

Additional resources for the teacher

In STE(A)M education (S) stands for Science, (T) Technology, (E) Engineering and (M) Mathematics, and is referred to as a learning process that integrates all these areas into various educational activities. A (ART) is about arts and culture, history, humanities and more (Spyropoulou, et al., 2020). STEAM (Science, Technology, Engineering, Arts, Mathematics) activities and especially those related to engineering concepts play an important role in early childhood education. In particular, introducing engineering principles in a way that meets the developmental needs of young children can provide many benefits to children such as introducing them to basic problem-solving skills (Kennedy & Odell, 2014, p. 255). Specifically, young children through their participation in practical projects are encouraged to think critically, identify problems, analyze situations and find solutions in a creative way (Convertini, 2020). Finally, they learn to cooperate, work in teams, communicate and acquire social skills necessary for their future success in many fields.

(Phase 4) Activity entitled "Becoming little architects".

The 1st group will need the following materials:

Paper plates

Craft sticks

Glues

Small animals

Activity: Using these materials we ask the children to create bridges on paper plates and experiment with their stability by trying to pass the small animals over them.

2nd group materials :

Plastic straws

Modeling clay

Animals

Activity: Children in this group will try to build bridges using straws as supports. The modeling clay will help them form various shapes in order to create arches.

³ materials :

Wooden bricks

Activity: Children use building blocks to build different types of bridges, for example to create arches, to build towers that resemble to suspension bridges.

⁴ materials :

Plastic cups

Tongue depressor

Activity: Tongue depressors will be used to connect the plastic cups and create different bridge structures.

During the activity we emphasize concepts such as balance, stability and support. Fundamental principles of engineering are introduced through an interactive and enjoyable learning experience.

(Phase 5) Activity entitled "Bridges in fairy tales".

In this activity the construction will be done in a model, in which the children will decide what materials they want to use and what type of bridge they will build.

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