

# APW-ADWR Intergovernmental Agreement Report 2020-22

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Arizona Project WET

Education Coordinator



COOPERATIVE EXTENSION

Arizona Project WET

Maricopa County





COOPERATIVE EXTENSION

# Arizona Project WET

Maricopa County

## **Mission:**

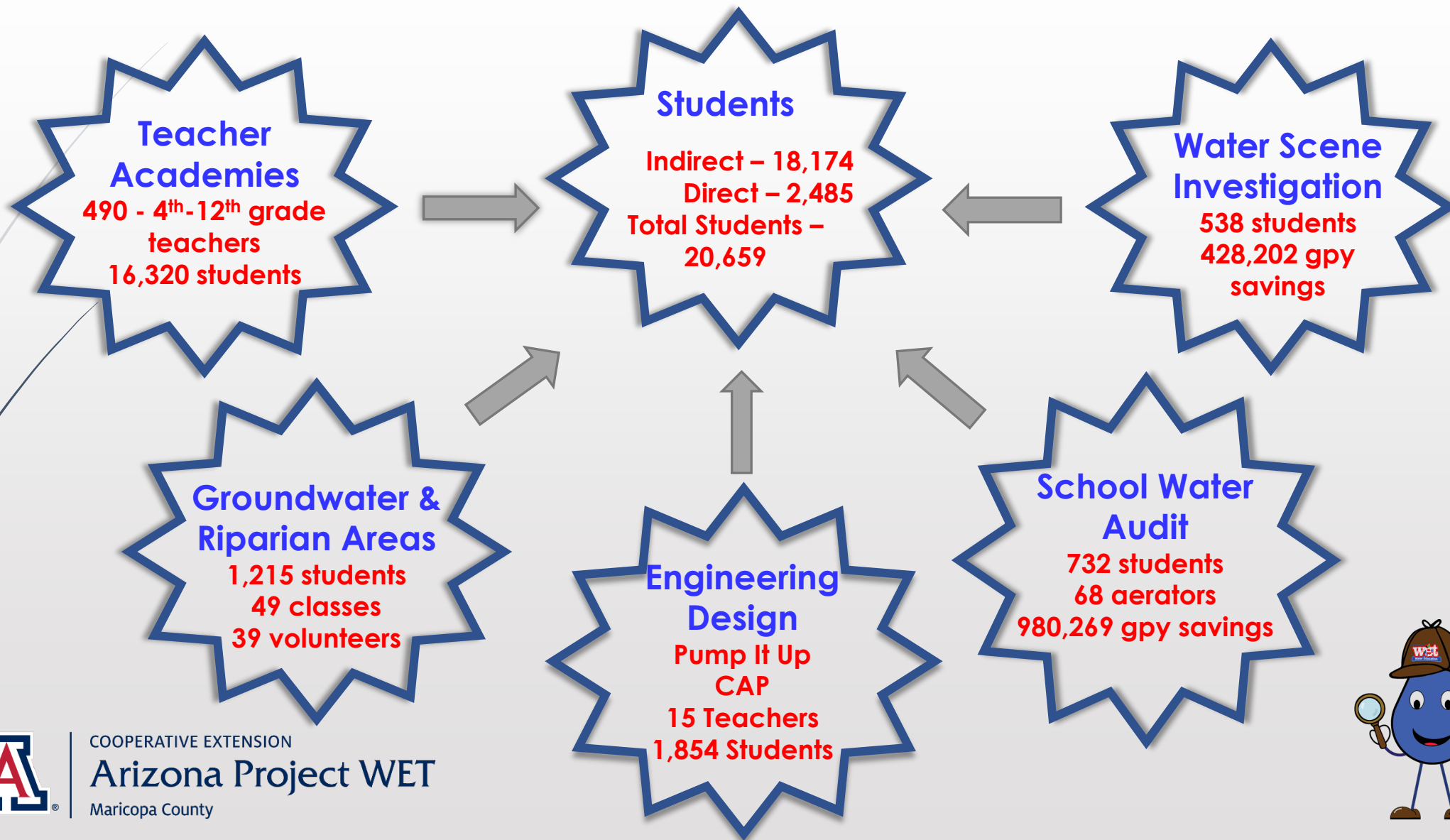
Provide people with the knowledge and skills to take action for water stewardship in their community.

## **What we do:**

We build STEM literacy and water stewardship through:

- Teacher PD that deepens content knowledge and evolves instructional practice.
- Direct Student Outreach that inspires students through relevant, water-focused STEM experiences.
- Bridging the gap between community water stewards and the K-12 education system.

# Water Education Program Stats



## II. Teacher Professional Development (PD)

We offer teachers:

1. professional development that evolves teachers' instructional practice and water-related content mastery through STEM integration, real-world and relevant application, and collaborative work.
2. the support needed to adopt instructional practices that encourage students to apply their learning to develop ideas, design solutions, and deliver positive change.



### **APW provided:**

- ✓ 490 teachers
  - ✓ 16,320 students
    - ✓ 2,625 combined hours of virtual & in-person PD

# Task 1 – Multi-day Academies

## Aqua STEM Unit Academies

➤ *Waters of Our World*

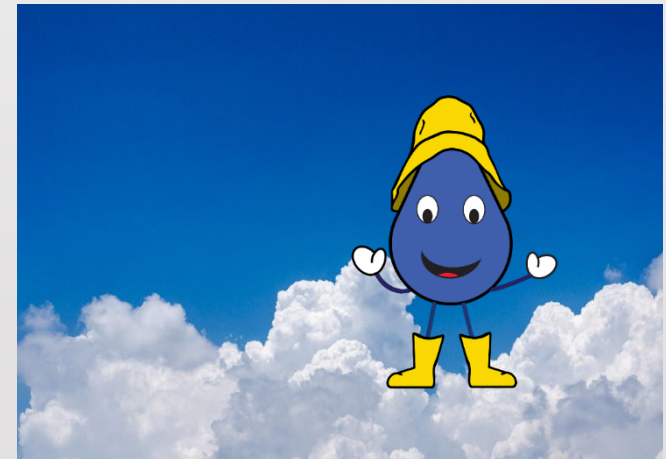
❖ *Pump It Up Engineering Design*

➤ *Riparian Habitat Exploration*

❖ *3D Learning and Systems Thinking*

### **APW provided:**

- ✓ 27 teachers
- ✓ 3,710 students
- ✓ 203 combined hours of PD



## Task 2 – Two-day Academy

# Exploring the Colorado STEM Academy

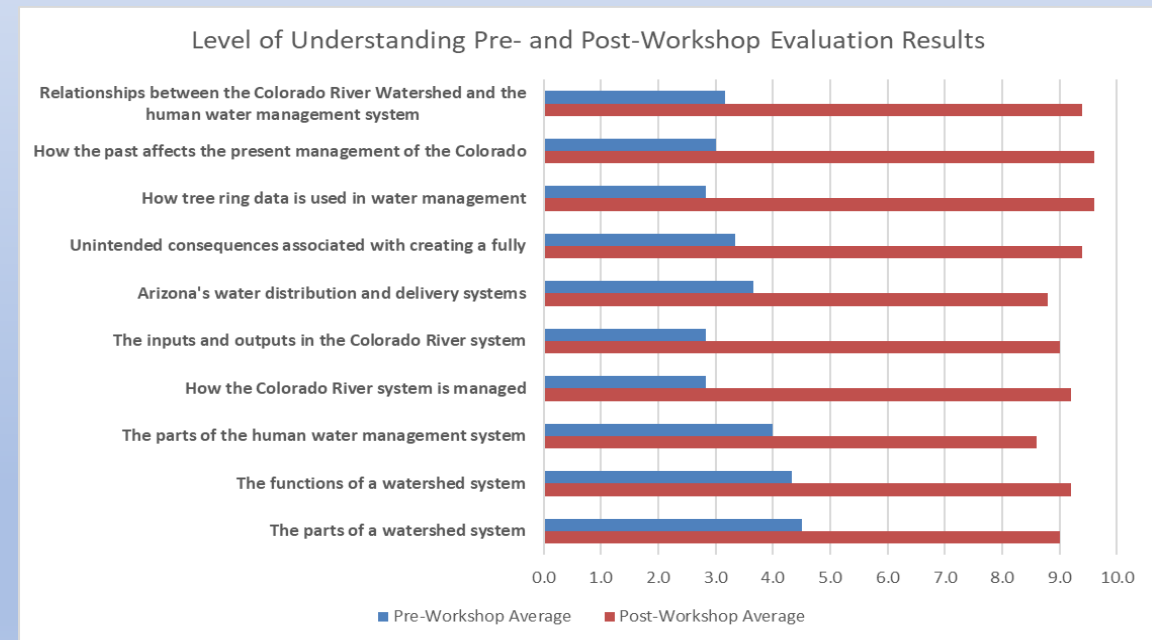
### APW provided:

- ✓ 18 middle and high school teachers
  - ✓ 1,847 students
    - ✓ 234 combined hours of virtual & in-person PD



# Teacher knowledge gain

- ✓ Excellent assessment results!
- ✓ Knowledge gains increased by leaps and bounds!



# *Exploring the Colorado STEM Academy*

## Engineering Design

### CAP Canal

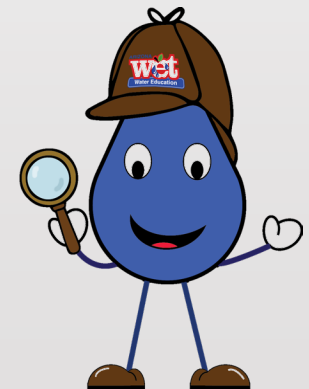


# Task 3 – One-day Workshops

## *Water Festival Teacher Workshops*

### **APW provided:**

- ✓ 342 fourth-grade teachers who report teaching
- ✓ 10,871 students
- ✓ 2,394 combined hours of virtual PD





## III. Direct Student Outreach

- *Water Scene Investigation*
- *School Water Audit*
- *Pump It Up Engineering Design*
- *Wonders of Our World Aqua STEM Unit*
  - Groundwater System
  - Riparian Habitat Exploration

# Task 4 - Water Scene Investigation



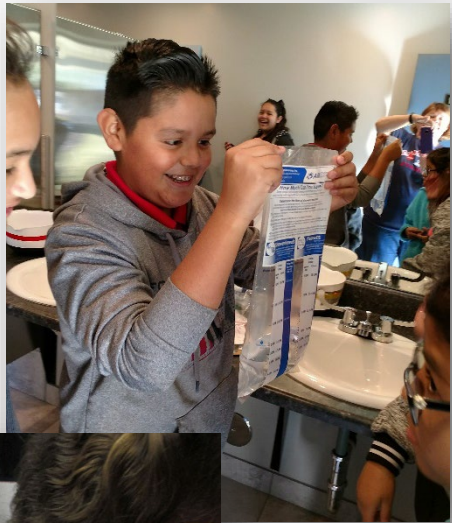
## APW provided:

- ✓ 19 sixth-grade classes
  - ✓ 538 students
  - ✓ 38 combined instructional hours
  - ✓ 428,202 estimated GPY savings





School Water Audit Program



**APW provided:**

- ✓ 1 sixth-grade class
- ✓ 27 students
  - ✓ 78 aerators changed
  - ✓ 2,373,290 estimated GPY savings
  - ✓ \$4,500

# Task 5 – Engineering Design

## *Pump It Up - CAP*



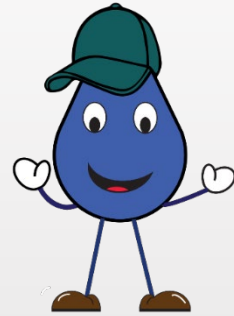
### **APW provided:**

- ✓ 18 Teachers
- ✓ 1,847 students
- ✓ 234 hours direct instructional hours



# Task 6 – Groundwater System & Riparian Areas

## Groundwater System



### APW provided:

- ✓ 49 classes
  - ✓ 1,215 students
  - ✓ 37 volunteers
  - ✓ 187 volunteer hours



# Groundwater Concepts

- ◆ Arizona's unique hydrological cycle and its impact on groundwater
- ◆ The components and composition of the groundwater system
- ◆ How water moves through diverse substates within the ground
- ◆ Key terms: overdraft, subsidence, safe-yield, recharge, discharge
- ◆ The importance of groundwater and impacts of human use



# Active Engagement in the classroom with our groundwater lessons!



# Riparian Habitat Exploration



## APW provided:

- ✓ 11 classes
  - ✓ 250 students
  - ✓ 37 volunteer mentor scientists

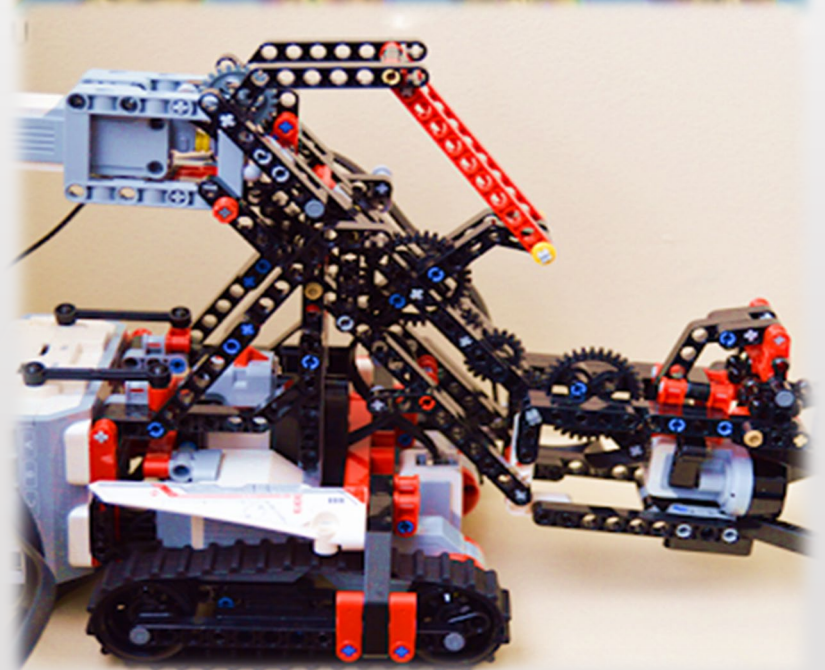


# Why support the APW?

- ✓ Students don't get exposed to these subjects in their regular curriculum.
- ✓ It provides them real world and relevant activities to support them now and, in the future.
- ✓ Our units are STEM and Project Based which drives a deeper level of learning and understanding.
- ✓ It saves schools water and real money!
- ✓ It saves groundwater!
- ✓ Changing and improving to meet students needs...

# New Programs for 2022-23 School Year

- ❖ **Groundwater Video Lessons**
  - 9 Video lessons
- ❖ **Arizona Agricultural Irrigation Lessons**
  - *Analyzing the Cost of Water in Food*
  - *Designing Water Irrigation Models*
  - *Agri-botics: Precision Agriculture*



**Thank you for your  
continuing support!**



**Any Questions?**



# Contact Information

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Maricopa County



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COLLEGE OF AGRICULTURE & LIFE SCIENCES  
**WATER RESOURCES  
RESEARCH CENTER**