

STUDENT WORKSHEET

COULD MARK WATNEY HAVE ACTUALLY GROWN PLANTS ON THE SMALL AMOUNT OF WATER PROVIDED?

MATERIALS

- 3 Sweet corn seeds
- Soil
- 3 One-liter plastic soda bottles, with tops removed giving about 25-cm depth
- Bucket of soil (this will be on the front island)
- 3 Saucers (e.g. aluminum pie plates) on which to place containers to catch drained water
- 1 Volumetric cylinder to measure water volume.
- Balance to weigh pots with capacity up to ~2 kg (this will be located on back counter of lab)
- Sunny location to place pots (keep them in your designated place under the grow lights)

OBJECTIVE: Test growth of plants when given different amounts of water

PROCEDURES:

1. *Fill* containers with dry soil to 20 cm with gently packed soil.
2. Sow three seeds at 3 cm depth.
3. *Add* water to each pot according to the treatment (e.g. 15, 30, 90 milliliters)
4. *Weigh* and *record* containers to obtain initial weight
6. Every 5 days *record* observations on plant height, leaf length and color, and roots.
7. Also, on each of these days *weigh* and *record* container weight.
8. *Calculate* the amount of water lost and add water to pot to return each container to initial weight.

EVIDENCE - Data

15 MILLILITERS WATER ADDED

DATE	Weight	Water Added	Shoot Length	Shoot & Root Observations
Initial		15	0	0

30 MILLILITERS WATER ADDED

DATE	Weight	Water Added	Shoot #1 Length	Shoot & Root Observations
Initial		30	0	0

90 MILLILITERS WATER ADDED

DATE	Weight	Water Added	Shoot #1 Length	Shoot & Root Observations
Initial		90	0	0

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QUESTION: Could Mark Watney have actually grown plants on the small amount of water provided?

CLAIM: Mark Watney could have or Could not have grown plants on the small amount of water provided. (*Circle either "could" or "Could not"*)

EVIDENCE:

REASONING:

