

## 1. Introduction

Water touches every aspect of our life. Currently, India is in a crisis over quality, access and availability of this basic resource. Proper awareness and empowerment of communities with knowledge, understanding, and real-time information on the status and quality of water can provide some realistic solutions. Schools and children can play a critical role here. The textbooks already have lessons on water and problems around this resource. However, the challenge is to bring pedagogic changes in school curriculum so that meaningful water based productive work and activities can be linked with regular subjects teaching. This will involve integration of teaching-learning with more hands-on and social engagement activities, creation of new knowledge, skills and participatory values.

### List of activities

1. What are the immediate sources of water at home ?
2. What are the different uses of water at home ?
3. What are all the uses of water in village and the area ? This can be broken into domestic, agriculture , commercial etc
4. Make a historical time line of the uses of water putting in new uses as and when they started .
5. What are the source of water for these uses ? Near sources and far off sources ?
6. Make a historical time line of these sources putting in new ones as and when they started
7. Put as much information as possible on maps
8. Who builds and manages the various sources ? Role of state govt , local govt , communities
9. Which are the various govt departments and agencies dealing with water and what are their specific roles ?
10. What are the sources / technologies which are decreasing or have become defunct ?
11. What are the new water purifying technologies appearing in the area ? Who makes and manages them ?
12. Collect water related stories and poems and songs
13. Is water purchased or is there a water tax ? What are the prices ?
14. How do you measure rainfall and what does it mean ?
15. What is hardness of water and practical significance?
16. What is ph and its various practical significance?
17. What is fluorosis?
18. Basics of chemistry and relating it to fluoride
19. Basics of physiology and relating it to what fluoride does
20. Basics of geology and relating to the sources of fluoride
21. What is the science behind its removal by various filters ?
22. How many fluorosis cases are there in the village –dental and skeletal ?
23. Who has measured fluoride in water ? When ? Can you get the data ?
24. What are the other sources of fluoride ?
25. What are foods which can mitigate fluoride ? what are calcium and Vitamin C rich local food

### Measure , Make and Do

1. Measure the home use of water for different purposes

2. Approximately measure water use in agriculture for different crops
3. Make rain gauge
4. Measure rainfall through the year and plot it
5. Get old rainfall data and compare
6. Test water from different sources for fluoride, hardness, ph on a regular basis
7. Calculate rainwater harvesting potential
8. Make simple rainwater harvesting structures
9. Make simple water filters
10. De regular preliminary monitoring of dental and skeletal fluorosis of everyone.
11. Monitor the level of ground water continuously
12. Get old ground water data and compare
13. Propagate the growing of calcium and Vit C rich food and monitor the increase of their intake
14. Share all findings and measurements on a regular basis with community, local govt, other related govt agencies

Other possible ideas:

What are potable sources of water? Which water sources to households are potable?

How are potable sources different from non-potable sources of water? Identify factors that help indicate this difference.

Sample five different sources of potable water. Differentiate between them based on taste, odour, colour and clarity.

2. One of the questions in the document on curriculum ideas explores traditional/modern ways of converting non-potable water into potable water.

Can you identify some of the most common factors (especially human) that cause wastage of potable water or its contamination? This could again be done at different levels - households, commercial, agricultural etc.

Where does your family's used water go?

What kind of pollutants can be found in the used water that leaves your house?

3. What is the average amount of water used by a child ?

Can you identify some places/ways in which you can reduce your personal use of water?

4. Do you know families where women walk for water?

Can you trace the path that these women take to get water?

How much water does each woman carry on one trip?

How long does it take for a woman to make this trip?

What would the women do in that time if they were not using it to fetch water?

5. encourage students to think of/identify their indirect dependencies on water through other living organisms.

So for example, identify (non-agricultural) plant and (domesticated as well as others) animal species that depend on water. Can you draw water-webs, for eg: water trough - water for cattle - cow milk (~80%) - humans.

How much water do humans need in a day? Why? What are the different sources through which we replenish and lose water from our bodies (for example, about 20% of the water in our body comes from the food we eat, or how much water do we lose in sweat?).

Can one identify such local food sources that are rich in water?

How does the seasonality of the flowering/fruiting patterns of these local food sources match our need for water?

9. What is a watershed? Define it in your own words.

Are we part of a local watershed?

Can we map the area of a local watershed?

10. Who owns water?

Are there private and public sources of water? How are they similar (for eg in source)? And how are they different (in people,ways and terms of usage)?

Do states and countries own water?

Can we identify sources that form the local water commons?

What factors help replenish the water commons?