Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

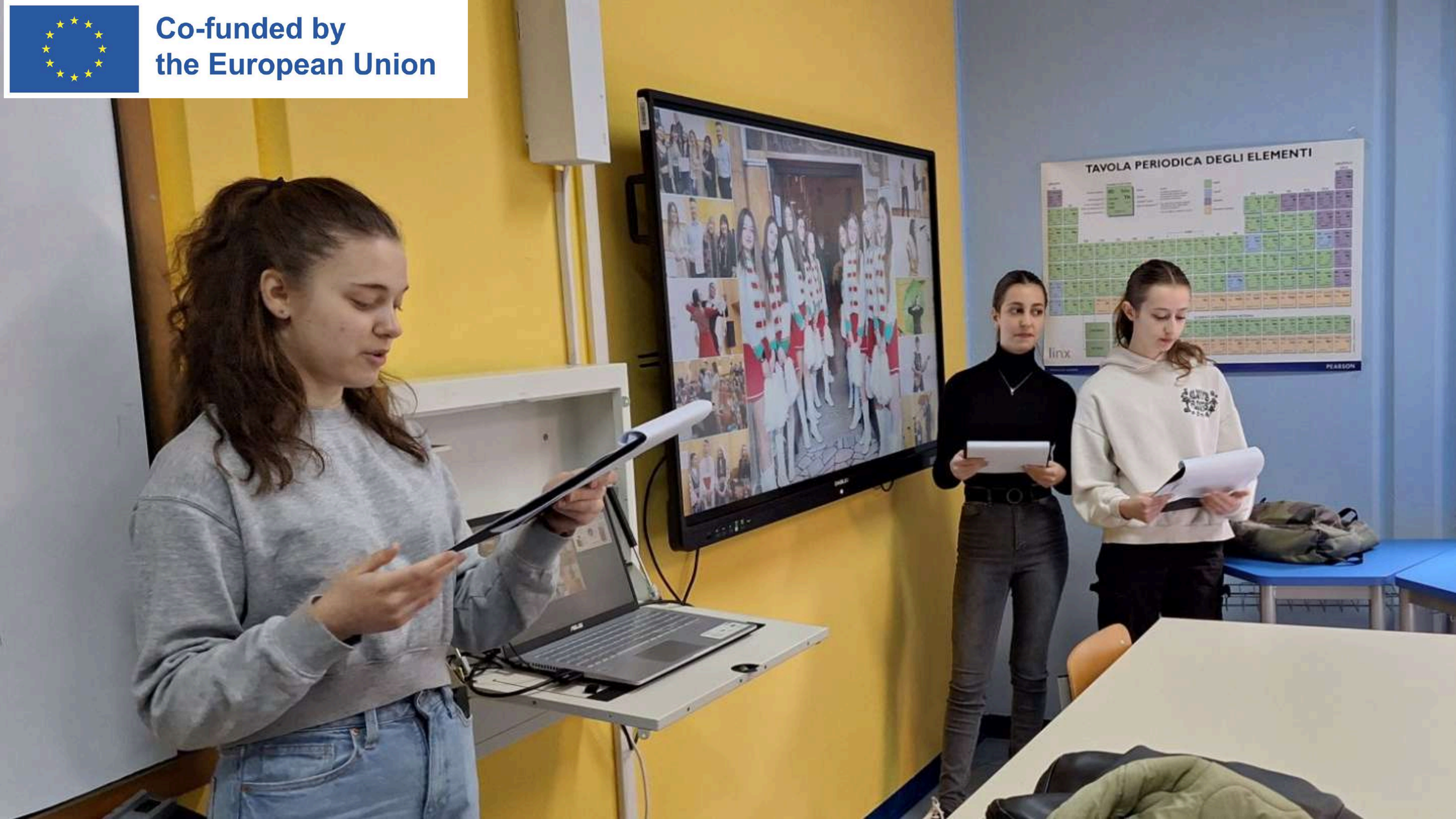
Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union



Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

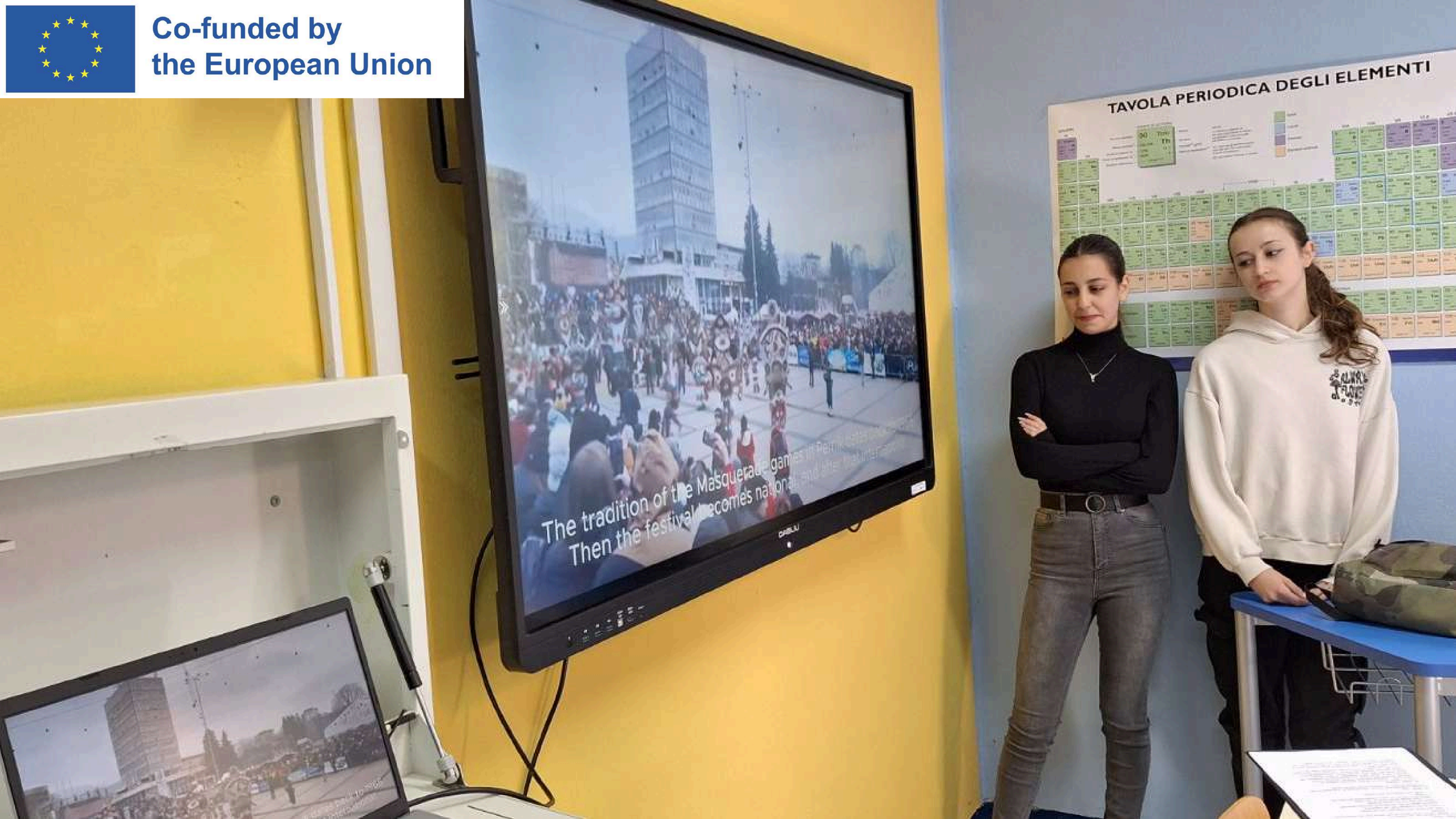
Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

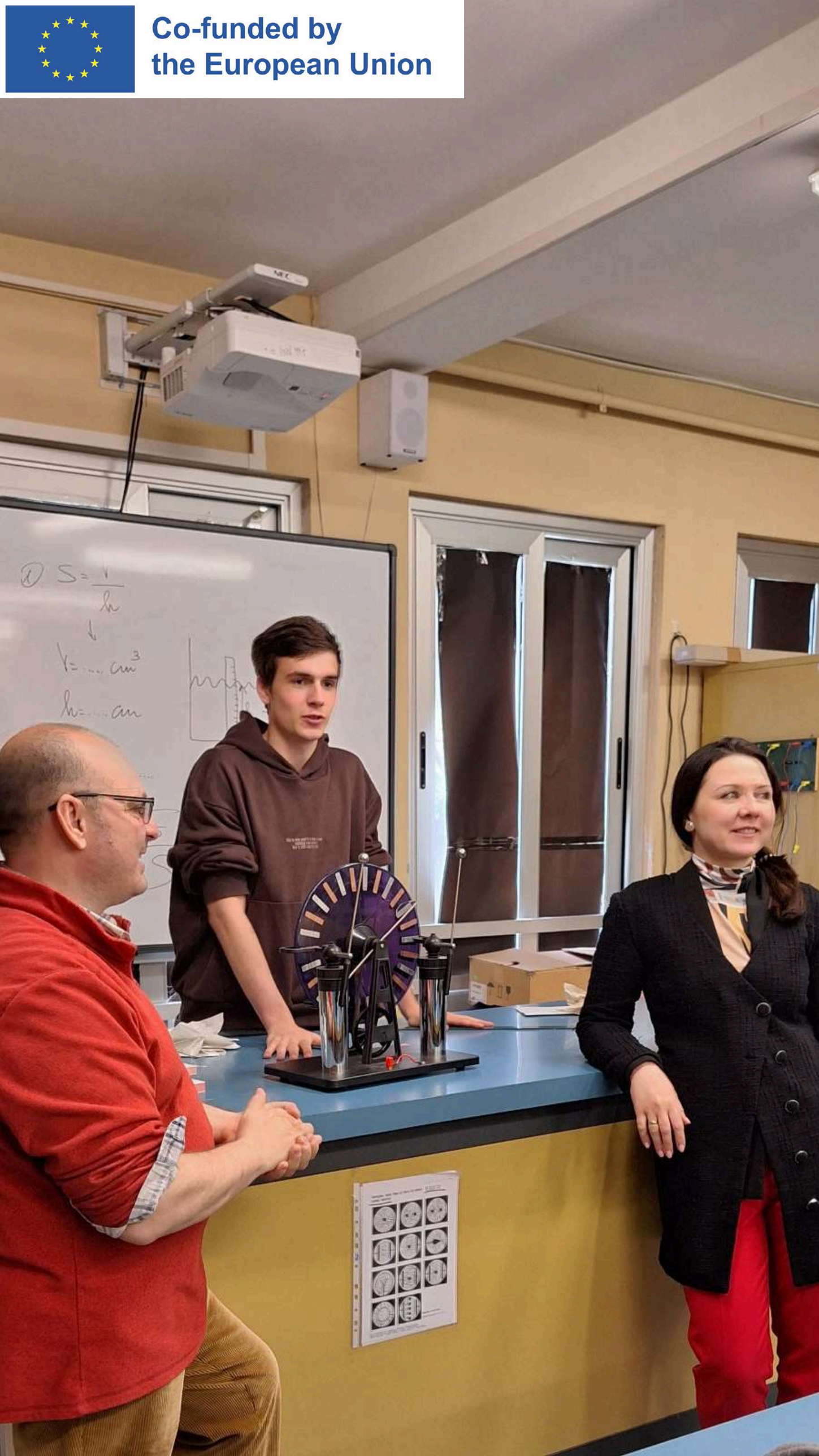


Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union

Co-funded by
the European Union



Co-funded by
the European Union

Facilitator's Guide

Fruitful DNA Extraction

Materials

for the whole group

- ▲ 70% or higher percentage ethanol, chilled overnight in a freezer
- ▲ light-colored detergent, such as dishwashing liquid
- ▲ balance

for each small group

- ▲ 1 500-mL or larger beaker, or 250-mL or larger flask
- ▲ 2 200-mL or larger graduated beakers
- ▲ 1 100-mL graduated cylinder
- ▲ 1 100-mL beaker
- ▲ a kiwi fruit
- ▲ knife and fork for cutting and mashing
- ▲ thermometer
- ▲ funnel
- ▲ basket-style paper coffee filter to fit in the funnel
- ▲ ice
- ▲ cold water
- ▲ hot tap water (60°C)
- ▲ 2 3-qt saucepans for water baths
- ▲ coffee stirrers
- ▲ 10 mL detergent
- ▲ 50 mL chilled ethanol
- ▲ 2 g table salt
- ▲ waxed paper or paper plate
- ▲ 1 test tube for each group member
- ▲ test tube rack or similar device
- ▲ 1 medicine dropper
- ▲ hook made from thin wire (optional)
- ▲ hot plate (optional)

Management

- ▲ Amount of time for the activity: 45 minutes
- ▲ Preparation time: 30 minutes
- ▲ Group size: 1–5

Preparation and Setup

Activity Overview

Extract DNA from kiwi fruit using simple household chemicals.

Concepts

› DNA is the genetic material in organisms.

› The sequence of DNA subunits determines an organism's trai

› We can extract DNA from tissue using a very simple procedu

Preparation

❶ Obtain the materials. Nearly pure ethanol (99–100%) work Less-pure ethanol can be purchased at some grocery stores, b aware that it contains acetone as a denaturant and is extreme If neither of these forms of ethanol is unavailable, Bacardi 1 (75.5% ethanol) works well as a substitute. If yo to as your source of ethanol, be sure to conceal

❷ Chill the ethanol or ethanol substitute ov

Questions for Getting Started

› Have you heard of DNA before? What does DNA ng organisms?

› Do you look like your parents or siblings? Why do you think is so?

TIPS!

- The activity can be streamlined by preparing the extraction solution and hot and cold water baths ahead of time.
- The activity can be completed over a 2-day period. Whe most of the liquid has been filtered, the filtrate can be covered and stored in the refrigerator for use the next day Or the entire filtration procedure may be conducted in a refrigerator overnight.

Co-funded by
the European Union