



SCIENCE IN THE CITY:  
BUILDING PARTICIPATORY  
URBAN  
LEARNING  
COMMUNITY  
HUBS through  
RESEARCH and  
ACTIVATION

# PULCHRA PROJECT

# REGENERATION OF PRADULIN PARK

PRESENTATION OF:

4CHIA, 4BIAA: Matilde Visintin, Zoe Follo, Enrico Sbrissa



PULCHRA Project Workshop  
“City Challenges – Open Schooling –  
The Cities as Urban Ecosystems”  
November 30, 2021



ISIS DELLA  
BASSA FRIULANA



UNIVERSITÀ  
DEGLI STUDI  
DI UDINE  
*hic sunt futura*



THE GLOBE  
PROGRAM



REGIONE AUTONOMA  
FRIULI VENEZIA GIULIA

#whereisthescience?

# OPEN SCHOOL



**STUDENTS  
AS  
ACTORS  
OF  
CHANGE**

**4** QUALITY  
EDUCATION



**9** INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



**11** SUSTAINABLE CITIES  
AND COMMUNITIES



**13** CLIMATE  
ACTION



**15** LIFE  
ON LAND





# SCIENCE IN THE CITY

CHALLENGES WE ARE FACING IN THIS TWO YEARS OF PROJECT:



## CHALLENGE 4:

**URBAN SPACES  
THAT CONNECT PEOPLE  
IN A HEALTHY ENVIRONMENT**

**FIRST YEAR**

## CHALLENGE 6:

**INNOVATIONS  
FOR SOCIAL  
AND ENVIRONMENTAL  
BENEFIT**

**SECOND YEAR**

# **GREEN SPACE FOR SCIENTIFIC ENVIRONMENTAL PRACTICE**

## **HOW ?**

**THROUGH THE REDEVELOPMENT OF THE PARK  
AND THE CREATION OF AN OPEN AIR LAB**

**CHALLENGE 4:**

**URBAN SPACES  
THAT CONNECT PEOPLE  
IN A HEALTHY ENVIRONMENT**

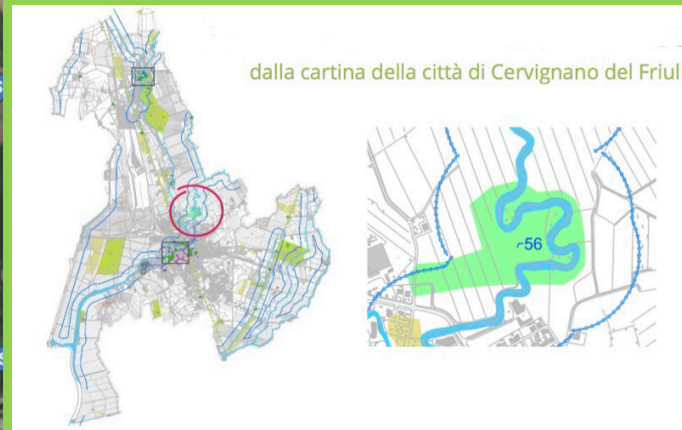
**FIRST YEAR**





# WHERE?

# LOCATION OF THE PARK



Cervignano del Friuli (UD)



# **WHAT IS OUR SCHOOL PRACTICALLY DOING?**

## **DURING SUMMER SCHOOL AND DURING THE YEAR :**

- ANALYSIS ON THE STATE OF WATER OF AUSA RIVER
- VEGETATION STUDY AND LAND COVER
- STUDY OF THE SOIL AND THE IMPACT OF NEIGHBORING CULTIVATED FIELDS

## **CITIZEN SCIENCE ACTIONS:**

- COMMUNICATION WITH CITIZENS

to:

- INVOLVE PEOPLE IN THE CO-MANAGEMENT OF THE PARK
- INVOLVE PEOPLE IN THE COLLECTION OF DATA WITH AN APP



# WATER MONITORING OF THE RIVER

## CHEMICAL PARAMETERS DETERMINED DURING THE SUMMER SCHOOL IN JUNE 2021

Analysis points		Coordinates	Analyzed parameters	Sample day
1) Pradulin	ITCV_PRAD1	45°49'55" N, 13°20'26" E	Nytrates, conductivity, pH, temperature, O2 saturation, turbidity	March 2021 14/06/2021 (December 2021)
2) Pradulin exit	ITCV_PRAD2	45°49'45" N, 13°20'17" E	Nytrates, conductivity	March 2021 14/06/2021 (December 2021)
3) Tennis/orti	ITCV_TENNIS	45°49'40" N, 13°20'13" E	Nytrates, conductivity	March 2021 14/06/2021 (December 2021)
4) Steel bridge	ITCV_PONTEFE	45°49'27" N, 13°20'01" E	Nytrates, conductivity	March 2021 14/06/2021 (December 2021)
5) Marcegaglia	ITCV_MARCEGAGLIA	45°49'06" N, 13°19'22" E	Conductivity, pH, temperature	March 2021 14/06/2021 (December 2021)



**SAMPLING POINTS  
ALONG AUSA RIVER**



THIS KIND OF  
MEASUREMENTS ARE  
REPEATED PERIODICALLY TO  
SEE THE STATE OF RIVER

# WATER MONITORING OF THE RIVER

## MICROBIOLOGICAL PARAMETERS DETERMINED DURING THE SUMMER SCHOOL IN JUNE 2021

Analysis points		Coordinates	UFC tot/100m L	Sample day	Balneability limit
1) Pradulin	ITCV_PRAD1	45°49'55" N, 13°20'26" E	16500 ufc/100mL	March 2021 14/06/2021 (December 2021)	UFC tot: 700ufc/100mL marine 1500/100mL interne
2) Pradulin exit	ITCV_PRAD2	45°49'45" N, 13°20'17" E	8200 ufc/100mL	March 2021 14/06/2021 (December 2021)	
3) Tennis/Orti	ITCV_TENNIS	45°49'40" N, 13°20'13" E	8650 ufc/100mL	March 2021 14/06/2021 (December 2021)	
4) Steel bridge	ITCV_PONTEFE	45°49'27" N, 13°20'01" E	15200 ufc/100mL	March 2021 14/06/2021 (December 2021)	
5) Marcegaglia	ITCV_MARCEGAGLI A	45°49'06" N, 13°19'22" E	14650 ufc/100mL	March 2021 14/06/2021 (December 2021)	

**DATA REFERRED TO COLIFORM BACTERIAS**





# MONITORING OF SOIL

PARAMETERS DETERMINATED DURING THE SUMMER SCHOOL IN JUNE 2021

Analysis points	Soil parameters analyzed		Sample day
	Surface	Deep	
1) River bank	pH, redox potential, soil composition, micro elements colors, carbonates	pH, redox potential, soil composition, micro elements colors, carbonates	March 2021 14/06/2021 (December 2021)
2) Grass field	pH, redox potential, soil composition, micro elements colors, carbonates	pH, redox potential, soil composition, micro elements colors, carbonates	March 2021 14/06/2021 (December 2021)
3) Near heap	Soil composition, micro elements colors, carbonates	pH, soil composition, micro elements colors, carbonates	March 2021 14/06/2021 (December 2021)
3) Corn field near the river	Soil composition, micro elements colors, carbonates	Micro elements colors, carbonates	March 2021 14/06/2021 (December 2021)
5) Corn field near the car park	Soil composition, micro elements colors, carbonates	Micro elements colors, carbonates	March 2021 14/06/2021 (December 2021)





# MONITORING OF LAND COVER

- LAND COVER ANALYSIS USING **GLOBE PROTOCOLS**  
(Global Learning and Observations to Benefit the Environment)
- VALIDATION OF DATA COLLECTED BY SATELLITES



TREE'S TYPE	TREES HEIGHT FOR DOMINANT SPIECES CLASSIFICATION					MEASUREMENT OF CIRCUMFERENCE OF THE TREE
	TANGENT	ANGLE	DISTANCE	EYES HEIGHT	TREE HEIGHT	DIAMETRER
Rural maple	1,19	50°	7,30m	1,65cm	10,34m	22cm
Ash	1,23	51°	9,50m	1,60cm	13,29m	22cm
Hawtron	0,65	33°	6,00m	1,65cm	15,55m	/
Oak	0,84	40°	10,50m	1,60cm	10,42m	/

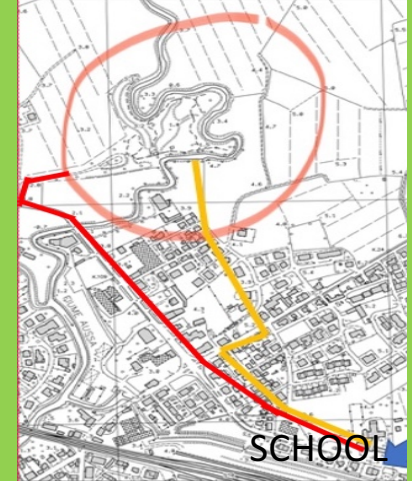




# THE CURRENT SITUATION OF THE PARK

**CURRENTLY THE STATE OF THE PARK IS CRITICAL IN MANY ASPECTS:**

- LIMITED AND DANGEROUS ACCESSIBILITY
- UNUSABLE INTERNAL CONNECTIONS (bridges)
- INVASIVE VEGETATION
- ANTHROPOGENIC POLLUTION (waste)
- WATER POLLUTION (of Ausa river)
- HIGH CONCENTRATION OF NITRATES AND COLIFORMS



JUNE 2021

NOVEMBER 2021





# PRESENTATION OF OUR PROJECT

**4 NOVEMBER 2021: SECOND  
PRESENTATION TO THE  
STAKEHOLDERS**

**LOOKING FOR COLLABORATORS IN  
THE REDEVELOPMENT OF THE PARK**







18 NOVEMBER  
2021:  
THIRD  
PRESENTATION TO  
4 NEW CLASSES  
OF THE SCHOOL

# HOW WILL WE LIVE TOGETHER?

DISCUSSION ABOUT COMMON ASPECTS BETWEEN  
OUR PROJECT AND ARCHITECTURE BIENNALE IN VENICE



## KEY WORDS BETWEEN BIENNALE AND PULCHRA PROJECT

cambiamento climatico  
 trasformazione territorio  
 società informata  
 brainstorming  
 padiglioni  
 acqua  
 collettivo  
 sfruttamento della natura  
 futuro ambientale  
 città e comunità sostenibili  
 società  
 sostenibilità  
 resilienza  
 digitalizzazione  
 ospitalità  
 sensibilizzazione  
 sviluppo culturale  
 ecosistema  
 sviluppo sostenibile  
 digitalizzazione  
 punto di incontro  
 trasformazione del territorio  
 comunicazione  
 innovazione  
 futuro  
 sostenibilità  
 ambiente  
 ecosostenibilità  
 analisi  
 comunità  
 inquinamento  
 città sostenibili  
 società resiliente  
 collettiva  
 eco-sostenibilità  
 sostenibilità  
 spazi condivisi



# WHAT DID WE PRESENT?

- CREATION OF AN OPEN-AIR LAB IN THE PARK
  - RECREATIONAL AREAS and ORGANIZED ACTIVITIES
- to involve citizens in **LEAP- LEARNING EXPLORING and ACTIVITY PATH**

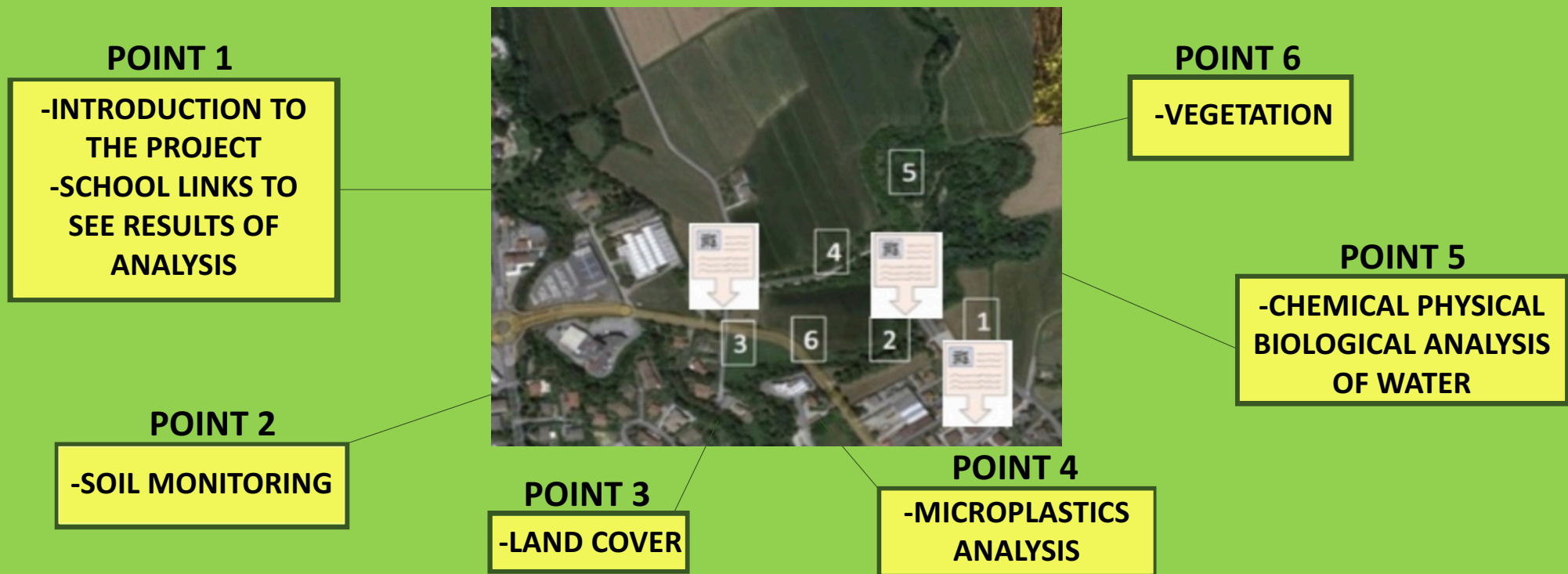




# WHAT IS LEAP?

(LEARNING, EXPLORING and ACTIVITY PATHS)

- ANALYSIS POINTS IN THE PARK
- POSTER ADVERTISING/QRCODES IN EVERY POINT WHICH DESCRIBE OUR ACTIVITIES, DATA AND RESULTS



# WHAT WILL OUR NEXT STEPS BE?



INVOLVING **COMPUTER  
SCIENCE AND ELECTRONICS**  
STUDENTS IN THE  
CONSTRUCTION OF AN  
AUTOMATED DATA SYSTEM  
FOR

TEMPERATURE  
HUMIDITY  
AIR  
SOIL

CREATION OF POSTER  
ADVERTISING AND  
QRCODES TO VISUALISE  
SEASONAL DATA



MEETING MUNICIPAL  
ADMINISTRATION TO TALK  
ABOUT OUR PROPOSALS,  
TIME AND WAYS TO REALIZE  
OUR PROJECT

WORK TO INVOLVE ALL  
CLASSES OF OUR  
INSTITUTE AND CITIZENS





# **WHO DO WE INVOLVE?**

- **STUDENTS**
- **UNIVERSITY**
- **RESEARCH INSTITUTES**
- **PROTEZIONE CIVILE**
- **ASSOCIATIONS**
- **CITIZENS**