Co-funded by the Erasmus+ Programme of the European Union

Erasmus+

Learning Scientific Skills Outside the Classroom

Scientific Skills

Observing	Identifying and Classifying Specific skill – comparing objects

Country of Origin	Suggested Age Range	Suggested Theme
Croatia	4 – 5	Forces

Location outside the classroom	Benefits of using this location
School Grounds	Children need a large space to complete the activity

Learning Objectives – Scientific Skills	Learning Objectives – Knowledge
To observe changes in a balloon's shape To observe the motion of a balloon To compare tied and untied balloons	To understand how force changes the shape and motion of a balloon

Key Vocabulary

Scientific skills vocabulary – see, observe, compare, same, different
Knowledge vocabulary – balloon, air, inflate, fly, shape, change, move

Resources / Equipment

- Equipment to make balloon rockets – balloons, string, straws, sticky tape, fence/tree to tie the string to

Teaching Activities

Discuss – What is a balloon? How do we inflate it? How do we stop the air from coming back out? If we did not tie it up, what would happen to the balloon?

Activity – Teacher blows up a balloon in front of the children.

Discuss – What happens to the balloon when it is inflated? How does it look different to the uninflated balloon? How is it the same?

Explain – They are going to go outside and make some 'balloon rockets' and see how they travel/'fly' along a piece of string. These will be made with support from an adult because it can be hard to inflate the balloons.

Demonstrate – Show the children that there are pieces of string tied from one end of the playground to the other with a straw threaded on each string. Show them how to inflate a balloon and help them to stick it to one of the straws using sticky tape. Tell them they are going to let go of the balloon when it is attached to the straw and say what happens.

Activity – Teacher inflates a balloon and ties it up so the air cannot escape. Children stick this to one of the straws on the string using sticky tape and let go. Children observe what happens to the balloon.

Discuss – What happened to the balloon when they let go? What happened to the shape of the balloon? Did the balloon move?

Explain – They are going to repeat the experiment but this time they will use a balloon which is tied up. What do they think will happen?

Activity – Teacher inflates a balloon and gives it to a child - making sure the child holds the ends of the balloon and does not let the air escape. Working together, another child tapes the balloon to a straw on the string. Once the balloon is attached, they let go of the untied balloon and observe changes in the balloon.

Discuss – What happened to the untied balloon when they let go? What happened to the shape of the balloon? Did the balloon move?

Compare – Was there a difference in the way the tied and untied balloons travelled along the string? How was it different? How was it the same? Did the balloons change shape?

Discuss – What made the balloons move?

Explain – The balloons change shape when we force air into them to make them inflate. When we let go, the air escapes from the balloon so the balloon goes back to its un-inflated shape. When the untied balloon is attached to the straw and you let go it is the force of the air escaping that makes the balloon move along the string.

N.B. To help children understand that air is forced out the balloon, you can hold the ends of an untied balloon and let them put their hand over the end. Children can feel the force of the air escaping when you let the balloon deflate.

Examples of children's work and teacher comments from country of origin

Regardless of the complexity of this theme, these young learners can understand the effects of forces if it is presented in a creative and interesting way.
As an extension to this activity, chidren could investigate using different shaped balloons or different orientations of the string.