“Science in our little hands”

Scientific experiments

28th Primary School of Thessaloniki, Greece

Working methods

Investigation, observation, experiment, collection of data, personal experience and knowledge, desire to learn more, aspiration to have fun while learning

Working Groups:

Pupils of the 28th Primary School of Thessaloniki, First Grade, Fifth Grade, Sixth Grade, A group of pupils form the Special Needs Class

Topics & Themes:

Ideas of pupils based on the taught subjects, questions, interests, themes that provoke pupils to want to work, learn and have fun at the same time! All topics have been adjusted to the age groups each time.

Teachers working with the group of pupils: Bogkia Aggeliki, Georgiadou Ioanna, Kakaroglou Efi, Koutsianou Stergiani

EXERCISE 1	
WHAT ARE WE DOING?	**Do liquids of different densities mix?**
WHAT DO WE NEED?	Honey, water, oil and a see through container
HOW TO MAKE IT?	We pour the same quantity of the three liquids, one after the other, in a see through container. What happens? Do they mix? Do they stay separated?

INVESTIGATOR'S SHEET

Name and Surname:……

Date:……..

Problem: Do all liquids have the same density?

Liquids	Settles down	Floats on water	Partially lifted
honey			
oil			
water			

What do you notice?

Do they mix? Why?

Comment on the density of liquids

Answer……

……

……

……

……

……

EXERCISE 2	
WHAT ARE WE DOING?	**Does it stay afloat or sink?** **Does the shape of plasticine determine if it stays afloat or sinks into the water?** **The buoyancy**
WHAT DO WE NEED?	A see through container Plasticine of different shapes
HOW TO MAKE IT?	Firstly we fill a small container with water and then we immerse a sphere made of plasticine into it. Then we take the same piece of plasticine and the shape we give this time is the one of a small boat. Which of the two will sink? Why?

OR

Why does this happen?

Answer……

……

……

……

Comment on **Archimedes' principle:**

……

……

……

EXCERCISE 3	
What are we doing?	**“The deep blue bubble sea”**
Needed equipment and materials	A see-through vase Colorants Oil Vitamin pills
Steps to follow:	Fill the half vase with water and then pour the oil. Add the colorants; some drops of each color (blue, red and yellow) Then, add vitamin pills to see what will happen. What do you see?

Working Sheet

- Place the following photos in the correct order to explain how the experiment is done.

_____

_____

_____

_____

_____

_____

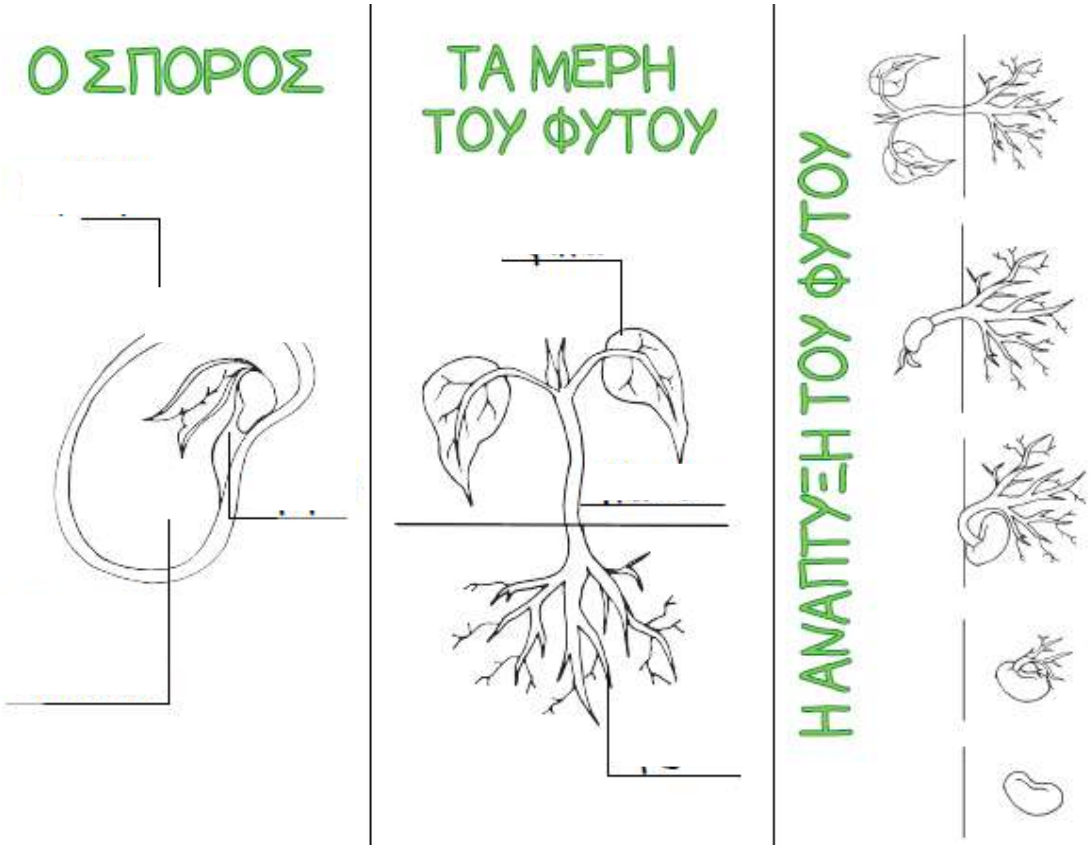
EXCERCISE 4	
What are we doing?	**Plants transpiration**
Needed equipment and materials	a plastic bag enough to fit completely around the plant pot a plant
Steps to follow:	Put a plastic bag around the leaves of a plant and close tight. Leave it for a few days What do you see? Pupils discover plants transpiration. They notice that there is water vapour in the plastic bag which covers the plant. This explains the fact that plants breathe.

EXCERCISE 5	
What are we doing?	**Are plants thirsty like us?** **How do they drink water?**
Needed equipment and materials	Three vases with clean water Flowers Colorants Colored paper
Steps to follow:	In the vases pour tab water. Add different colorants in each vase and place the flowers in the water after cutting their sprout, in order to open the straws. Leave the flowers overnight… What do you notice the next day? Look closely! How can we prove that flowers 'drink' water? Only if we see it! And how can we see it? It is seen on the leaves and flowers! Their color changes!!!

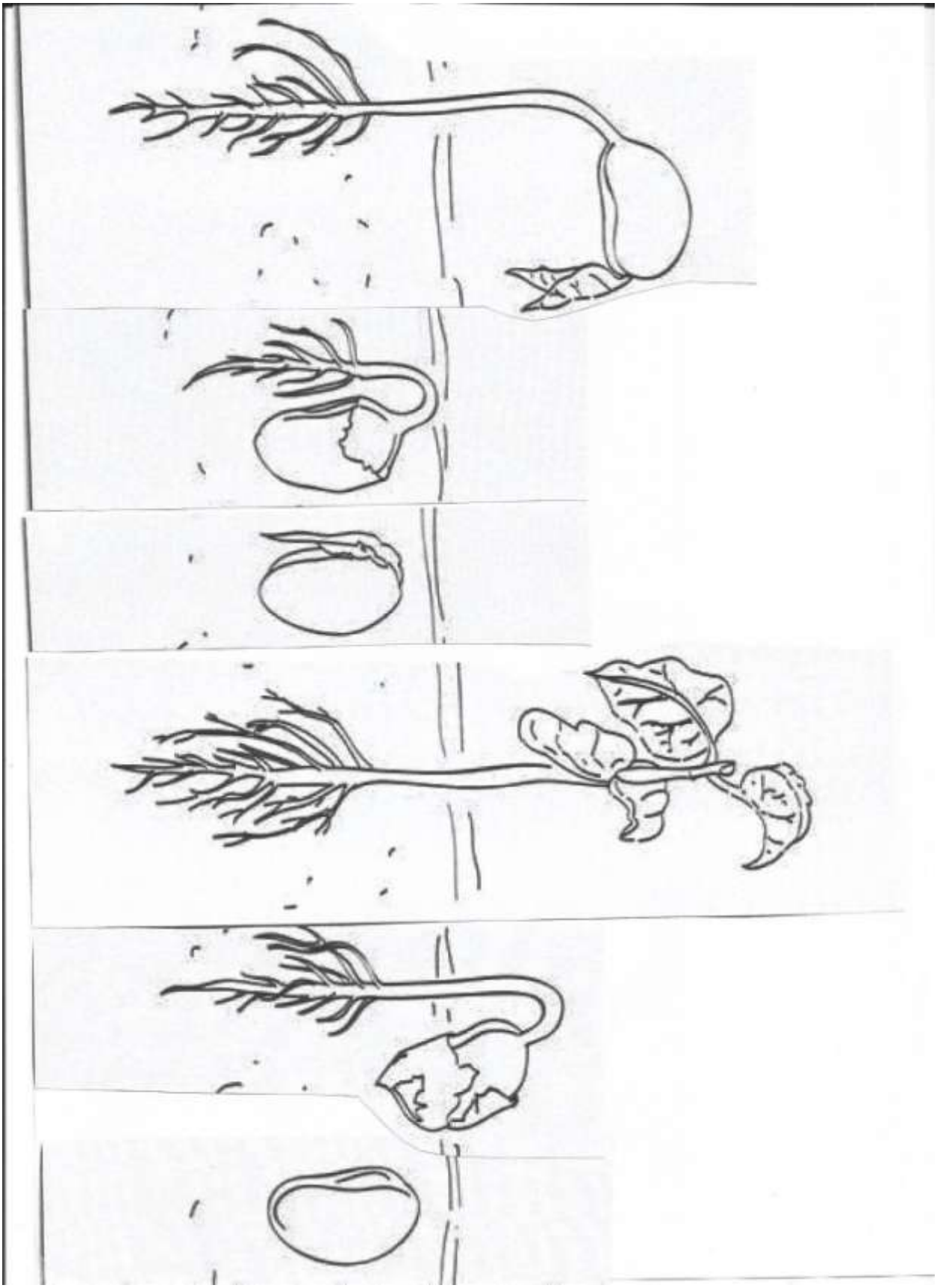
EXCERCISE 6	
What are we doing?	**Growing seeds into plants**
Needed equipment and materials	Seeds Clean bowls (yogurt bowls) Cotton Water Working sheets
Steps to follow:	We collect 10 clean yogurt bowls. Pupils cover the bottom with a piece of cotton, place the seeds on it and then cover them with another piece of cotton. Water each bowl and let it rest. Pupils take care of their pot, in turns. They take it at home and write down on the working sheet everything they notice about their seed and how it becomes a small plant.

Working sheet

1) Write down the parts of the seed and the bean plant.



2) Observe carefully the parts of the plant on the first exercise and then number the pieces on the second leaflet to point out the steps of the plants' growing.



EXCERCISE 7	
What are we doing?	**The Weather project – first part**
Needed equipment and materials	Listen to the weather forecasts daily Examine and observe daily the weather for a month Data collection A table with specific information (weather conditions and temperatures)
Steps to follow:	Pupils of the Sixth grade observed the weather conditions and temperature during a month time (January). They collected the needed data, decided which information to keep or not (such as temperature, humidity, wind, . . .) and they filled in the table of the month

Κ	1	6			✓								
Δ	2	2,5				✓							✓
Τ	3	2		✓									
Τ	4	6			✓								✓
Π	5	5,5				✓							✓
Π	6	-1						✓					
Σ	7	-6,5				✓							
Κ	8	-5,5			✓								✓
Δ	9	-5			✓								✓
Τ	10	-5,5				✓							
Τ	11	-6					✓		✓				
Π	12	-7				✓							
Π	13	-6,5			✓								
Σ	14	-4		✓									
Κ	15	-5,5			✓								
Δ	16	4,5				✓	✓						
Τ	17	6				✓		✓					
Τ	18	6				✓		✓					
Π	19	5						✓					
Π	20	-4,5		✓									✓
Σ	21	-5			✓								✓
Κ	22	-6											✓
Δ	23	-4		✓									
Τ	24	4						✓					
Τ	25	2,5					✓						
Π	26	2					✓		✓				
Π	27	-4		✓									
Σ	28	-4	✓										
Κ	29	-4			✓								
Δ	30	4											
Τ	31	3,5											

Working Sheet

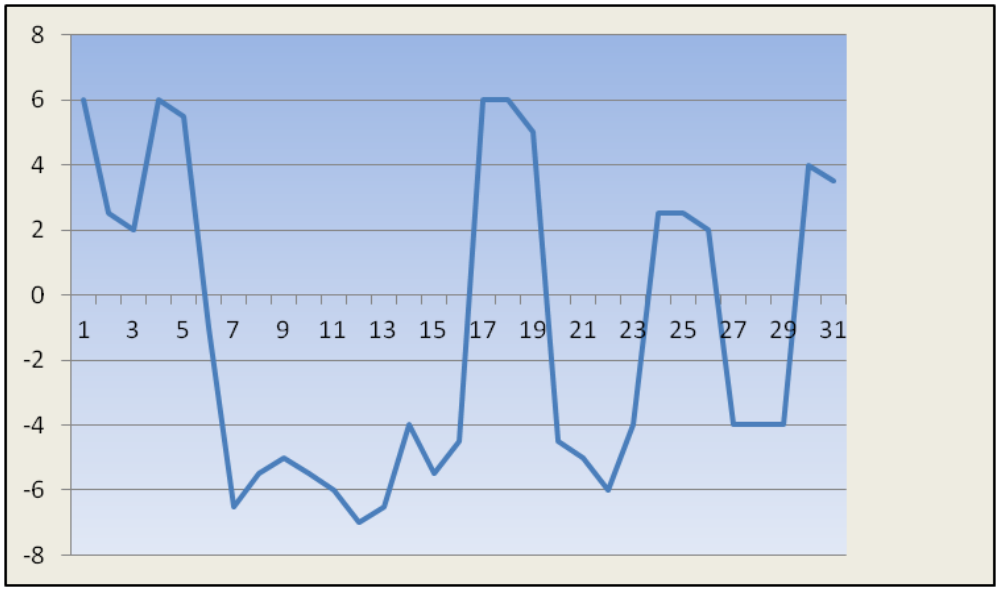
- You can do the same work, using the table given below

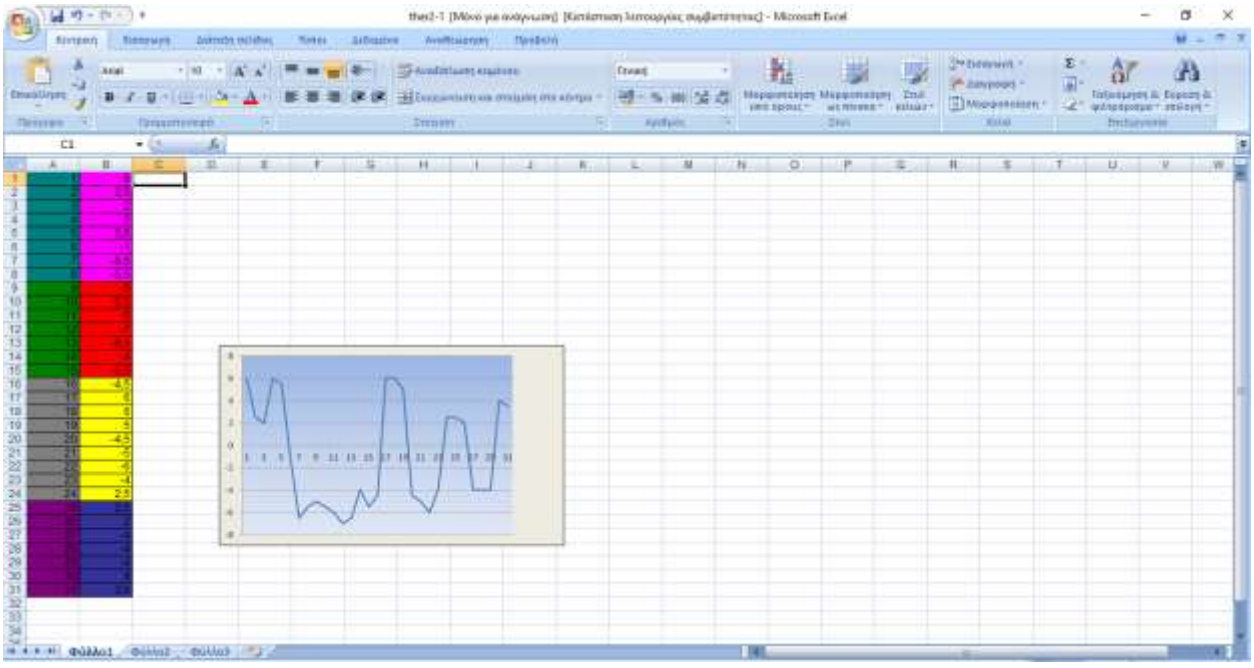
Month: _____

	1												
	2												
	3												
	4												
	5												
	6												
	7												
	8												
	9												
	10												
	11												
	12												
	13												
	14												
	15												
	16												
	17												
	18												
	19												
	20												
	21												
	22												
	23												
	24												
	25												
	26												
	27												
	28												
	29												
	30												
-	31												

EXCERCISE 8	
What are we doing?	**The Weather project –second part**
Needed equipment and materials	Information about the weather conditions for a month The program excel
Steps to follow:	Insert all the collected information/values in an excel file and work in this program. Create statistical graphs, using specific parts of the collected information.

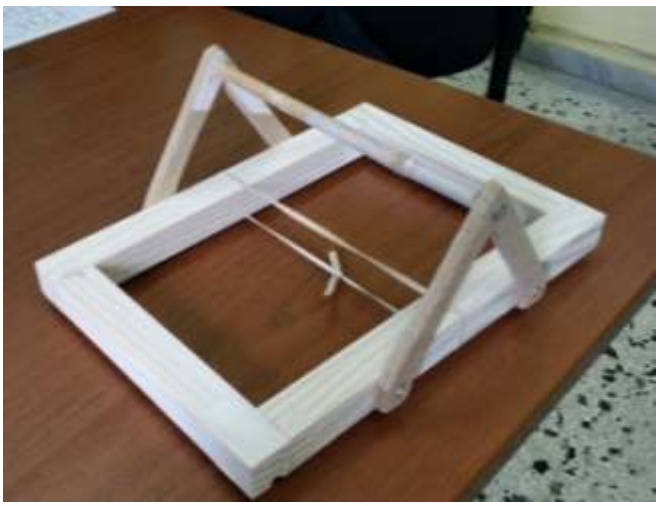
An example of the statistical graphs produced with excel.

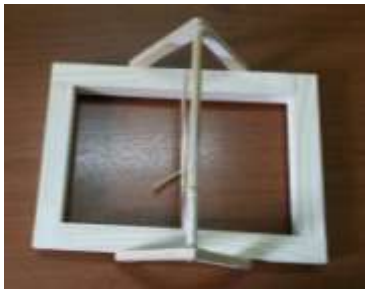




EXCERCISE 9	
What are we doing?	**The Weather project –third part**
Needed equipment and materials	A map of Greece and a map of Europe Smiles, hats, umbrellas, ruler, jackets, sunglasses
Steps to follow:	Watch carefully the daily weather forecast. Write some texts reporting the weather in your region. Make different types of texts: formal, funny and extraordinaire. Play the forecasters and enjoy !

EXERCISE 10	
WHAT ARE WE DOING?	**Archimedes' catapult / The lever**
WHAT DO WE NEED?	a plastic fork, a wooden rod ,some nails, a hammer ,a small plastic ball, a piece of rope
HOW TO MAKE IT?	✓ We cut the wooden rod in four pieces (two of them should be longer) and we make a rectangle by joining them. We can use either some glue to stick them or nail them down. ✓ We make a small wooden bridge of about 8 cm high and we fix it to the middle of the longer sides. We can use some glue again. ✓ We can also attach four small wheels on the two sides of the catapult. ✓ We use the rope to roll up the base of the two longer sides of the bridge. The rope shouldn't be tight! ✓ We attach the plastic spoon to the rope and we pull it back. ✓ We put the small ball in the spoon. ✓ Now we are ready for launching!!!! o But be careful!!We will need the help of an adult for this construction!!!!!





Working on this exercise:

Try to make your own lever following the instructions. Send us the photos to see your work!

Have fun!