

GR_Class_Plants_Multimodal

Teacher Education Design Principle + code:	9. Teacher education should enable teachers to make best use of and assess the various modes of expression and representation of science and mathematics learning to support inquiry and the development of creativity. TE: Multimodal
Specific Teacher Outcome(s):	9.1 Teachers should be able to recognize and value children's various forms of expression and representation of their ideas and learning in science and mathematics. 9.2 Teachers should be able to make best use of children's preferred forms of expression and representation of their science and mathematics ideas to support inquiry and their creativity development. 9.3 Teachers should be able to select and use different approaches for and forms of recording children's ideas and learning in science and mathematics at different stages of the learning process and for various purposes, including to support children's reflection and reasoning processes. 9.4 Teachers should be able to use the various modes of children's expression and representation of science and mathematics ideas (e.g. pictures, graphs, gestures, physical activities) for assessment purposes.
Factors linked with:	P: Affect; P: Collab; P: Express; LA: Connect; LA: Comm; A: Form
Type of material (image – interview (int) – classroom extract (class):	Classroom
Originating from:	
Country report :	D4.3 Greece
Case:	Case 5
Episode:	1 – Plants
Teacher:	Stavros
Age Group:	7-8
Selected episode present in D4.4 Appendix	No

Setting the context for a collaborative learning activity

From the beginning it was apparent that the main learning objective of the session was to use this investigation as an opportunity for children to learn particular areas of knowledge about plants, particularly the main parts of plants. Children were learning through the use of inquiry based approaches within a series of planned and scaffolded activities. The lesson took place both indoors and outdoors and included both formal, teacher-led aspects and informal, child-initiated aspects.

At the outset of the lesson the children were asked to form two teams (red and yellow) of four, go out to the yard for 5 minutes, gather plants and bring one per child back to the classroom.



Each child would then present his/her plant to the rest of the class and highlight what impressed them about it. Children took turns to present the plants they brought in (olive branch, lettuce, turnip, rose). When presenting the plants, children included any information they knew about the plants with Stavros asking them questions.

Stavros then asked the children to compare the different plants they had brought and spot similarities and differences. Children were asked to observe the different plants and guided Stavros to draw the different parts of a plant on the blackboard. Children described the parts as Stavros provided the scientific terminology. The entire classroom discussion ended with Stavros announcing that in the days that would follow the children were going to plant lentils and provided children with general instructions.



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During the second day, the lesson began with a revision of the activities of the day before and a brief evaluation of the parts of plants. The typical phrase used during this part of the lesson was “What did we say about...yesterday?”. For the next forty minutes children looked at the photographs they had taken the day before and tried to find and name the different parts of each plant.

Stavros supported children with the proper terms to use for previously mentioned characteristics and introduced new terms (e.g. stamens) when children observed and commented that specific characteristic of the plant. Stavros insisted on children observing the photos and describing the different parts of the plant or the shape of its flower. He used questioning to allow children to elaborate on their thoughts and correct their misconceptions. Children were also required to make comparisons, predict on the evolution of different plants and provide explanations.

The concluding activity of this two-day lesson, which is the focus of this episode, was a role playing exercise.

Stavros: We are already divided into two teams. I will remind you the basic characteristics of herbs, bushes and trees (the three categories that characterise plants) and I want you to form a living statue.

K: Ahhh, this is very nice

Stavros: The first team will show me what a herb looks like, the second team will show me a bush and so on.

Z: How are we going to do that?

Stavros: Using your body

D: With our hands?

Stavros: You can use your whole body; you can do whatever you like. First off the herb. This means soft sprout for example. Then you will do the bush and finally the tree. I want you to think about the herb. You can discuss and rehearse for five minutes and then you will come back here to show me.

Children start discussing what to do, trying to agree on an idea. The first idea is pictured in the image below with four children standing up with their hands over their heads.



Stavros: What are you supposed to be?



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An: We are a pine

Stavros: Why do you have your arms up?

All four: It's the branches.

Ar: and the hands are the leaves

Stavros: That is very good. You can try to move your hands to show that there is wind blowing. Try to do a bush now.



The other team yells for Stavros to come and see what they have done.

Stavros: Let's see. What are you doing here? Why are you on the floor?

E: You are looking at us from above.

Stavros: I understand now. What are you then?

All: A herb

Stavros: So what is E supposed to be then?

E: The sprout

Stavros: What about the others?

K, Z, ??: Leaves

Stavros (as he is standing above them): So what am I supposed to be now that I am standing here.

K: The roots?

Stavros: Now I could be the roots as I am under the trunk

By the time that Stavros was done with the second team, the first team was trying to do a herb. Stavros reminded them the basic characteristics of herbs.

Stavros: What about you then?

All four: We are a poppy

Stavros: Oh that is very nice. What are you doing now?

Children all yelling, inaudible in the recording.

Stavros: So you three are the leaves and D is the flower. I get it now, well done.



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Stavros: That was very good. Let's see what the others have done. What are you supposed to be?

All four children: A tree

E: A tree with three branches

Stavros: That is very good.



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