


The background of the slide features a light gray gradient. In the upper left and lower right corners, there are several realistic water droplets of various sizes, some with highlights and shadows. Faintly visible in the center background is a globe showing the outlines of continents.

# WATER

Why we care about such a thing



# WHAT DID YOU DO TODAY?


- What was the first thing you did after waking up?
  - How did you get to school?
  - How was water affected your life today?
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# GREATEST ENGINEERING ACHIEVEMENTS OF THE 20<sup>TH</sup> CENTURY

1. ELECTRIFICATION
2. AUTOMOBILE
3. AIRPLANE
4. WATER SUPPLY AND DISTRIBUTION
5. ELECTRONICS
6. RADIO AND TELEVISION
7. AGRICULTURAL MECHANIZATION
8. COMPUTERS
9. TELEPHONE
10. AIR CONDITIONING AND REFRIGERATION
11. HIGHWAYS
12. SPACECRAFT
13. INTERNET
14. IMAGING
15. HOUSEHOLD APPLIANCES
16. HEALTH TECHNOLOGIES
17. PETROLEUM AND PETROCHEMICAL TECHNOLOGIES
18. LASER AND FIBER OPTICS
19. NUCLEAR TECHNOLOGIES
20. HIGH-PERFORMANCE MATERIALS




# WATER SCARCITY

- Water use has been growing at more than twice the rate of population increase in the last century
  - By 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity
  - By 2025, two-thirds of the world population could be under stress conditions
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# ENGINEERING CHALLENGES OF THE 21<sup>ST</sup> CENTURY

1. ADVANCE PERSONALIZED LEARNING
  2. MAKE SOLAR ENERGY ECONOMICAL
  3. ENHANCE VIRTUAL REALITY
  4. REVERSE-ENGINEER THE BRAIN
  5. ENGINEER BETTER MEDICINES
  6. ADVANCE HEALTH INFORMATICS
  7. RESTORE AND IMPROVE URBAN INFRASTRUCTURE
  8. SECURE CYBERSPACE
  9. **PROVIDE ACCESS TO CLEAN WATER**
  10. PROVIDE ENERGY FROM FUSION
  11. PREVENT NUCLEAR TERROR
  12. MANAGE THE NITROGEN CYCLE
  13. DEVELOP CARBON SEQUESTRATION METHODS
  14. ENGINEER THE TOOLS OF SCIENTIFIC DISCOVERY
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# PROVIDE ACCESS TO CLEAN WATER

- One of 14 grand challenges for engineering in the 21<sup>st</sup> century
  - Today the availability of water for drinking and other uses is a critical problem in many areas of the world
  - Lack of clean water is responsible for more deaths in the world than war
  - About 1 out of every 6 people living today do not have adequate access to water
  - More than double that number lack basic sanitation, for which water is needed
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## THINK ABOUT IT

Every minute, two children under the age of five die because of dirty water they drink, which they walked miles to get.





## WHAT CAN WE DO ABOUT IT?

- As a table, brainstorm all of the ways we use water in a tree map using categories like In a Family, In a City or In Nature
  - On the back of your paper, brainstorm ways that we could help with the water crisis around the world
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