



FULL TANK!

An easy and fun game about water.

Suggested grades: For students from grades 3 to 6.

Time: 15-20 minutes (or till someone wins)

Number of players: 2 to 6

FULL TANK!

Introduction

"Full Tank!" is a fun game developed for children which addresses the issue of water usage and wastage in daily life. The bedrock of any human settlement in the world is fresh water. There has been an increasing trend of losing this precious natural resource. Through this game, we hope to raise awareness about water as an essential resource which needs to be conserved. The game is an attempt (1) to expose children to an array of activities that put pressure on water resources, (2) to emphasise that water, though renewable can deplete and much of daily life is inherently connected to availability of water and (3) provide comparisons between actions that are water-conserving and water-wasting.

About the game

- The game is played using the 'water tank scale' board (page 3) and water activity cards (pages 4-7).**
- The markings on the tank scale board depict the water level in the tank. The water activity cards provide information on various human activities and the associated water usage and wastage.**
- Players can choose any small object as pawns/ markers to play.**
- The activity is to be supervised by a teacher. Any new water activity cards made by students should be approved by the teacher before using them in the game.**

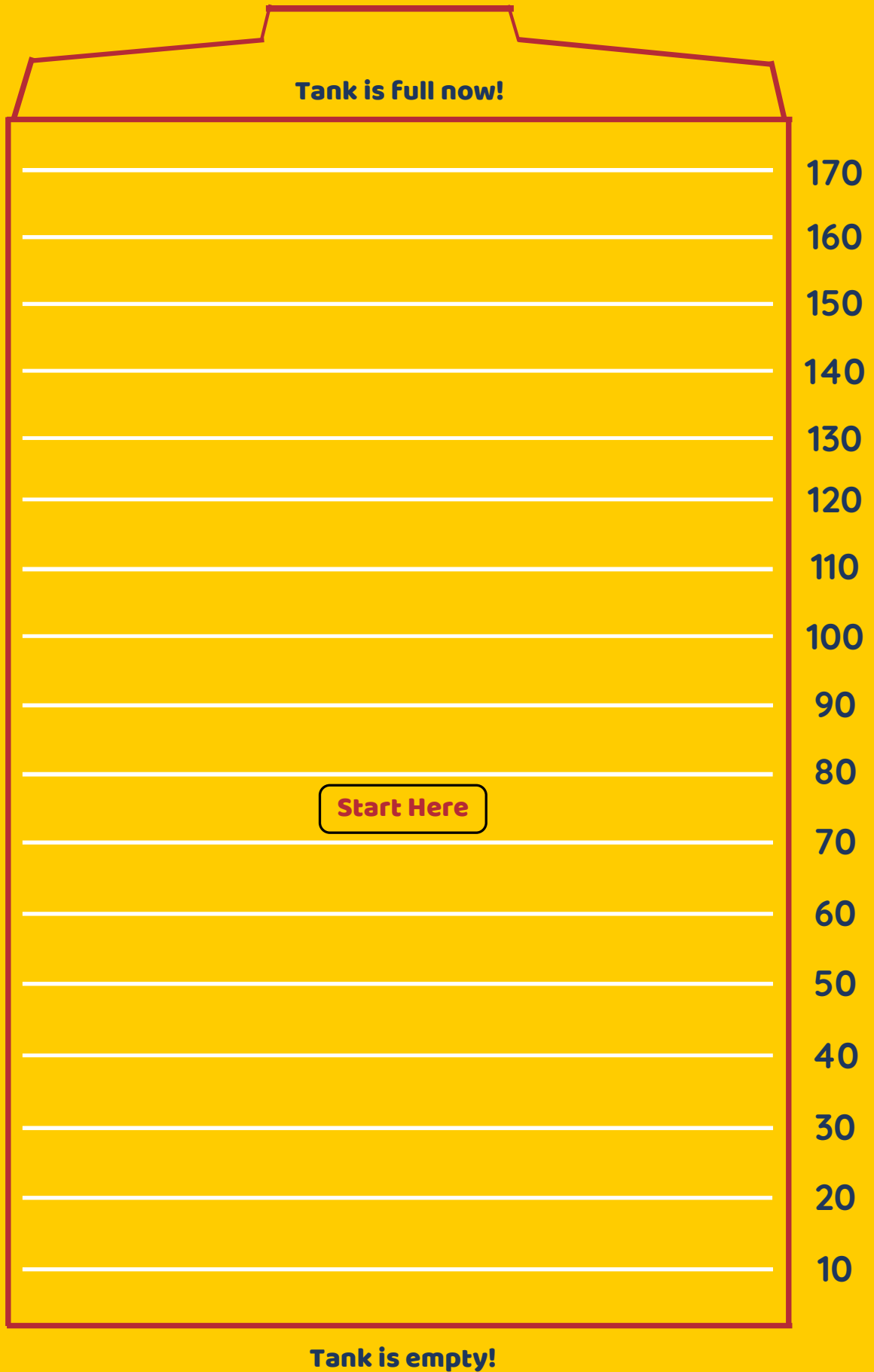
Instructions

- 01** Players start by keeping their markers at the 'Start' position.
- 02** All the water activity cards are to be shuffled & placed in a deck.
- 03** Players pick water activity cards in turns and follow the instructions written on it.
- 04** Players who reach level zero are out of the game. Player who reaches the "Full Tank" first, wins the game.
- 05** Game finishes when a player wins or all players hit bottom '0'.

Make your own water cards!

- Students can create new water activity cards.
- In the new card, it is mandatory to write an activity that uses water directly or indirectly.
- The card should feature the quantity of water either consumed or saved. This number is only meant to be indicative of rise/fall in water.
- Students and teachers can work together to create new cards. More cards, more fun!





Construction

In Rainy Season

30 Ltr

Rise

This helps to reduce pressure on existing water resources.

Cleaning Floors

Using Bucket

15 Ltr

Rise

Using bucket helps to regulate amount of water used.

Cleaning Floors

Using Pipe

20 Ltr

Fall

Continuous flowing water from pipes leads to unregulated use of water.

Washing Utensils

Using Bucket

10 Ltr

Rise

Using bucket helps to regulate amount of water used.

Washing Utensils

Running Tap

15 Ltr

Fall

Continuously flowing water from taps leads to unregulated use of water.

Washing Clothes

Running Tap

20 Ltr

Fall

Continuously flowing water from taps leads to unregulated use of water.

Washing Clothes

Using Bucket

5 Ltr

Rise

Using bucket helps to regulate amount of water used.

Cleaning Balcony

Using Pipe

15 Ltr

Fall

Continuously flowing water from pipes leads to unregulated use of water.

Cleaning Balcony

Using Cloth

15 Ltr

Rise

Using cloth and bucket helps to regulate amount of water used.

Water Harvesting

Harvesting + Use

10 Ltr

Rise

This helps to reduce pressure on existing water resources.

Wet Holi

Using Water

15 Ltr

Fall

Wastage of water is high during the festival.

Construction

In Summer

30 Ltr

Fall

This increases pressure on existing water resources especially in drought areas.

Dry Holi

Only Natural Colours

15 Ltr

Rise

This leads to less usage of water during the festival.

Fixing Taps

No leaks

15 Ltr

Rise

No leaks ensures that water is not wasted due to dripping or leakage.

Maintenance of Wells

Pollutants in Well

25 Ltr

Fall

Pollution of well with waste makes well-water unusable.

Maintenance of Wells

Maintained Properly

25 Ltr

Rise

Proper maintenance of well ensures that well-water remains usable for long time.

Having Bath

Using Bucket

10 Ltr

Rise

Using bucket helps to regulate amount of water used.

Having Bath

Using Shower

10 Ltr

Fall

Continuously flowing water from shower leads to unregulated use of water.

Watering Plants

Using Pipe

10 Ltr

Fall

Continuously flowing water from pipes leads to unregulated use of water.

Watering Plants

In Rainy Season

10 Ltr

Fall

There is no need to waste water for watering plants during monsoons.

Watering Plants

In Afternoon

15 Ltr

Fall

Higher evaporation rates in noon leads to more water wastage.

Installing Water Meter

Faulty Meter

20 Ltr

Fall

Inability to detect anomalies in water consumption and storage leads to water wastage.

Using Water Purifier

Reverse Osmosis Purifier

10 Ltr

Fall

For every litre of water purified, 3 litres of water is wasted in a RO purifier.

Irrigation

Drip Irrigation

20 Ltr

Rise

Water usage can be regulated in drip irrigation.

Cleaning Vegetables

Using RO Water

5 Ltr

Rise

You are reusing otherwise wasted water from a RO purifier.

Buying Bottled Water

When Outside House

10 Ltr

Fall

Manufacturing bottled water is a heavily water-intensive process.

Cleaning Vegetables

Running Tap

5 Ltr

Fall

Continuously flowing water from taps leads to unregulated use of water.

Brushing Teeth

Using a Cup

5 Ltr

Rise

Using a cup helps to regulate amount of water used.

Carrying your own water bottle

When Outside House

10 Ltr

Rise

This minimises our need to purchase bottled water.

Water Harvesting

In Rainy Season

25 Ltr

Rise

Storage aids in having water for later use.

Washing Car

Using Bucket

5 Ltr

Rise

Using bucket helps to regulate amount of water used.

Brushing Teeth

Running Tap

10 Ltr

Fall

Continuously flowing water from taps leads to unregulated use of water.

Washing Car

Using Pipe

15 Ltr

Fall

Continuously flowing water from pipes leads to unregulated use of water.

Maintenance of Taps and Pipes

Leaks in Taps/Pipes

20 Ltr

Fall

A lot of water is wasted due to leaking and dripping taps and pipes.

Gardening

Using Sprinklers

10 Ltr

Rise

Using sprinklers can reduce the amount of water used for watering the lawns and plants.

Gardening

Planting Drought Resistant plants

5 Ltr

Rise

Drought-resistant plants require much less watering.



Background and Rationale

Motivation

The Environmental Sciences textbooks of the Maharashtra State Board cover a range of topics related to natural resources and the dependency of human beings on these. Air, water, natural gas and oil, flora and fauna, all find mention in the curriculum. While the chapters cover these themes at a broad level, there is scope to introduce the same issues using more locally relevant examples. The game "Full Tank" is an attempt to introduce the issues related to water conservation in the surroundings through play. Water forms a very important topic in the Environmental Sciences textbooks from grades 4 to 9. Sub-topics deal with water in various scenarios of natural, public and industrial usage along with its consumption and associated impacts. The game tries to bring to the fore the small actions by us that either lead to water wastage or water conservation. In the game, students need to become aware of their surroundings and identify ways in which water is being wasted or conserved. As the game is played, it is hoped over time, students will realise that these small conservation efforts when implemented at the community level contributes significantly in safeguarding this life-sustaining natural resource.

Rationale behind the design of the game

Research has often highlighted the importance of play and games in learning (Granic, Lobel & Engels, 2014; Cooper, 2014). Moreover, when interacting with young children, play-based (Vygotsky, 1978) interventions/ activities and games tend to captivate them and direct their attention to the concerned issues (Malone, 1981; Sedig, 2008). Thus, the game "Full Tank" also attempts to discuss a relevant issue of our times (water conservation) in a simple playful manner. Tanks are common storage options in every household. The idea behind having a tank depicted as a scale, is to indicate that water though renewable is something that can become scarce and at times exhausted. The scale tries to show that various human activities, as depicted in the 'Water Activity Cards' can have positive or negative effects on the water level. Of course, in reality, water conservation is not so simplistic and easy to implement. There are multiple factors which affect water usage. However, this game aims to essentially raise awareness about the issue and depict the contrast between actions that lead to water wastage or conservation.

The game uses 'cards' as a physical medium to transact the play. It is a simple design which has the potential to deliver information in pieces. The most important feature of the game is that there is an option to make your own 'Water Activity Card', so that players can bring in their own experiences and add it to the game, thereby enhancing the scope of the game. Some of the possible skills children may develop by undertaking this card-making exercise include, observation of surroundings, problem identification, looking at issues from multiple perspectives, communication and collaboration.

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India Water Portal Website: <https://www.indiawaterportal.org>

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