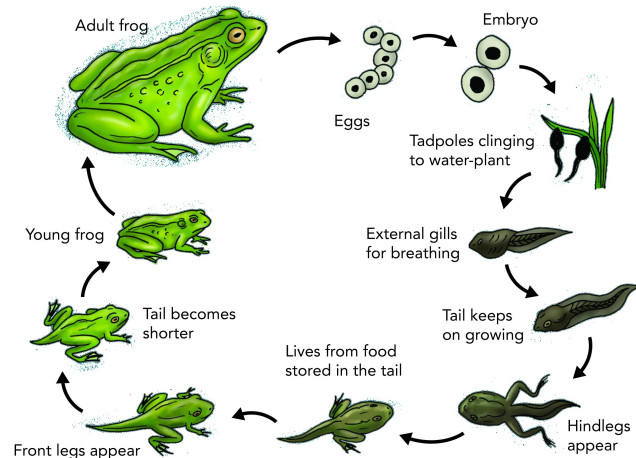


8. Biology. Indicate the living beings you notice in the pond.

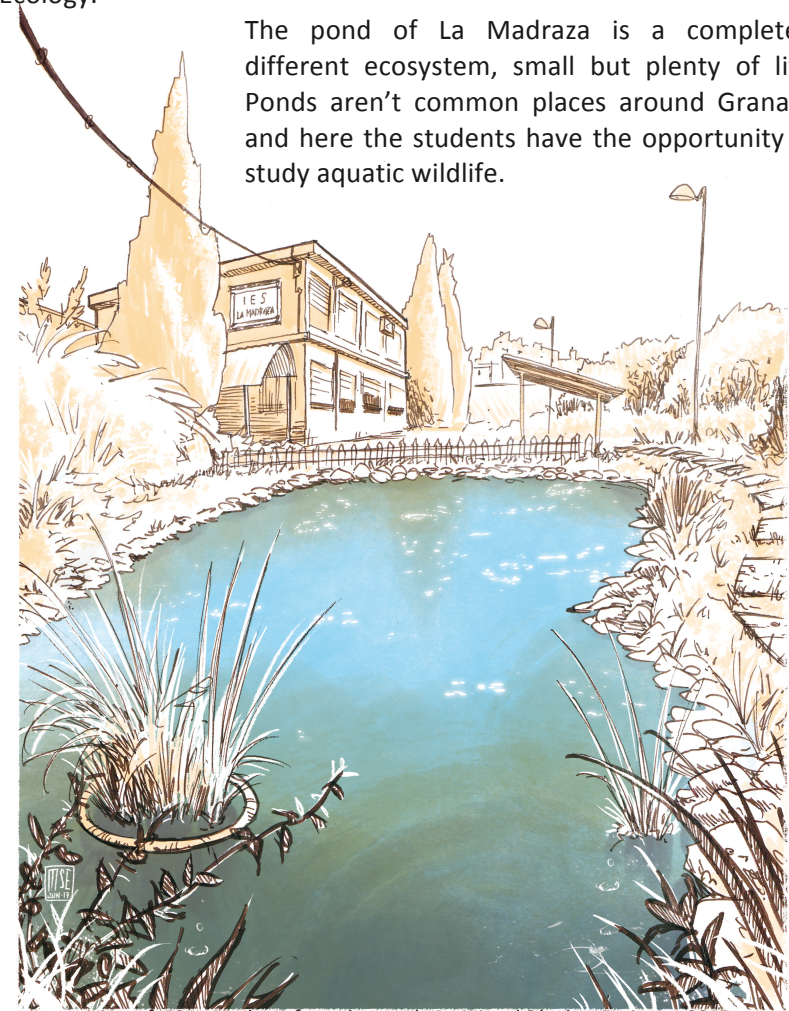
Date									
Frogs									
Tadpoles									
Gastropods (snails)									
Bivalves									
Worms									
Water fleas (<i>Daphnia</i>)									
Other crustaceans									
Aquatic beetles									
Larvae of mayflies									
Larvae of dragonfly									
Pond skater (<i>Gerris</i>)									
Backswimmer (<i>Notonecta</i>)									
Larvae of flies									



La Madraza Secondary School offers some places to observe Nature. Above all, a botanical garden that shows many plants which are typical of the Mediterranean forests. These plants attract many birds, insects and other animals so the students can also learn about Zoology and Ecology.



The pond of La Madraza is a completely different ecosystem, small but plenty of life. Ponds aren't common places around Granada and here the students have the opportunity to study aquatic wildlife.



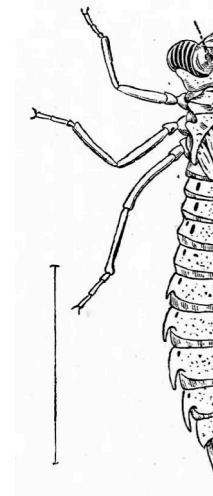
View of IES La Madraza from the pond. By Miguel Sánchez Espinosa, 2017

ACTIVITIES IN THE BOTANICAL GARDEN

1. Concepts about **Taxonomy** can be learned using the information in the labels:
 - a. “Encina” is the main tree in Spain. What’s its scientific name?
 - b. At the end of the scientific name you can see the letter L. from Linnaeus who named many species. Write the scientific name of three species described by Linnaeus.
 - c. Other plants were described by other botanists. Write three botanists (their surnames are at the end of the scientific names).
 - d. If two species are very similar they belong to the same genus. Find out two species belonging to the genus *Pistacia*.

2. Botanical labels can be used to learn about **Ecology**.
 - a. Find out one species living above 2000 metres above sea level.
 - b. Find out one species living at sea level.
 - c. Find out one species living at 1000 metres in humid places.

7. Art. Complete the drawings of a backswimmer and a larva of dragonfly.



ACTIVITIES IN THE POND

4. **Maths activity.** Calculate the volume of the pond. Use a measuring tape and multiply length (m), width (m) and depth (m) to get the volumen (m^3). Remember $1 m^3 = 1000$ litres.

5. Physical properties.

- What's the water temperature?
- Turbidity: Is it transparent?
- Is the water free from bad smells?

6. Chemical properties.

- Acidity/alkalinity using pH paper:
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.
- Look at the chemical test results and decide about the quality of the water:



Excellent Good Moderate Poor Bad

3. Depending on the season we can observe **birds, insects, flowers, fruits and different organs of the plants**, for example, leaves. Give a “plate number” to some plants according to their leaves and the information below.

	A	B	C
<i>Crataegus monogyna</i> (majuelo)			
<i>Pistacia lentiscus</i> (lentisco)			
<i>Arbutus unedo</i> (madroño)			
<i>Acer granatense</i> (arce granadino)			

Arrangement along the stem:	1	2	3	4		
1. Whorled						
2. Isolated						
3. Opposite						
4. Alternate						
Shape of the blade:	1	2	3	4	5	6
1. Acicular						
2. Lanceolate						
3. Hastate						
4. Cordate						
5. Ovate						
6. Palmate						
According to the edge:	1	2	3	4	5	
1. Entire						
2. Dentate						
3. Serrate						
4. Lobed						
5. Creft						

1. Small bird with blue wings and very long beak.
2. Black and white bird and a very long tail.
3. Small and brown bird. Very good camouflage.
4. Dark bird with a long red tail.
5. Nocturnal bird with white face and black eyes.
6. Medium-size bird with yellow eyes.
7. Medium-size bird with grey head and brown back with some black spots. It hunts mice.
8. White and black bird with a red spot on its head.

9. Heavy bird with several colours. Short and red beak.
10. Black bird with orange beak.
11. Small bird. Grey body and black head.
12. Red chest and a white line on the neck.
13. Brown nocturnal bird with dark eyes. It camouflages in the trees.
14. Brown bird with short beak. It hides on the floor.
15. Bird with yellow colours and short beak.
16. Small bird with red chest and grey back.

