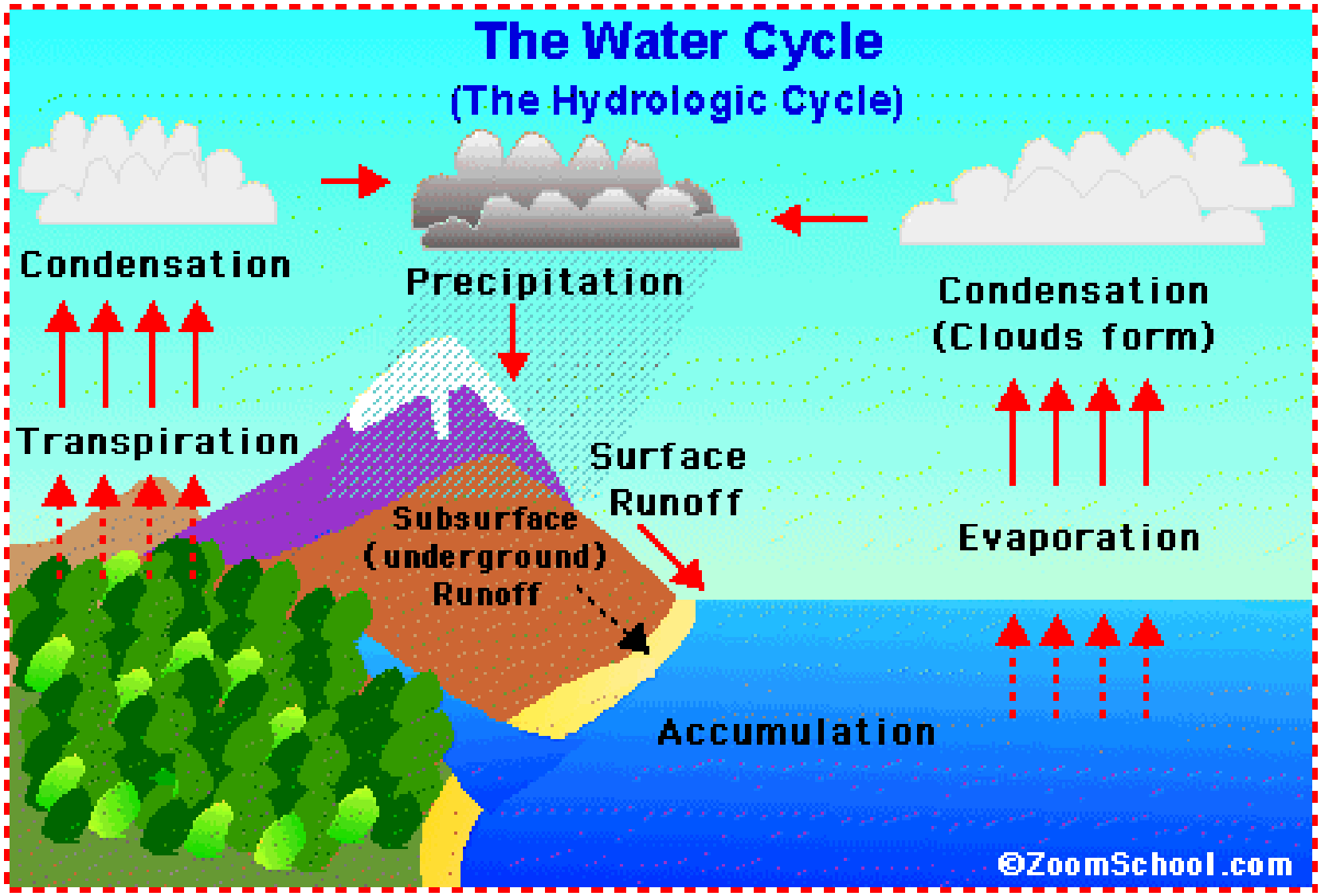
Drinking Water Test Parameters

How much of our planet is water?


The Water Cycle
(The Hydrologic Cycle)
Condensation
Precipitation
Condensation
(Clouds form)
Transpiration
Surface
Runoff
Subsurface
(underground)
Runoff
Evaporation
Accumulation
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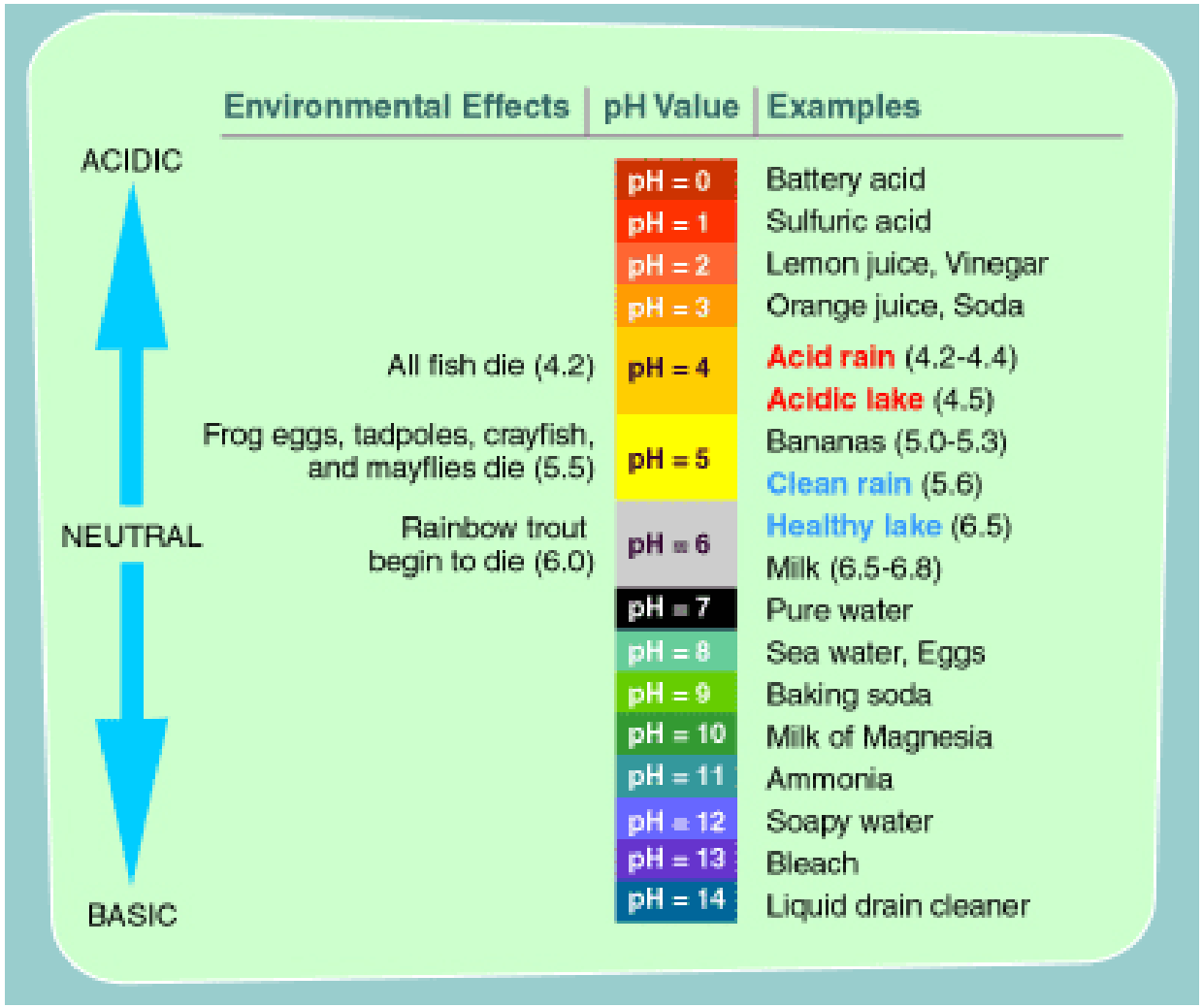
Parameters for Drinking Water Testing

- Hardness
- pH
- Copper
- Iron
- Phosphate
- Chlorine
- Ammonia
- Chromium

Hardness

- Minerals from rocks and soil give water its hardness

pH



- pH is how acidic or basic something is.

Copper

- From pipes and industrial components

Iron

- Enters water from rocks and soil

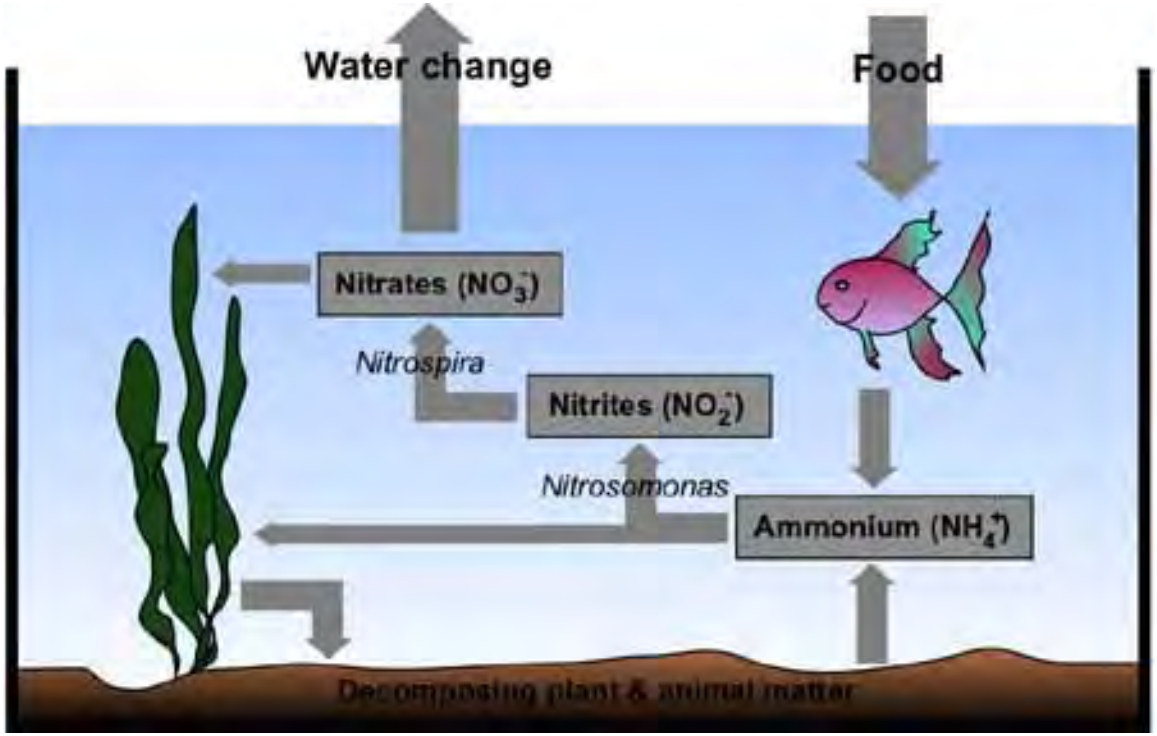
Phosphate

- Found in many detergents
- Stimulates plant growth

Chlorine

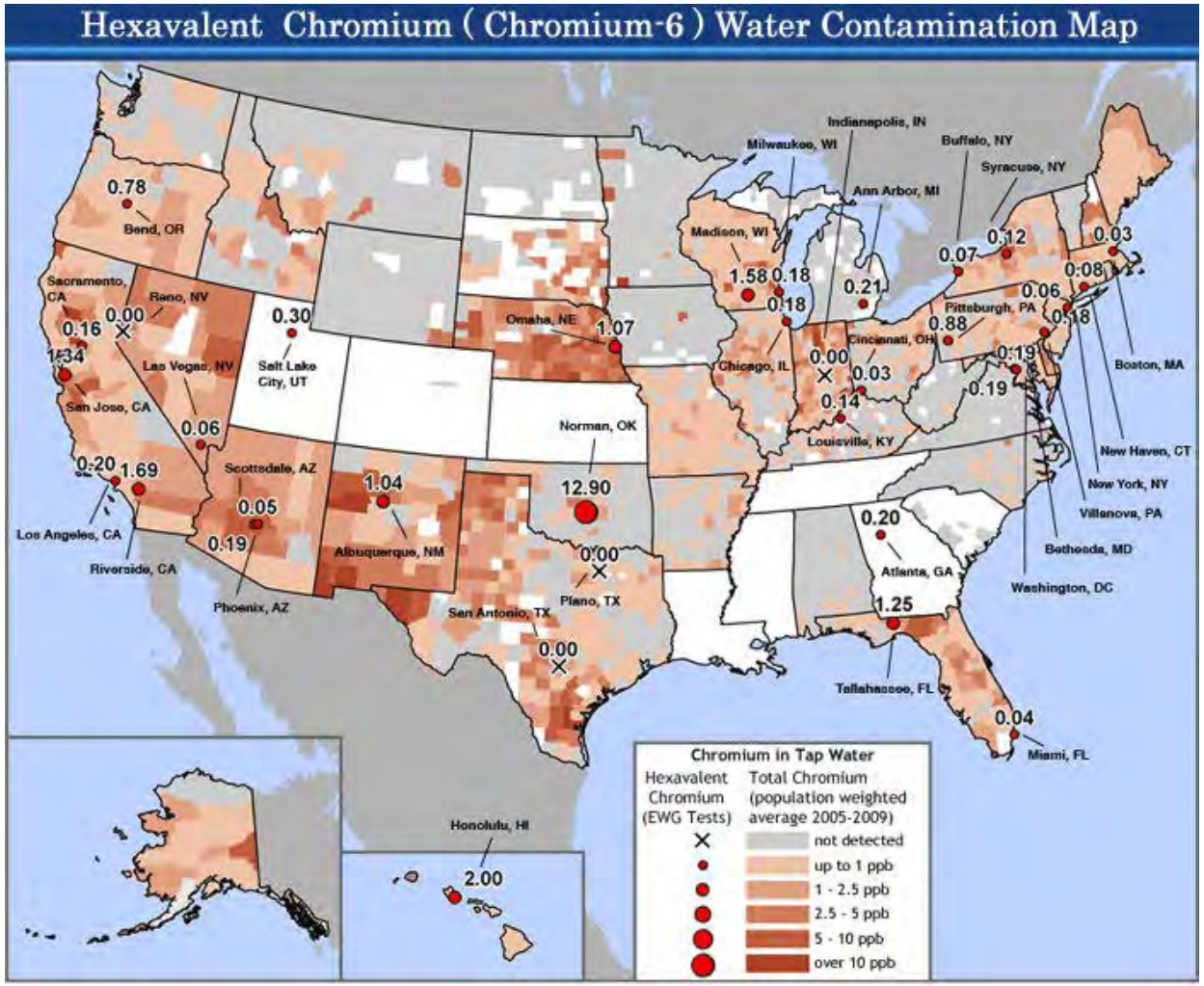
- Used for disinfection

Ammonia



- Fecal matter and decaying vegetation produce ammonia

Chromium



- Can be naturally occurring or the result of industry

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Lesson Title: Drinking Water Testing

Objectives/ SWBAT:
Utilize test kits to quantify contaminant levels of water from multiple sources. Create a profile of NYC municipal water from multiple local sources. Understand the significance of test results with respect to drinking water consumption safety for humans.

Lesson duration: 3 days

Aim: What contaminants are found in NYC water?

Do Now:
List as many potential contaminants to drinking water that you can think of.

Materials:
LaMotte water quality testing kits & pipets
Stopwatches
Water supply
Data worksheet
Computers for poster preparation

Procedure:
Day 1
1. Use powerpoint presentation to demonstrate the limited supply of clean drinking water, and to cover the 8 parameters to be tested on water supplies, with a focus on the source and harmful levels of the contaminant.

2. Break students into groups. They must design their own experiment clarifying which water sources they plan to test, at which times they will collect the sample, and a hypothesis of which types of contaminants they anticipate finding in the water.

3. Review of good technique for sampling water (sample early in morning, fill sample bottle to rim to minimize air contact)

Day 2

1. Do a demo of how the test kits work.

2. Students begin conducting 8 tests on their 2-3 selected water samples. Data collection sheet with normal ranges included below.

Day 3:

1. Students continue the water testing from previous day.

2. Data is displayed as a big spreadsheet on the board. There is a class discussion to analyze the results. Students must prepare a report of the experiment for homework.

Homework:

Students will write a report in scientific format.

Name:_____ Date: _____

Drinking Water Data Collection

Parameter:	Normal range:	Source:_____ Test site 1:	Source: _____ Test site 2:
Hardness	5-50ppm		
pH	6.5-8.2		
Copper	<0.03ppm		
Iron	<0.2ppm		

Phosphate	<0.03ppm		
Chlorine	<0.5ppm		
Ammonia	<1ppm		
Chromium	<0.5ppm		

Notes: (i.e. how was water collected, notes on appearance, etc)

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