Name:

Grade: Section:

AWARENESS CALCULATOR

Encircle the letter that best answers the questions.

1. Are you knowledgeable about water pollution?
a. Yes b. No

2. If yes, on which of the following platforms have you heard about water pollution? Select all that apply:
a. Television
b. Radio
c. Newspaper
d. Internet
e. School
f. Others

3. On a scale of 1-5, 1 being the highest, how bad do you think water pollution is?
a. 1
b. 2
c. 3
d. 4
e. 5

4. How badly do you pollute?
a. Not at all
b. Not very much
c. Decently
d. A little
e. A lot

5. Have you been affected by water pollution?
a. Yes
b. No
c. Not that I know of

6. Do you think water pollution affects your personal health and safety?
a. Yes
b. No
c. I'm not sure

7. On a scale of 1-5, 1 being the highest, how bad do you think water pollution causes sickness?
a. 1 b. 2 c. 3 d. 4 e.5

8. How concerned are you with all types of pollution (soil, air, noise, water)?
a. Extremely concerned
b. Concerned
c. Neutral
d. Unconcerned
e. Extremely unconcerned

9. Are you aware of your country' s laws to reduce water pollution?
a. Yes b. No c. Just a bit

10. Do you believe your government is putting up too much effort, money, and resources to eliminate pollution?
a. No, they are not doing enough
b. No, they can do more
c. Yes, they are
d. No idea

11. Do you believe that addressing environmental pollution should be the most important factor to consider?
a. Yes, that is the most critical issue that must be addressed
b. Yes, it is as critical as a few other concerns
c. Neutral
d. No, there are more pressing matters to address

SCORING INSTRUCTIONS:
For numbers 1, 3-11, compute your overall awareness by giving your answers these corresponding scores: A = 1 point, B = 2 points C = 3 points, D = 4 points, and E = 5 points. For number 2, add 1 point each to each item encircled.

13-16 Points:
Wow! Seems like you're doing your part pretty great!

17-20 Points:
Thank you for trying to do your part!

21-30 Points:
Long way to go, but almost there!

31-40 Points:
You can always do better!

41-46 Points:
It's about time to learn more about water pollution and its effects. You can do it!

AN ODE TO NATURE

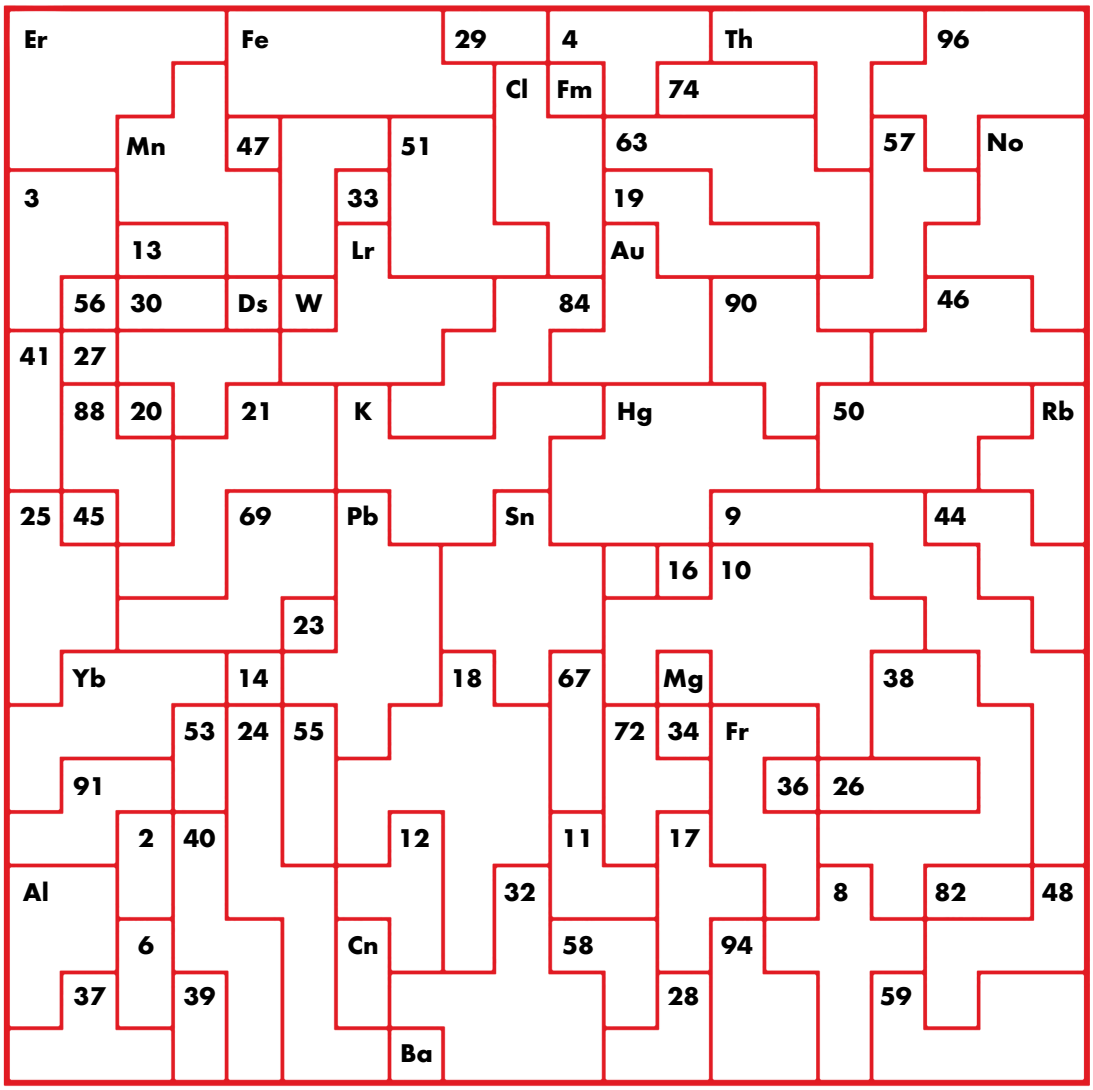
Water pollution develops when water bodies get contaminated as a result of human activity. However, it can also be a result of chemicals being discharged by factories, farms, cars, and other causes of pollution. As a student, what are the ways that you can do to prevent or reduce water pollution? Express your thoughts through a poem. Be creative!

DID YOU KNOW

Humans and many other living things cannot use more than 99 percent of the water on the planet. Only around 1% of the water on Earth is drinkable, and a rise in water pollution can have a significant impact on marine life and habitats. Countries without access to safe drinking water are pushed to drink untreated water, making them vulnerable to water-borne diseases that harm their health.

MYSTERY OF THE ELEMENTS

Answer the questions and fill the shapes with the right colors to reveal the secret image.



Determine the total number of valence electrons of each molecule. Color the shapes in orange.

1. N_2	6. XeF_4
2. SO_2	7. SF_6
3. O_2	8. PCl_5
4. CF_2Cl_2	9. SeF_4
5. N_2F_4	10. NH_3

Identify the total number of atoms in a molecule. Color the shapes in black.

1. $C_{12}H_{22}O_{11}$	6. $B_{10}H_{10}$
2. $C_{15}H_{16}O_2$	7. $C_4H_5N_3O$
3. $C_{15}H_{24}O$	8. $C_{18}H_{36}O$
4. $C_{13}H_{10}O$	9. $C_5H_5N_5O$
5. Cl_2O_7	10. $C_7H_5N_3O_6$

Find the number of carbon atoms in each molecule. Color the shapes in blue.

1. $C_{14}H_{10}Cl_4$	6. $C_{58}H_{118}$
2. C_6H_5	7. $C_{67}H_{136}$
3. $C_{23}H_{32}O_6$	8. $C_{28}H_{46}O$
4. C_2B	9. $C_{39}H_{74}O$
5. $C_{11}H_8N_2$	10. $C_{53}H_{59}O_{30}$

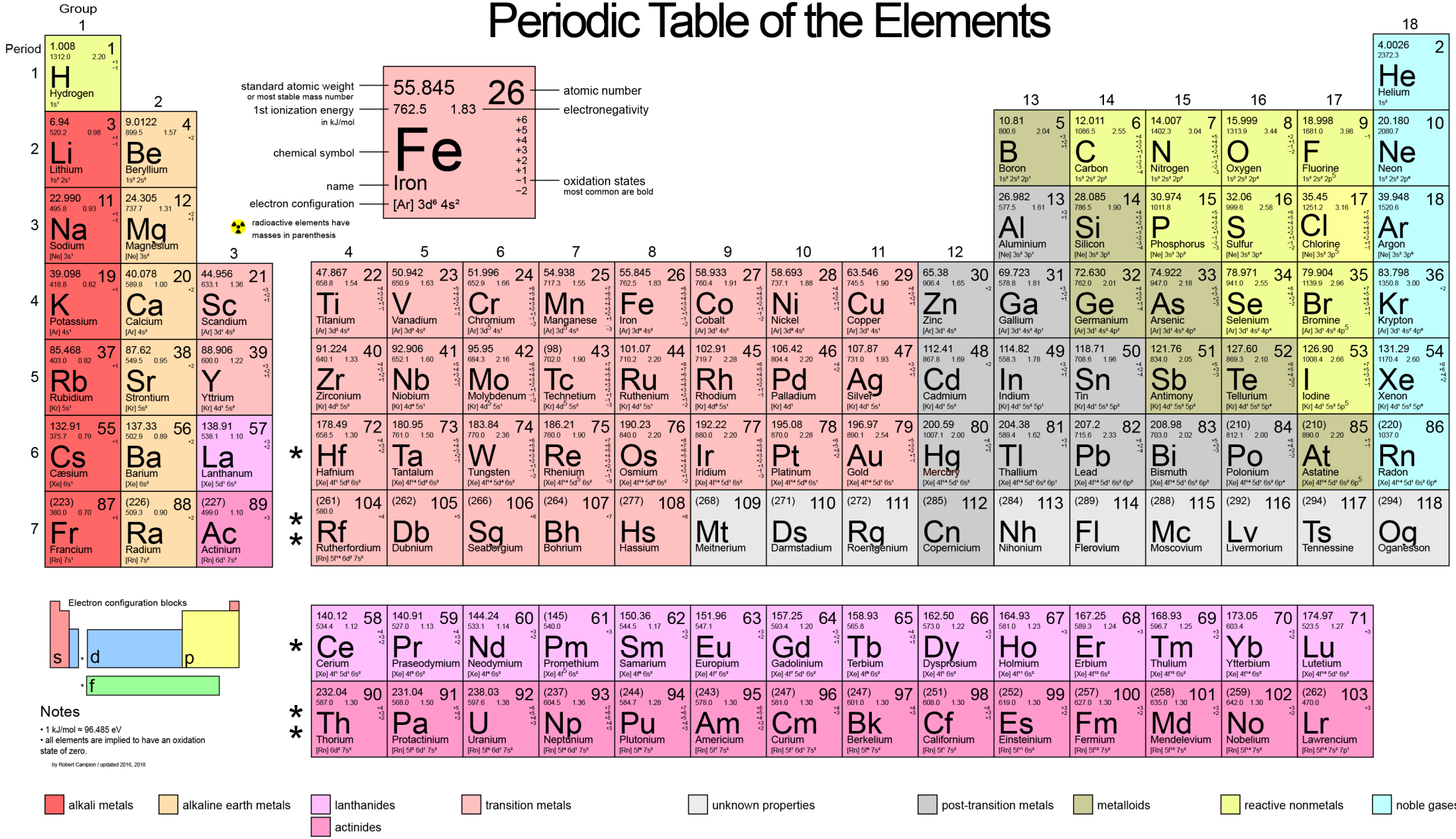
Find the number of hydrogen atom in each molecule. Color the shapes in yellow.

1. $C_{15}H_{17}N$	2. $C_{21}H_{27}NO$
2. $C_{50}H_{74}O_{14}$	7. $C_{60}H_{94}O_{28}$
3. $C_{18}H_{19}N$	8. $C_{59}H_{72}O_{33}$
4. $C_{21}H_{29}NO_8$	9. $C_{50}H_{84}O_{21}$
5. $C_{21}H_{30}O_2$	10. $C_5H_4N_4O_3$

Identify the chemical symbol for each element. Color the shapes in red.

1. Chlorine _____	2. Iron _____	3. Manganese _____	4. Tungsten _____	5. Gold _____
6. Potassium _____	7. Tin _____	8. Magnesium _____	9. Lead _____	10. Mercury _____

Periodic Table of the Elements



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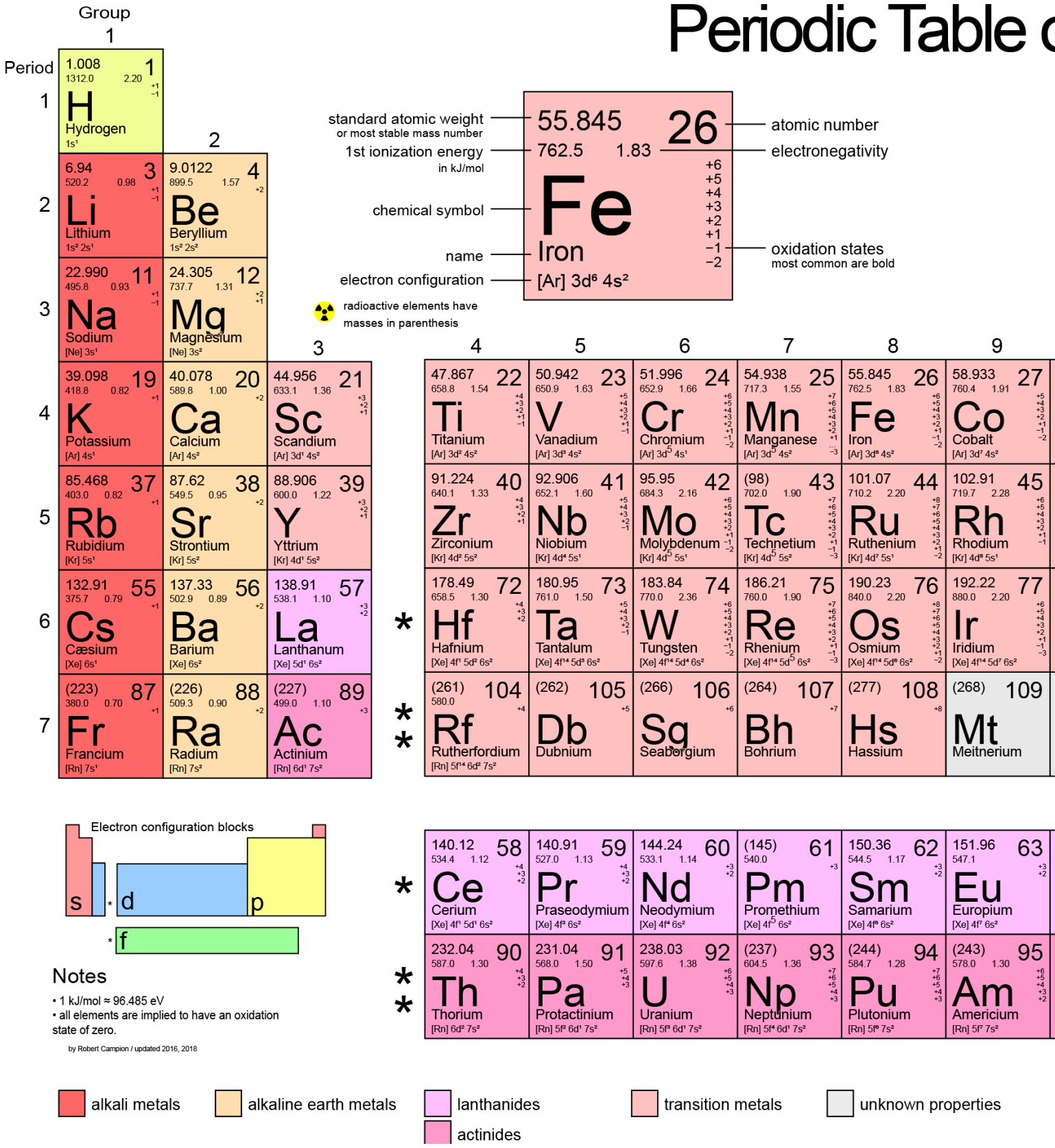
Periodic Table o



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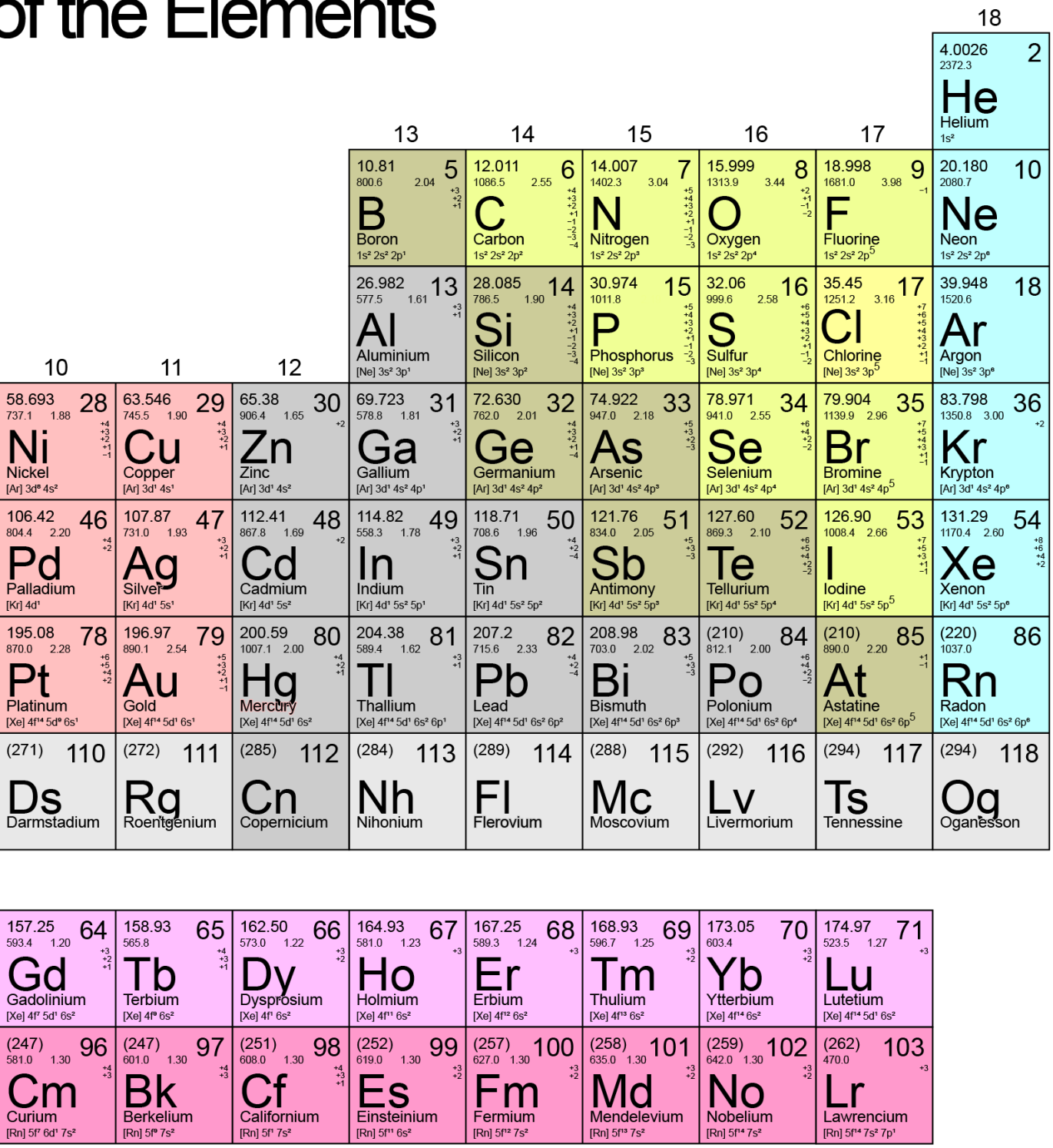
of the Elements



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WATER FILTRATION EXPERIMENT

Materials:

- 2 liters of "dirty" natural water
- 3 litres of clean water
- 1 two-litre plastic soda bottle with cap
- 2 two-litre plastic soda bottles (one with its bottom cut off and one with the top cut off)
- 1 large beaker
- 2 tablespoons of alum
- 1½ cups fine sand
- 1½ cups coarse sand
- 1 cup small pebbles
- 1 coffee filter
- 1 rubber band
- Spoon

Procedure:

1. Fill the bottle with dirty water
2. Shake the bottle vigorously for 30 seconds. Pour the water back and forth into another bottle about 10 times to continue the aeration process.
3. Pour your aerated water into the bottle with its top cut off.
4. Add 2 tablespoons of alum to the aerated water. Slowly stir for 5 minutes.
5. Allow the water in the container to sit undisturbed. For a total of 20 minutes, observe at five-minute intervals.
6. Construct a filter as follows:
   - 6a. Using a rubber band, secure the coffee filter to the bottle's outside neck. Invert the bottle and place it in a beaker. Fill the bottle halfway with pebbles.
   - 6b. Pour the coarse sand on top of the pebbles.
   - 6c. Pour the fine sand on top of the coarse sand.
   - 6d. Pour 3 litres (or more) of clean drinking water through the filter slowly and carefully to clean it. The water that has passed through the filter should be discarded.
7. After a large amount of sediment has settled on the bottom of the bottle of the dirty water, carefully pour the water through the filter. Collect the filtered water in the beaker or plastic bottle.

Observations:

1. Why do you think it's important to aerate the water?

2. What is the role of the alum powder in clarifying the water?

3. Why is it necessary to put pebbles, coarse sand, and fine sand on your homemade filter?