



TEKS 6.5B: Recognize that a limited number of the many known elements comprise the largest portion of solid Earth, living matter, oceans, and the atmosphere.

## How many elements are there?

- There are more than 100 known elements. More than 90 of them are found in nature on Earth. The others can be produced in laboratories.
- Each element is represented by a chemical symbol and an atomic number as shown in the periodic table on the next slide.



**1. Identify** Look at the periodic table on the next slide. Pick a symbol that you recognize. What element does it represent, and what is the element's atomic number?

*(contd.)*



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The periodic table is an arrangement of elements that shows the pattern of their properties.

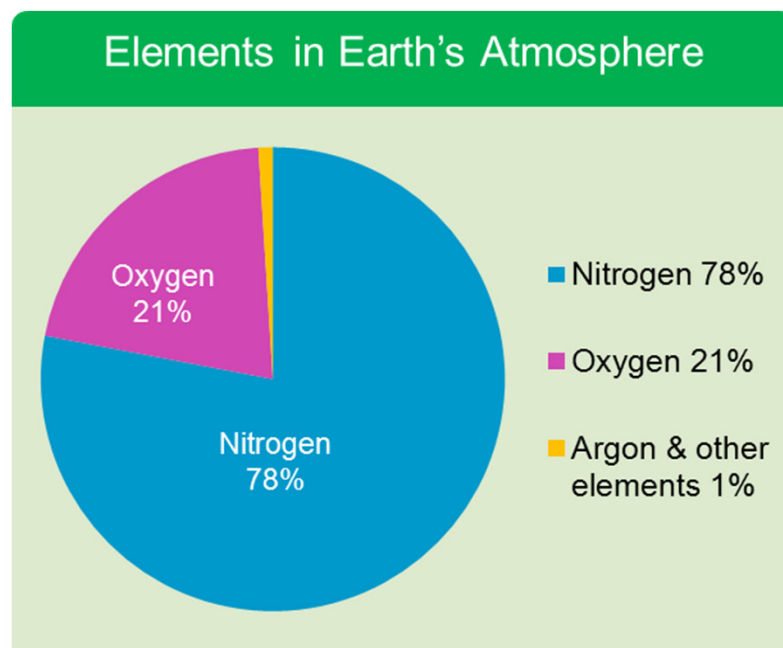
1 H																	2 He
3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
55 Cs	56 Ba	71 Lu	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra	103 Lr	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Cn	113 Uut	114 Uuq	115 Uup	116 Uuh		118 Uuo
		57 La	58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb		
		89 Ac	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No		



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# What element is most abundant in the Earth's Atmosphere?

- In Earth's atmosphere, the most common element is nitrogen. The next most common is oxygen, which is an important part of respiration for humans, animals and other living things.

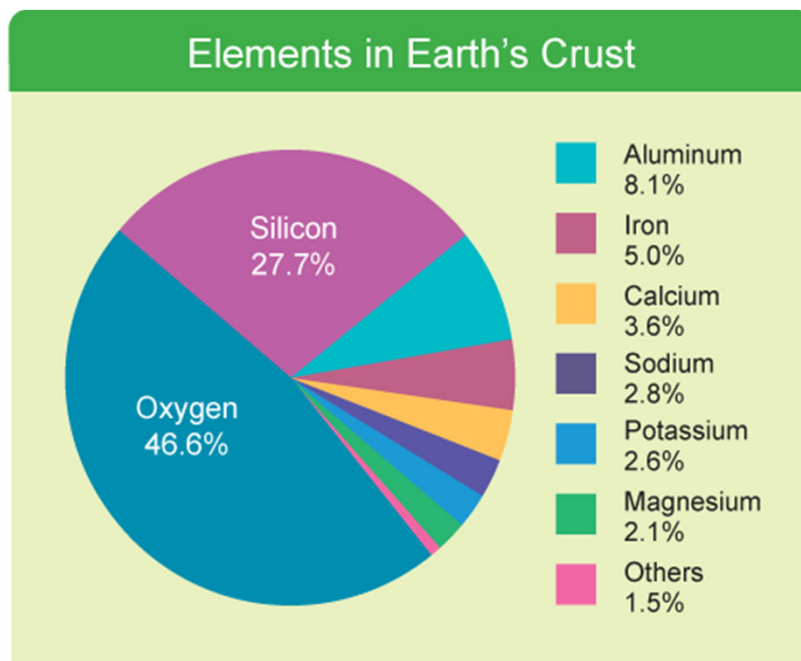




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## Which elements are most common on Earth?

- In Earth's crust, the most common element is oxygen. The next most common is silicon, which is an important part of most rocks.

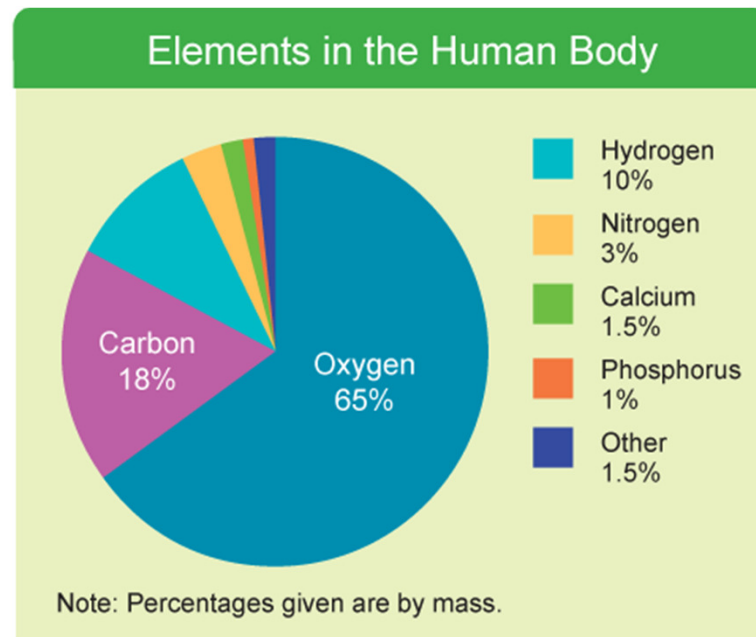


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- Many compounds in living things include carbon. Hydrogen and oxygen are also important parts of these compounds. Sulfur and phosphorus occur in smaller amounts.
- Not all organisms have the same chemical composition. The graph shows the elements found in the human body.



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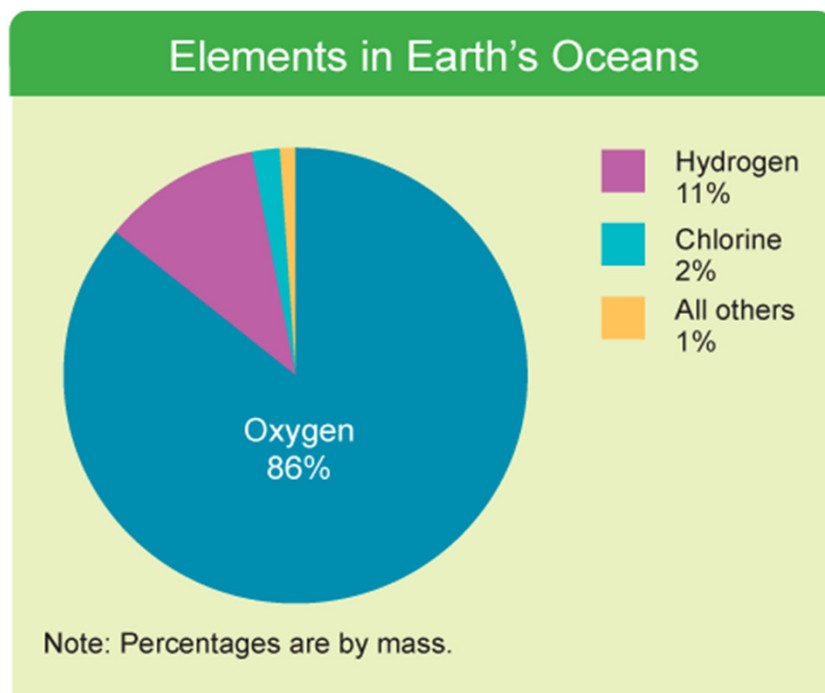
**2. Interpret Graphs** What total percentage of the human body is made up of oxygen, carbon, and hydrogen?

*(contd.)*



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- The composition of Earth's oceans varies from place to place.
- Since the oceans are mostly water, the elements hydrogen and oxygen are the most common.
- Sodium and chlorine are found in the salt in ocean water.



***(contd.)***



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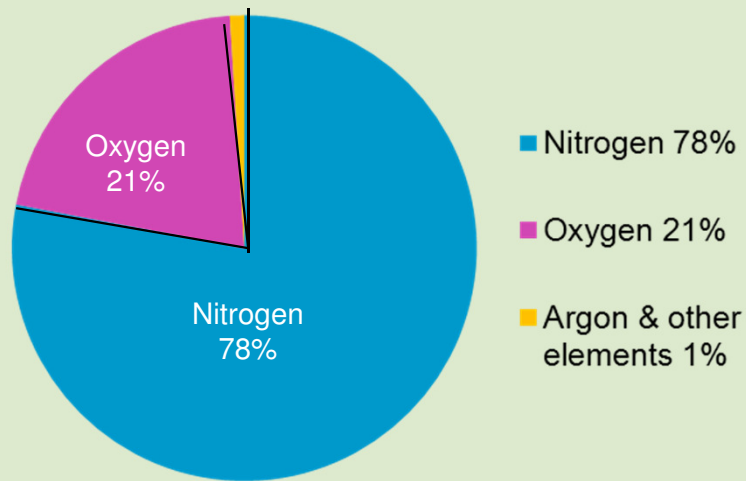
- Earth's atmosphere is made up of a combination of gases, including nitrogen, oxygen, and carbon dioxide.
- Nitrogen and oxygen are the most common elements in the atmosphere. They make up almost 99% of the atmosphere by mass.
- Argon makes up most of the rest of the atmosphere.



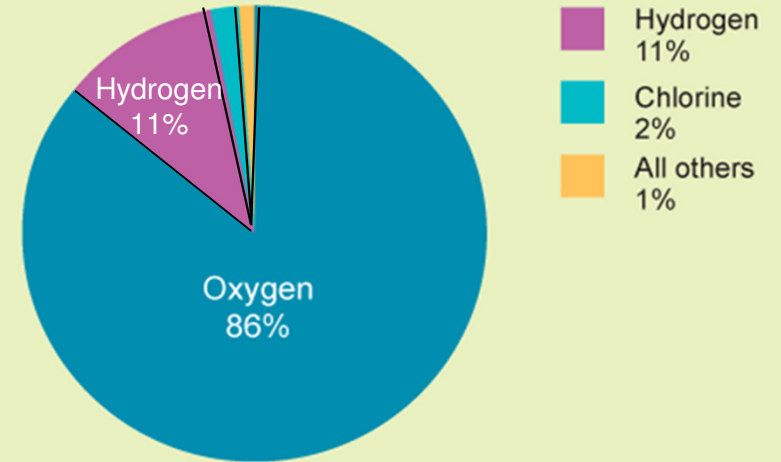
**3. Explain** Why are the compositions of Earth's crust and oceans different?

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### Elements in Earth's Atmosphere

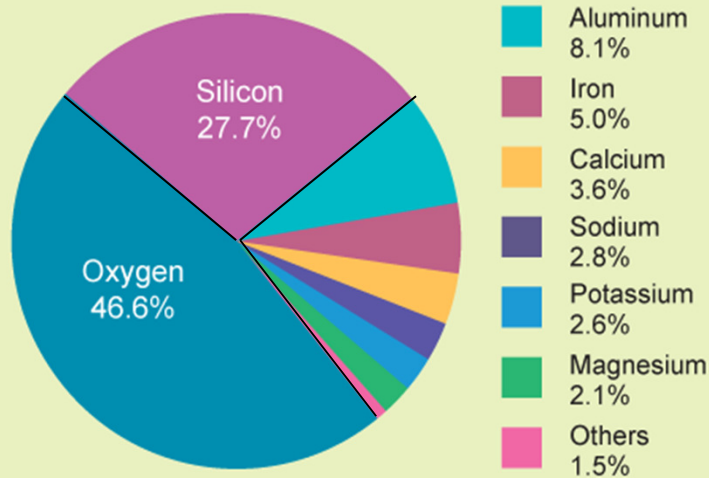


### Elements in Earth's Oceans

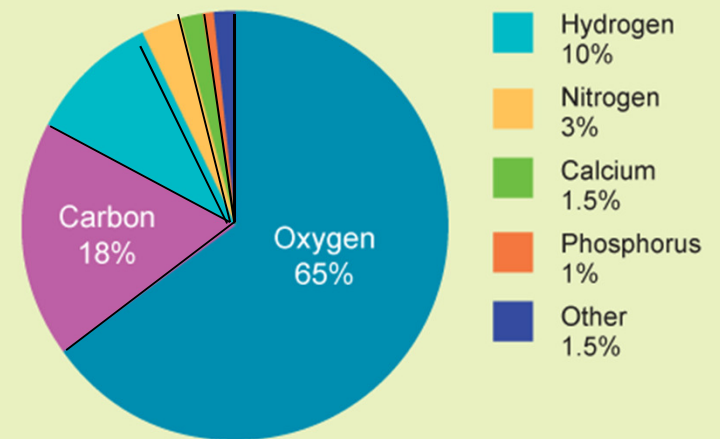


Note: Percentages are by mass.

### Elements in Earth's Crust



### Elements in the Human Body

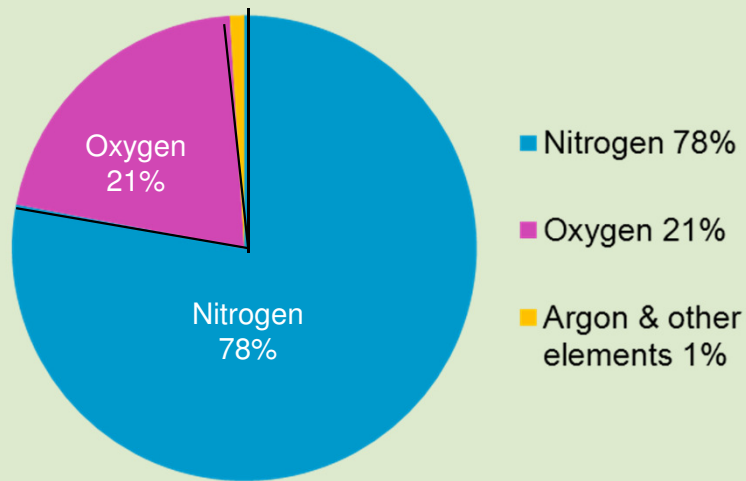


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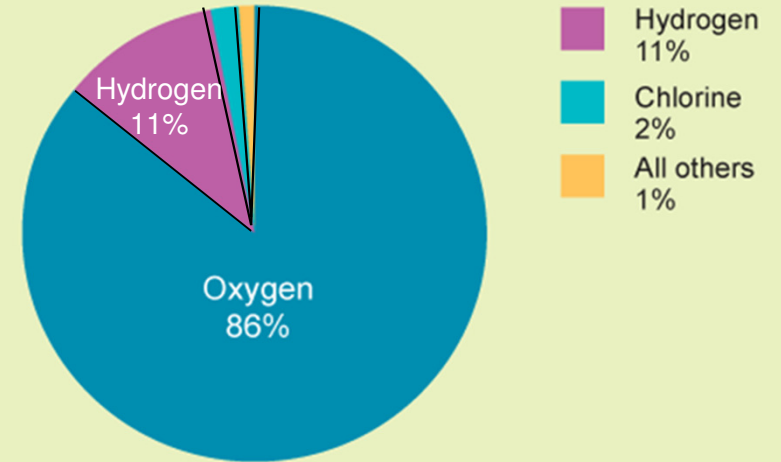


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### Elements in Earth's Atmosphere

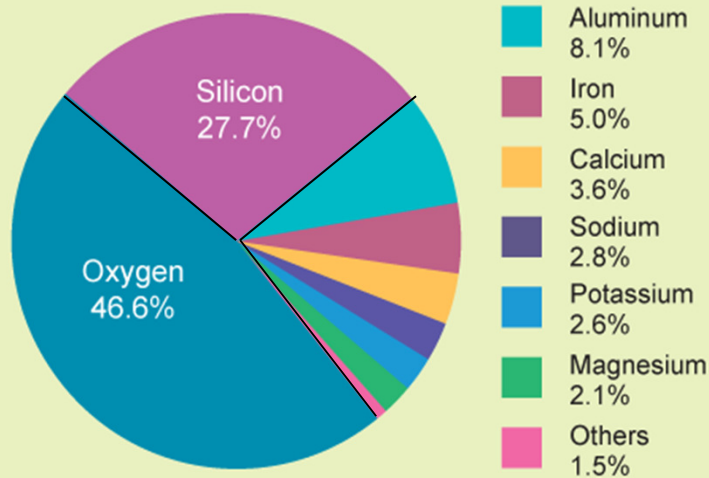


### Elements in Earth's Oceans

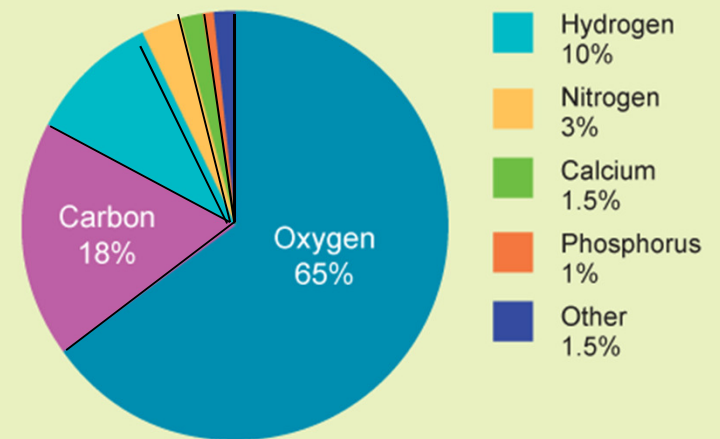


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### Elements in Earth's Crust



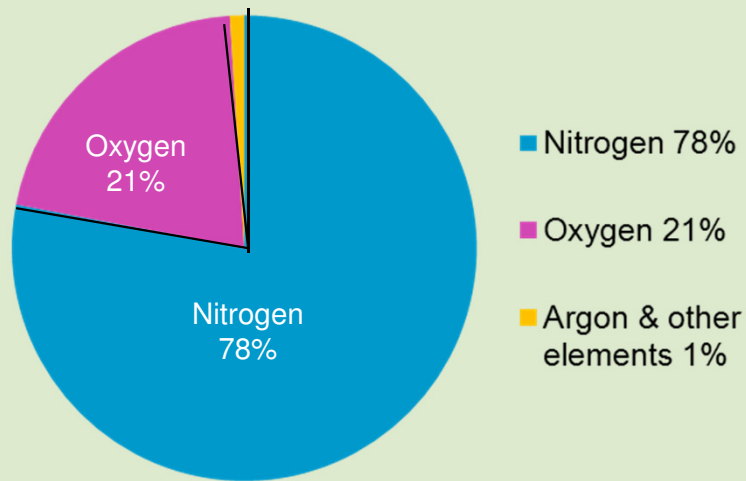
### Elements in the Human Body



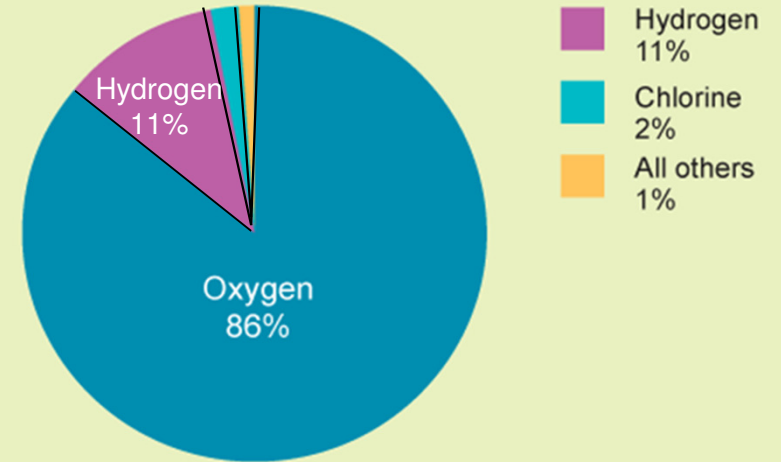
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### Elements in Earth's Atmosphere

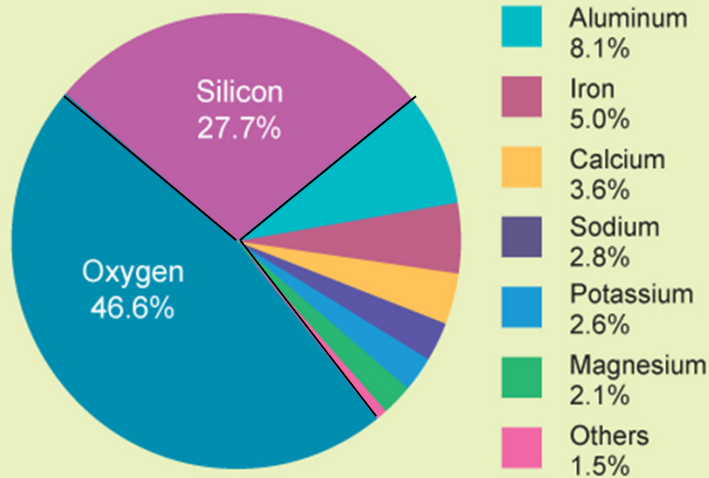


### Elements in Earth's Oceans

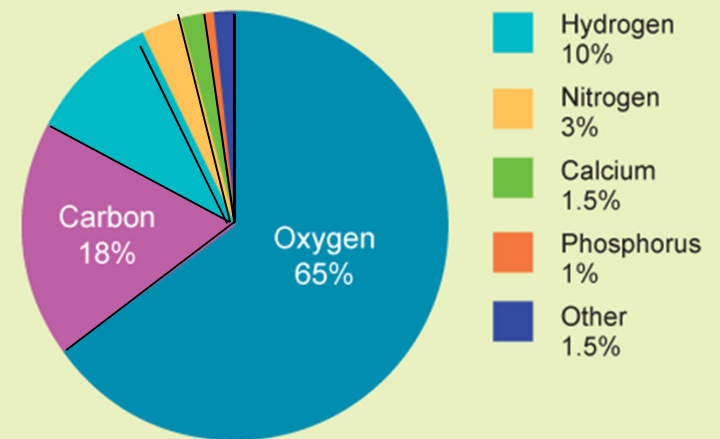


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### Elements in Earth's Crust



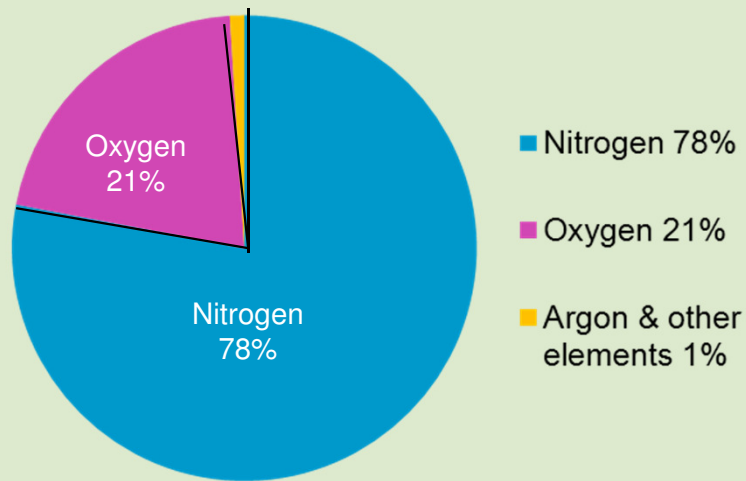
### Elements in the Human Body



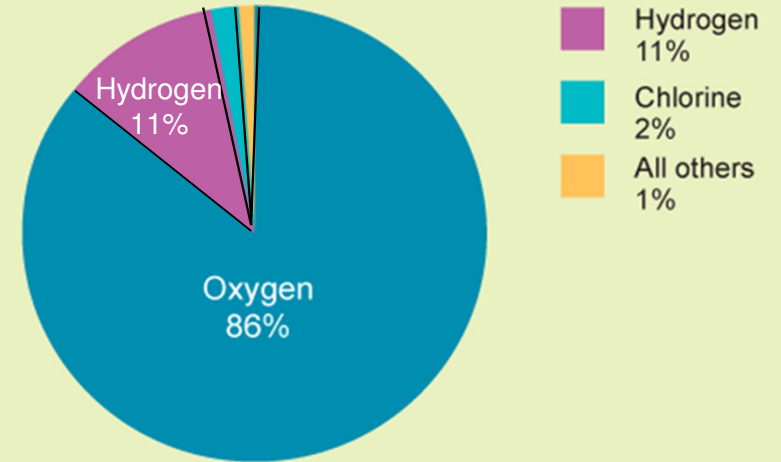
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### Elements in Earth's Atmosphere

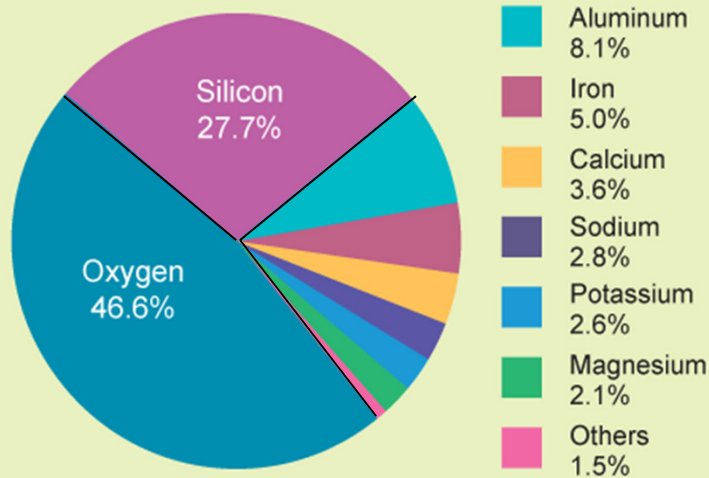


### Elements in Earth's Oceans

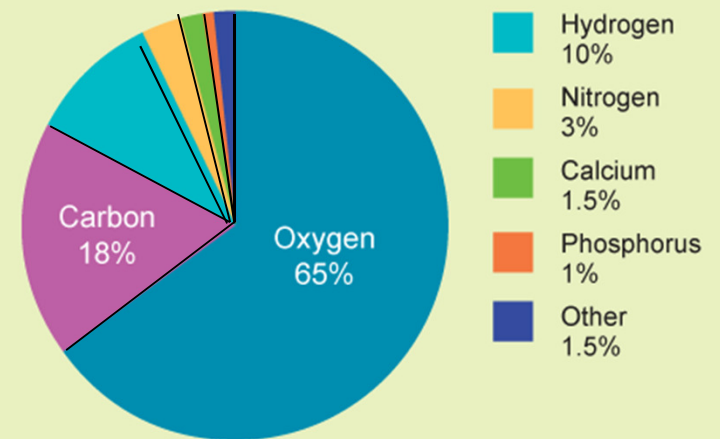


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### Elements in Earth's Crust



### Elements in the Human Body



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