AGES 11–14 · TEACHER PAGE

Water: a resource to save

Pupils measure the water used by the MAVA, compare it with conventional watering, then suggest savings for the school.



4 weeks of readings, then 2 sessions of 55 min | MAVA : HYDRO SLIM

KEY QUESTION How much water does it take to grow a lettuce?

OBJECTIVES

1. Measure the water used by the MAVA over 4 weeks.
2. Calculate use per plant and per kilogram harvested.
3. Compare with conventional watering and propose ways to save water.

MATERIALS

- The MAVA HYDRO or SLIM, with a level mark on the reservoir
- A graduated bucket or jug, kitchen scales
- A graduated watering can and a bed or pots of the same plant
- Calculator, pupil sheet

CURRICULUM LINKS

NGSS	**MS-ESS3-3**: Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
IB MYP SCIENCES	Criterion **D** (Reflecting on the impacts of science)
ECO-SCHOOLS	'Water' theme

LESSON STEPS

1 **Ask** 15 min	Morocco faces repeated droughts. 'How much water does it take to grow a lettuce?' Each pupil makes an estimate.
2 **Measure** 4 weeks	At each top-up, record the volume added to return to the mark, and weigh each harvest. Alongside, measure the water poured from a can onto a bed of the same plant.
3 **Calculate** 30 min	Litres per plant per week, litres per kilogram harvested, for both methods. Difference as a percentage.
4 **Act** 40 min	Why does recirculating hydroponics use less? Water returns to the reservoir; it is only lost through transpiration and evaporation. Write three water-saving proposals for the school.

ASSESS

Correct calculations with units, and a reasoned conclusion that discusses the limits of the measurements.

VOCABULARY

water use, recirculation, evaporation, transpiration, resource, water footprint

EXTENSION

Compare with a MAVA OLLA: the volume poured into the ollas each week.

AGES 11–14 · PUPIL SHEET

Water: a resource to save

NAME _____ CLASS _____ DATE _____

MY ESTIMATE BEFORE MEASURING (L PER LETTUCE) _____ PLANT STUDIED _____

1 Each week, record the water added and the harvests.

Week	Water added to MAVA (L)	MAVA harvest (g)	Watering can (L)	Control harvest (g)
1				
2				
3				
4				
Total				

2 Calculate.

Water per kilo = litres of water ÷ kilograms harvested. Saving = (control − MAVA) ÷ control × 100.

MAVA _____ L/kg

CONTROL _____ L/kg

SAVING _____ %

3 Why does the MAVA use less water?

_____

_____

4 What are the limits of our measurements?

_____

_____

5 Three proposals to save water at school

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