
that the space figure of the
earth
is a sphere.**

EARTH - GLOBE

EARTH - GLOBE

EARTH - GLOBE

EARTH - GLOBE

EARTH - GLOBE

EARTH - GLOBE

EARTH - GLOBE

EARTH - GLOBE

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EARTH - GLOBE

EARTH - GLOBE

EARTH - GLOBE

EARTH - GLOBE

EARTH - GLOBE

EARTH - GLOBE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

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RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

HATİCE BAYRAKCI

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

HATİCE BAYRAKCI

RAINBOW- HALF CIRCLE

AYTEN BALAZAİROVA -AZERBAİJAN,
SCHOOL 101



**WE CREATED BY CUTTING CIRCLES,
SYMMETRICALLY DIVIDING THEM IN THE
MIDDLE AND COUNTING THE COLORS OF THE
RAINBOW.**

RAINBOW- HALF CIRCLE

RAINBOW- HALF CIRCLE

SOAP BUBBLE - SPHERE

SOAP BUBBLE - SPHERE

SOAP BUBBLE - SPHERE

SOAP BUBBLE - SPHERE

SOAP BUBBLE - SPHERE

SOAP BUBBLE - SPHERE

SOAP BUBBLE - SPHERE

SOAP BUBBLE - SPHERE

MOUNTAINS – HEIGHT

ÜMMÜHAN ERYİĞİT SERTKAYA

MOUNTAINS – HEIGHT

ÜMMÜHAN ERYİĞİT SERTKAYA

ÜMMÜHAN ERYİĞİT SERTKAYA

ÜMMÜHAN ERYİĞİT SERTKAYA

ÜMMÜHAN ERYİĞİT SERTKAYA

ÜMMÜHAN ERYİĞİT SERTKAYA

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ÜMMÜHAN ERYİĞİT SERTKAYA

ÜMMÜHAN ERYİĞİT SERTKAYA

MOUNTAINS – HEIGHT

MOUNTAINS ARE HIGH-LYING PARTS OF LAND. THEY ARE FORMED AS A RESULT OF OROGENIC MOVEMENTS OR AS A RESULT OF VOLCANIC PROCESSES. THE MOUNTAINS INCLUDE CONVEX AND CONCAVE FORMS. THE HIGHEST MOUNTAIN RANGE ON EARTH IS THE HIMALAYAS, AND THE HIGHEST PEAK IS MOUNT EVEREST.

**JUSTYNA ZAMOJSKA,
WARSAW POLAND**

MOUNTAINS – HEIGHT



**JUSTYNA ZAMOJSKA,
WARSAW POLAND**

BEE - HEXAGONAL



**DOBRILA RADEKA
KINDERGARTEN ŽUTO PAČE
ZADAR, CROATIA**

BEE – HEXAGONAL

AYTEN BALAZAİROVA –

AZERBAİJAN, SCHOOL 101



**Mathematics
of the
Universe**



**WE CREATED A BEEHIVE FROM FABRIC
BY CUTTING HEXAGONAL SHAPES. WE
CONNECTED THEM WITH THE LENGTHS
OF THE SIDES.**

BEE - HEXAGONAL

BEE - HEXAGONAL

BEE - HEXAGONAL

BEE - HEXAGONAL

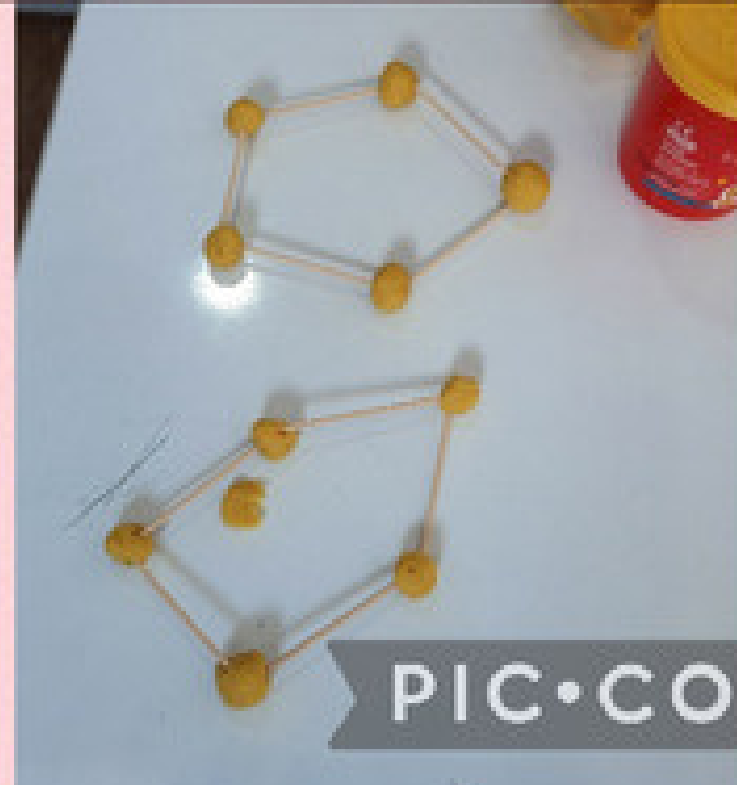
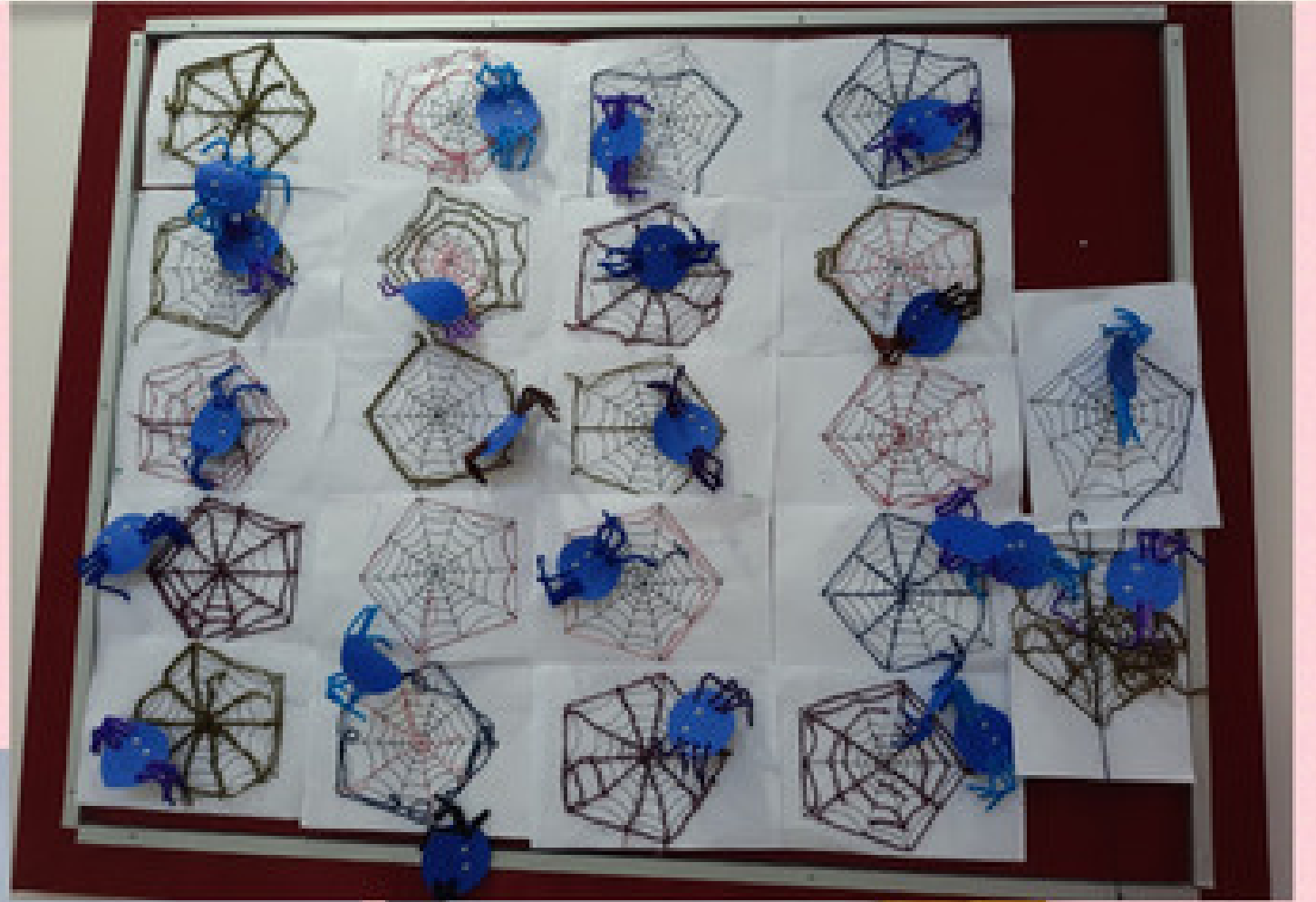
SPIDER WEB – PENTAGON

KADRIYE YILDIZ
ZÜBEYDE HANIM KINDERGARTEN



ŞAŞIRTICI ÖRÜMCEK AĞLARI HİKAYESİ OKUNDU.
BEŞGEN ŞEKLİNDE ÖRÜMCEK AĞI VE ÖRÜMCEK SANAT ETKİNLİĞİ YAPTIK.
OYUN HAMURU VE KÜRDAN İLE BEŞGEN ŞEKİLLERİ YAPTIK.

THE AMAZING SPIDER WEBS STORY READ.
WE MADE A SPIDER WEB AND SPIDER ART ACTIVITY IN THE SHAPE OF A PENTAGON.
WE MADE PENTAGON SHAPES WITH PLAY DOUGH AND TOOTHPICKS



PIC•COLLAGE

KADRIYE YILDIZ

SPIDER WEB – PENTAGON



KADRIYE YILDIZ

SPIDER WEB – PENTAGON

SPIDER WEB – PENTAGON

SPIDER WEB – PENTAGON

SPIDER WEB – PENTAGON

TREE- CURVED

CANSU GÜR OKUR

TREE- CURVED

CANSU GÜR OKUR

TREE- CURVED

TREE- CURVED

TREE- CURVED

TREE- CURVED

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TREE- CURVED

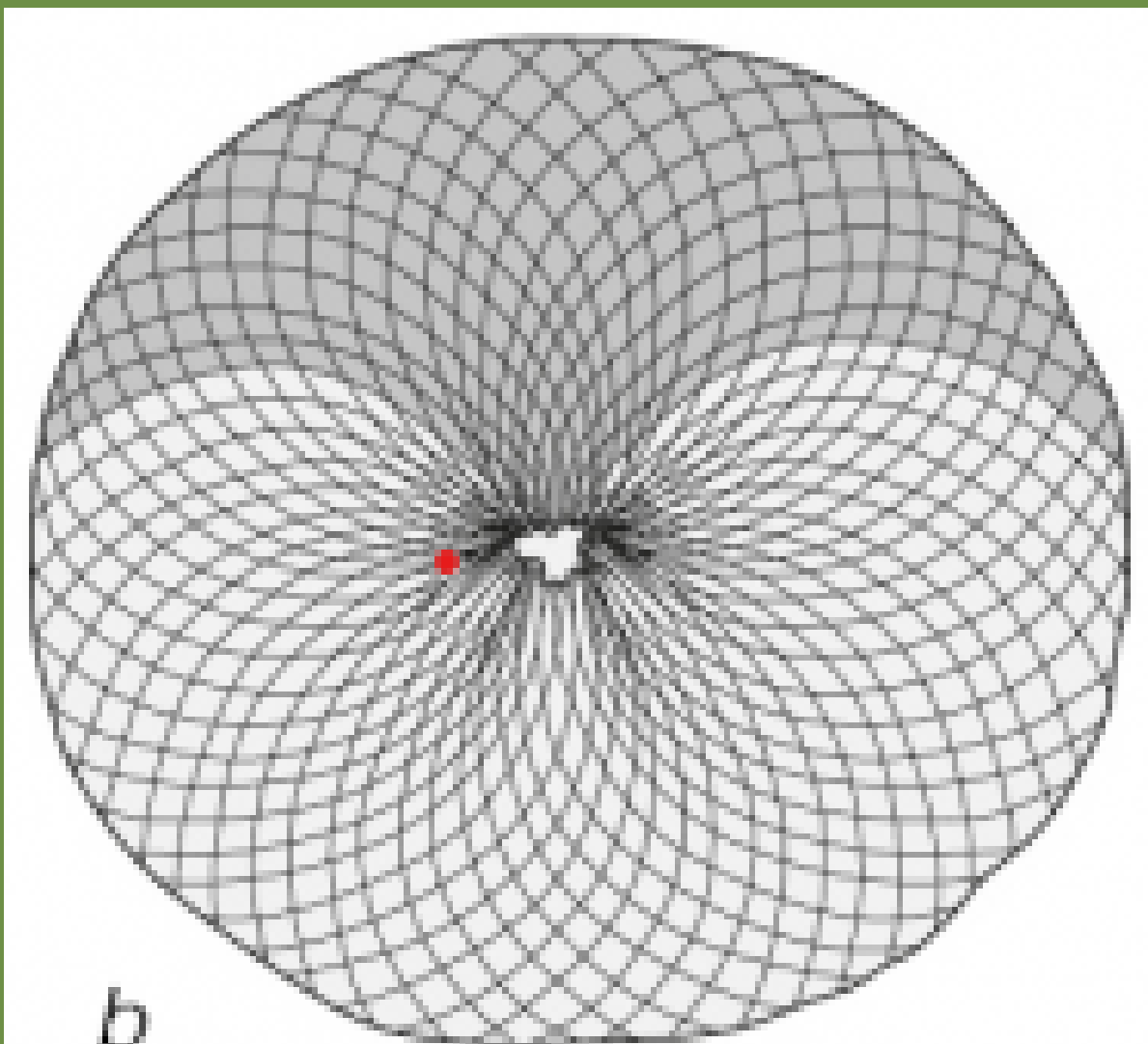
TREE- CURVED

PINECONE- SPIRAL

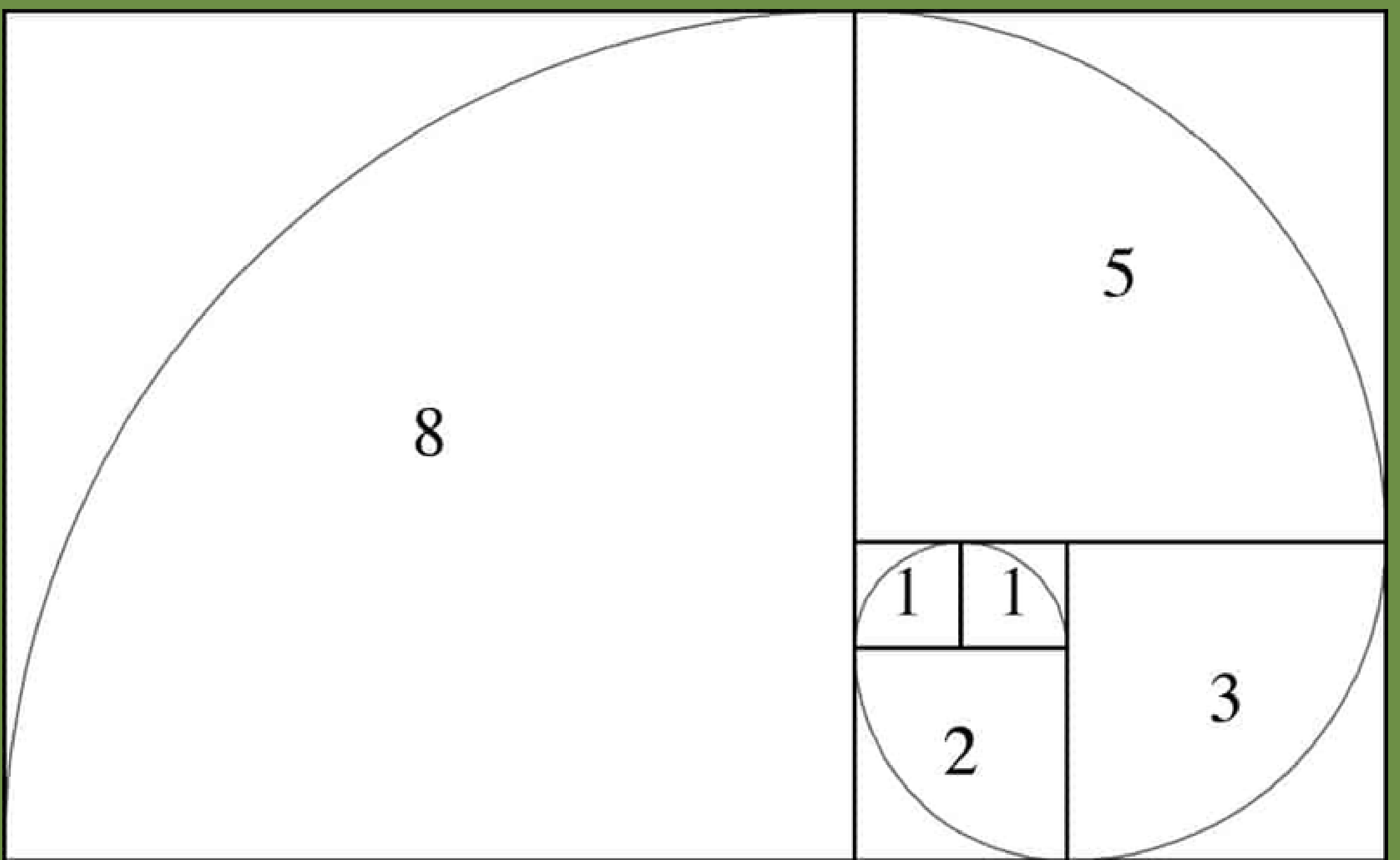
WHAT DO PINE CONES AND MATHEMATICS HAVE IN COMMON?



**KAUNAS KINDERGARTEN "ŠILINUKAS"/LITHUANIA/
JOLANTA SNITKĖ**



PINECONE- SPIRAL



**THE LOGARITHMIC
SPIRAL WAS DISCOVERED
IN 1638 BY R. DESCARTES**

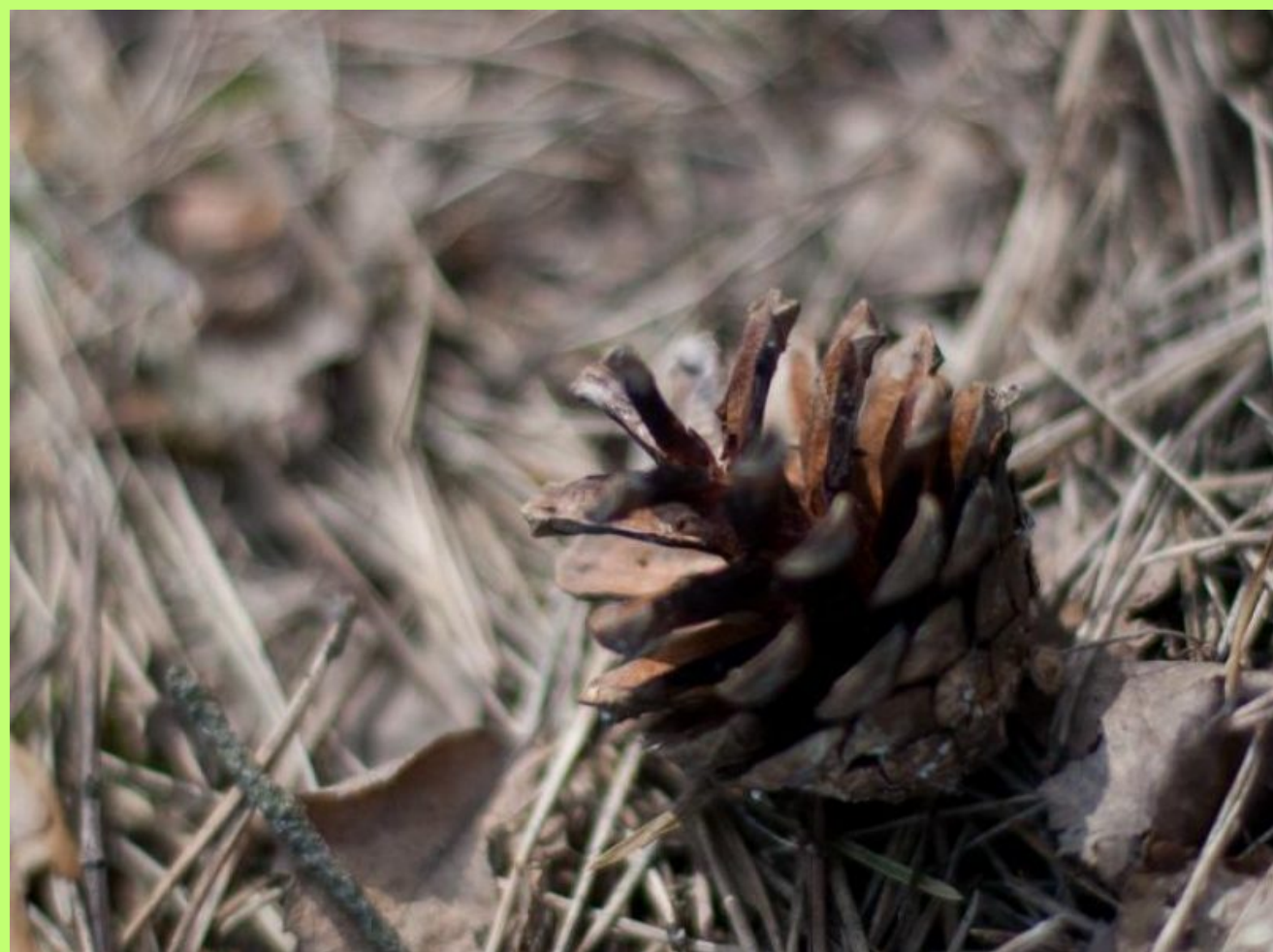
KAUNAS KINDERGARTEN "ŠILINUKAS"/LITHUANIA/



PINECONE- SPIRAL



KAUNAS KINDERGARTEN "ŠILINUKAS"/LITHUANIA/



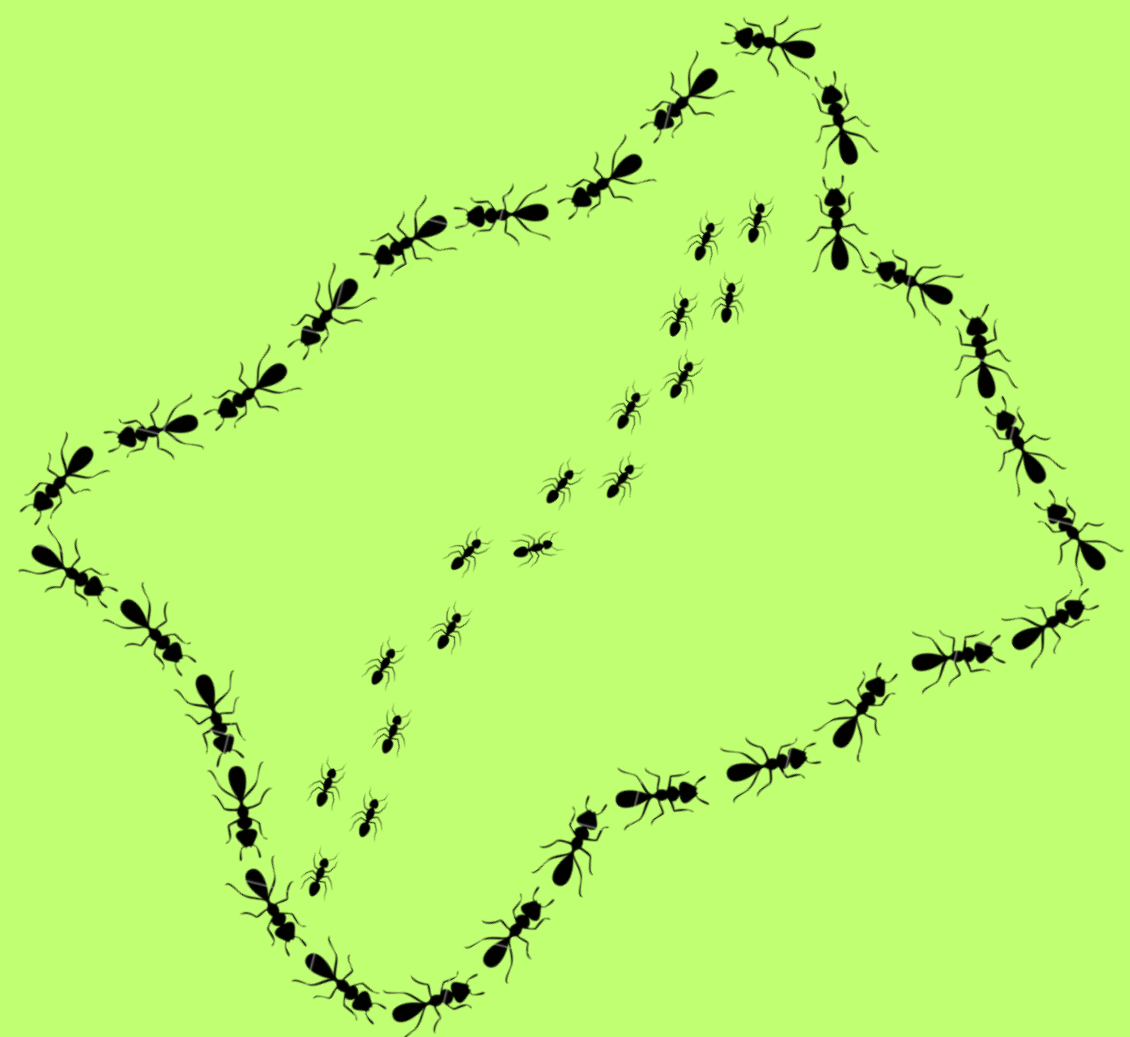
PINECONE- SPIRAL



KAUNAS KINDERGARTEN "ŠILINUKAS"/LITHUANIA/

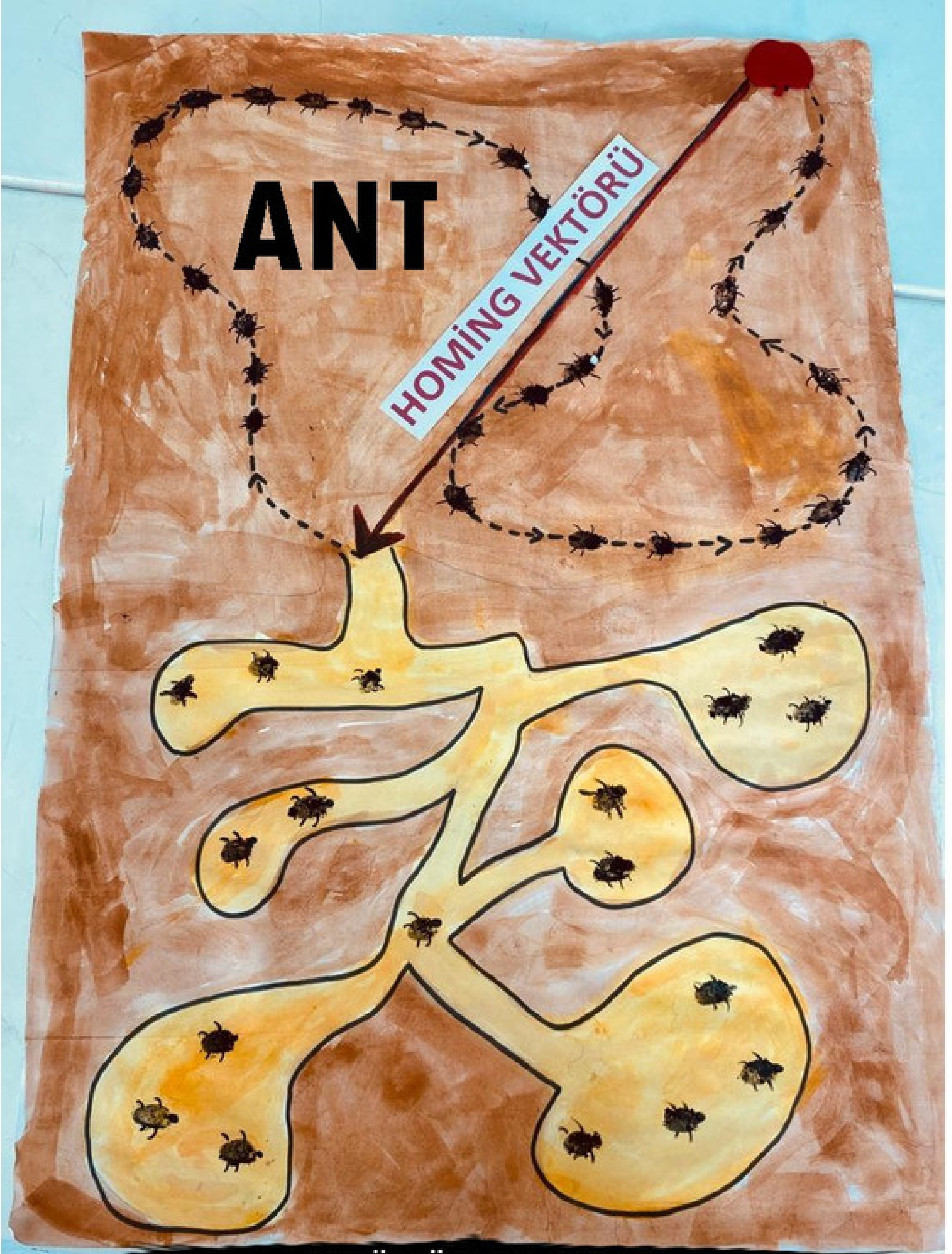
ANT – HOMING VECTOR

Saharan desert ants use the path integration system to find direction. In this system, the ant calculates its distance to the nest by using the sum of its walking and turning movements after leaving the nest. Divides the distance to the anthill into small parts; each segment carries the appropriate vector of direction and distance. The sum of these vectors yields the 'homing' vector, which gives the distance and direction of the nest.



**BETÜL ÖZLEN ÇIRAK GÜNLÜKBAŞI İBRAHİM
GÜL KINDERGARDEN FETHİYE**

ANT - HOMING VECTOR



BETÜL ÖZLEN ÇIRAK

GÜNLÜKBAŞI İBRAHİM GÜL KINDERGARDEN FETHİYE

ANT – HOMING VECTOR

ANT – HOMING VECTOR

ANT – HOMING VECTOR

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ANT – HOMING VECTOR

ANT – HOMING VECTOR

ANT – HOMING VECTOR

ŞEYMA YURTTUTAN

ANT – HOMING VECTOR

ŞEYMA YURTTUTAN

SNAIL – GOLDEN RATIO

FUNDA GÜNDEN

SNAIL – GOLDEN RATIO

FUNDA GÜNDEN

SNAIL – GOLDEN RATIO

Snail shells follow the logarithmic spiral- the golden ratio- whose growth factor is $\sim \pi$.



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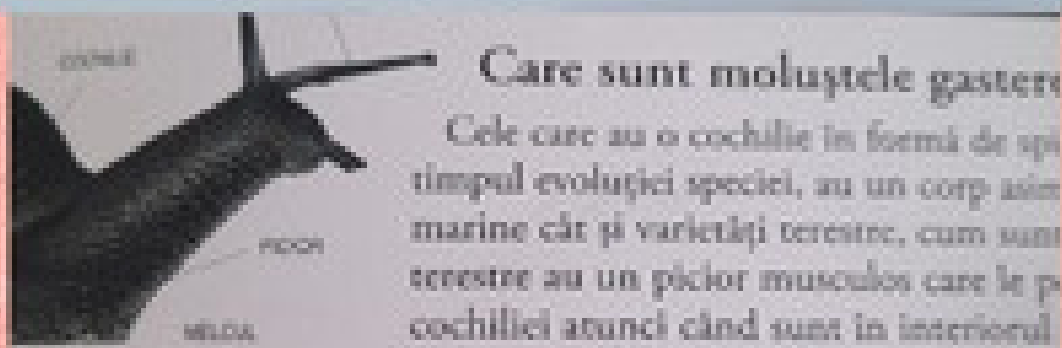
Mariana Chiș, Voinicelul

MARIANA CHIȘ

SNAIL – GOLDEN RATIO

Snail Golden Ratio

Mariana Chiș,
Voinicelul
Kindergarten,
România.



MARIANA CHIȘ

STONE – RECTANGLE

Stone is formed by crushing (shredding) rocks. It can be caused by erosion, naturally due to the influence of: rain, wind, frost, tides, earthquakes, floods and other meteorological phenomena.

Today, stone can also be obtained artificially: by cutting with various saws, crushing with explosives or grinding, crushing and in other ways. Stone has been used in construction since ancient times, as a building material for the construction of houses, auxiliary buildings, bridges and roads. There are different sizes and shapes. It is often used for decoration.



**TANJA SADIKI SABO
KINDERGAREN KOLIBRI**

STONE – RECTANGLE



TANJA SADIKI SABO
KINDERGARTEN KOLIBRI
SUBOTICA, SERBIA

STONE - RECTANGLE

STONE - RECTANGLE

STONE - RECTANGLE

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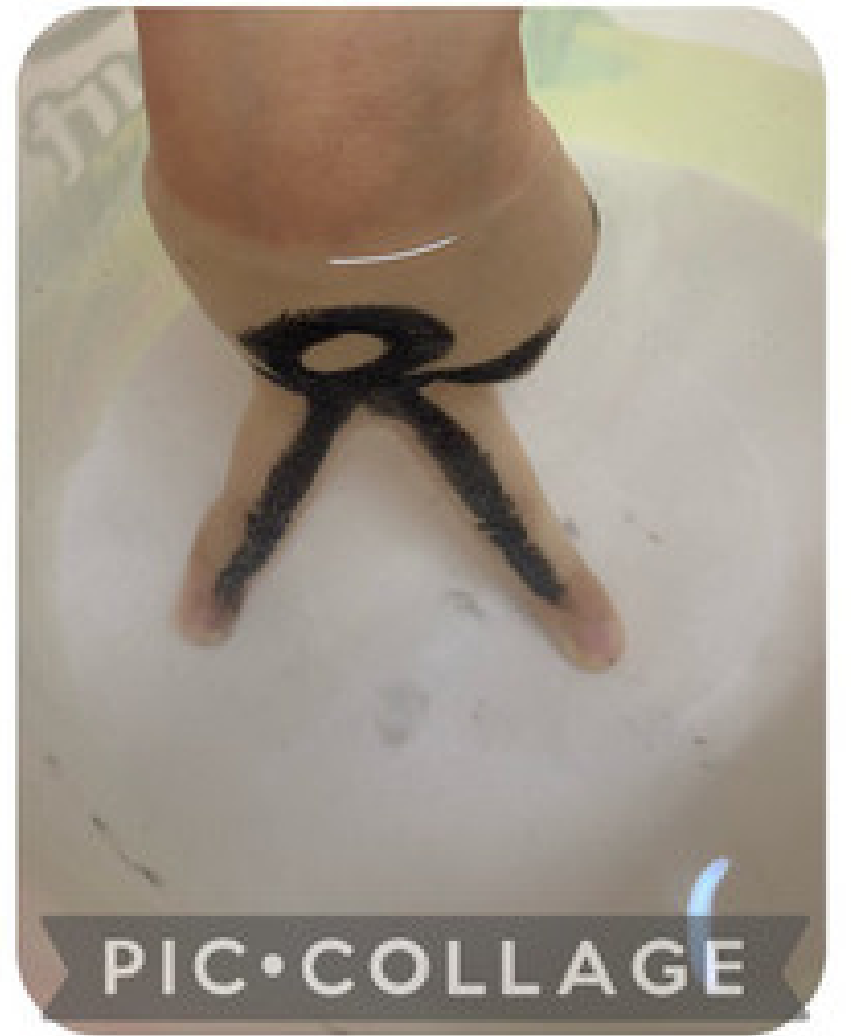
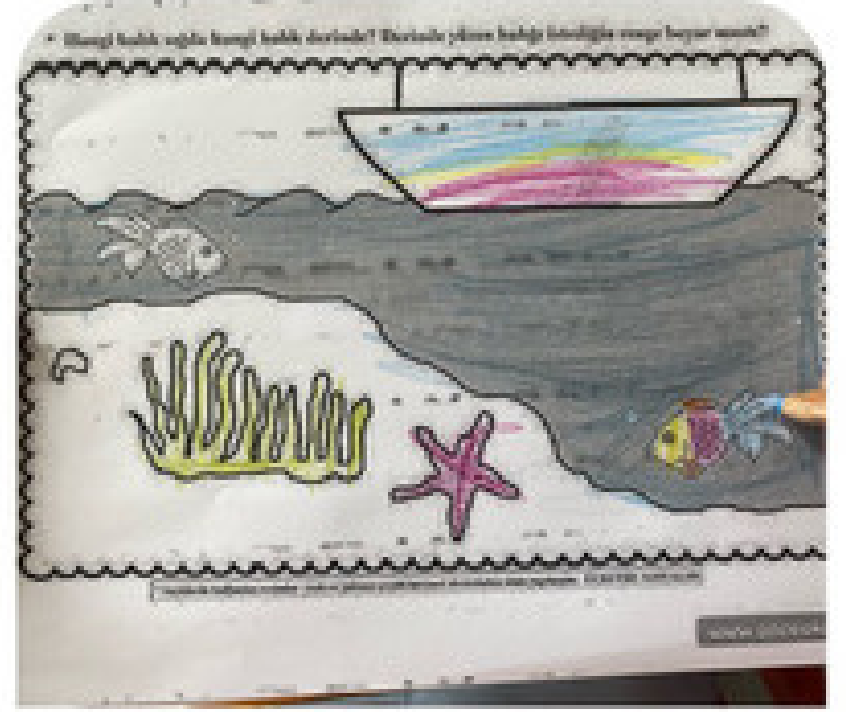
SEA – DEPTH

THE WORLD SEA MAP SHOWS THAT 70% OF THE WORLD IS COVERED WITH WATER. SINCE A LARGE PART OF THE PLANET IS COVERED WITH WATER, IT IS POSSIBLE TO EXAMINE MANY MARINE IDENTITIES ON THE WORLD'S SEAS AND OCEANS MAP.



**BÜŞRA ÖZKAN-LAMİA DAYANÇ PRESCHOOL-
ESKİŞEHİR-TÜRKİYE**

SEA - DEPTH



**BÜŞRA ÖZKAN-LAMİA DAYANÇ PRESCHOOL-
ESKİŞEHİR-TÜRKİYE**

SEA - DEPTH

SEA - DEPTH

SEA - DEPTH

SEA - DEPTH

