

Ch 5.1

Sci Probe 9

MATTER – Definition and Classification Systems

Definition of MATTER:

Matter is anything that has _____ and _____.

Matter – Concept Attainment Data Set

Yes Examples (these things ARE Matter)	No Examples (these things are NOT Matter)
apple	time
person	sound
table	sunlight
air	rainbow
water	love
computer	thoughts
paper	gravity
iron	microwaves
Ice cream	heat
wood	memories
Mars	information
sand	reflections
rock	
The Sun	
spider	
tree	
paint	
snow	
cloud	
sandwich	
fingernail	

Mixtures Data Set

Definition of PURE SUBSTANCE:

A pure substance is _____

The Two Types of Pure Substance:

- Element: _____
- Compound: _____

On the list of pure substances, circle all the Elements (the non-circled substances are compounds)

Definition of MIXTURE:

A mixture is _____

The Two Types of Mixture:

- Homogeneous: _____
- Heterogeneous: _____

On the list of mixtures, circle all the homogeneous mixtures (the non-circled substances are heterogeneous)

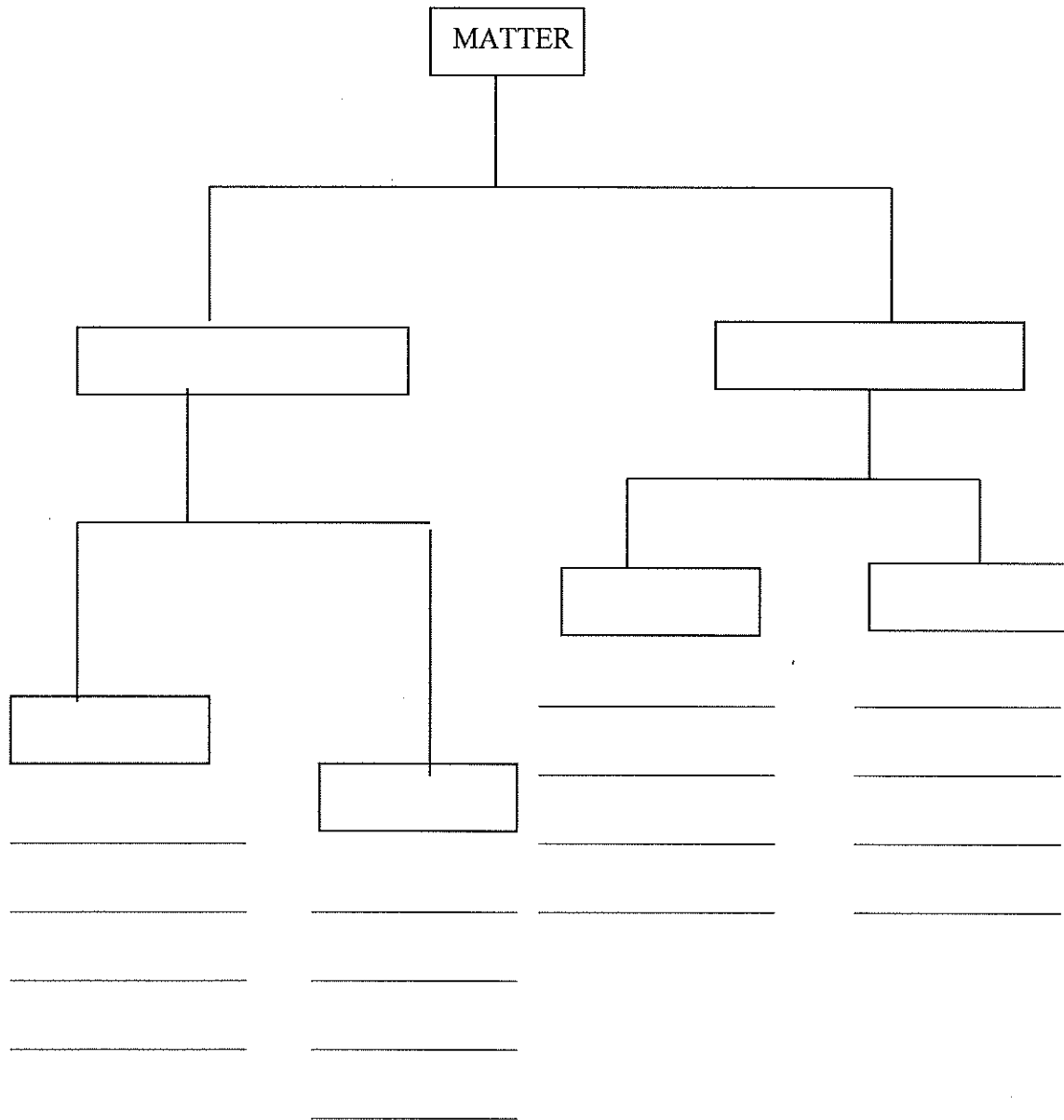
Pure Substance	Mixture
tin	Air
sulphur	Metal alloys (eg brass, bronze, steel)
diamond	sand and gravel
Water (H ₂ O)	Oil and water
sugar	Sand and water
Table salt (Sodium Chloride = NaCl)	Salt and water
Baking soda (sodium bicarbonate)	Sugar and water
gold	Orange juice with pulp
	Chicken noodle soup
	blood
	soil

Science 9: The Classification of Matter (Section 5.1)

Name: _____

1. Fill in the blanks below, showing the classification system chemists use for matter. Include the following information in the chart:

- a) Fill in the boxes with the appropriate word
- b) On or near the line leading to each box, explain the meaning of the box
- c) Below the 4 boxes at the bottom of the chart, list 4 examples of the type of matter



2. Create Your Own Classification System:

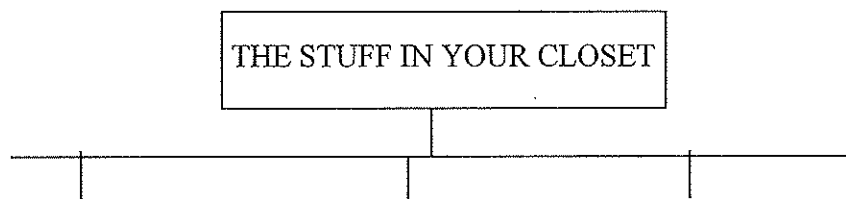
The following is a list of objects left in pile on the floor of your closet:

Teddy bear	science textbook	4 pens	3 pencils
paint set	paint bushes	school notebook	dirty socks
clean socks	2 white T-shirts	3 blue T-shirts	set of marbles
2 pairs of jeans	deck of cards	3 pairs of shoes	art paper
an apple	baseball bat	baseball	calculator

You have decided once and for all to clean up the mess in the closet. You have a plan to build a storage container with several sections to store all your things. But first you must invent a *classification system* to use when organizing your things.

Create a chart in which you show the categories and sub-categories that you will use that you would use to classify your things. The first box has been drawn for you, but you must draw more boxes for the categories that you invent, and then make sub-categories below. Write the names of the objects below the box for that category and/or sub-category.

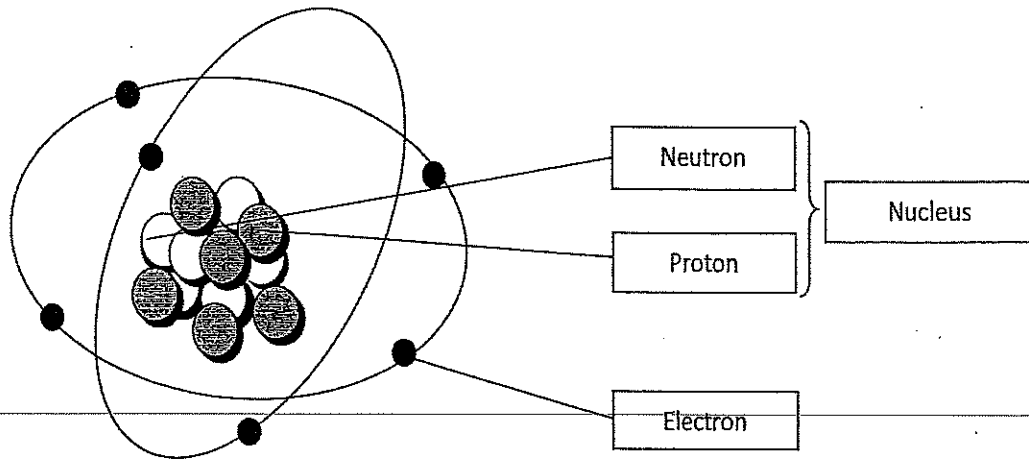
You do not have to use the three branches exactly as shown below. You can use more or fewer branches. (*note: there is not one "right" answer to this – but your organizational decisions should be logical*)



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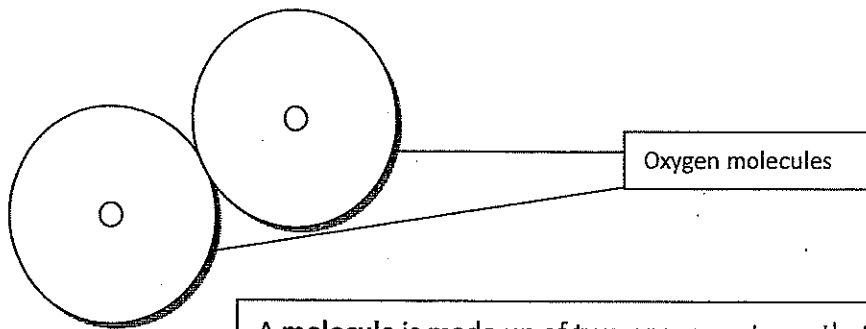
What's the Matter?

Atom



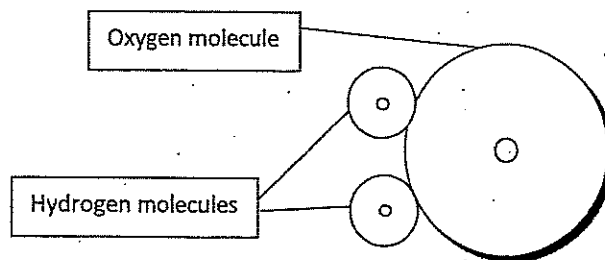
An **atom** is made up of three kinds of particles — protons, neutrons, and electrons.

Molecule



A **molecule** is made up of two or more atoms that are held together. Two atoms of the same element joined together form a molecule of that element.

Compound

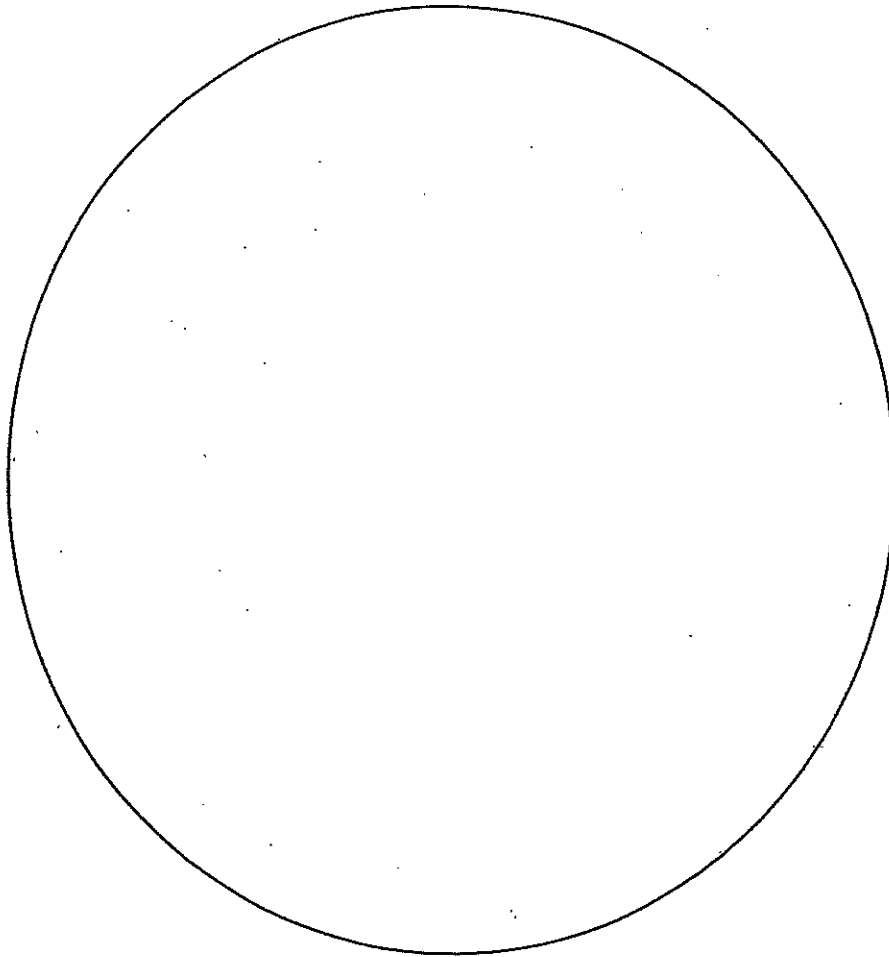


A **compound** is made up of atoms of two or more elements joined together. For example, water is a compound formed from joining two hydrogen molecules and one oxygen molecule.

An Atom of My Element

Name: _____ Date: _____

In the circle below, draw a picture of one atom of your element, including the protons and neutrons in its nucleus and the electrons in orbit around its nucleus. Use a different color for each part of the atom.



Fill in the basic information about the atom:

Name of element: _____

Number of neutrons in the nucleus: _____

Number of protons in the nucleus: _____

Number of electrons: _____

Atomic symbol: _____

Uses of element: _____