Name

Period

Date

Chemistry Station Review (1st semester)

These stations are similar to ones we have already done during the course of our Chemistry year. Your group should not need more than a few minutes at each. You have 14 stations to complete- time is of the essence!

Station1- Sugar Cube

1 Identify the color of the sugar cube. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Which type of property is this? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2 Use the mortar and pestle to crush a small piece of the cube. Crushing is which type of change? \_\_\_\_\_\_\_\_\_\_\_\_\_

3 Look at our results from Hey Sugar lab, is sugar reacting to acid a physical or chemical change? (circle answer)

4 If sugar’s formula is C12H22O11 then would it be considered an element or a compound? (circle answer)

5 Look at sugar’s formula again, what type of elements are C, H, and O? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Station 2- Cube

6 Look at the picture to calculate the mass of this cube. \_\_\_\_\_\_\_\_\_\_\_\_\_\_

7 Now find the volume of the cube. \_\_\_\_cm x\_\_\_\_cm x\_\_\_\_\_cm = \_\_\_\_\_\_\_cm3

8 Lastly, find the cube’s density. (Density= mass/ volume) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9 What element would this cube represent if its atomic number is 29? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Station 3- Rock, Sand, Salt, and Iron mixture

10 Is this mixture heterogeneous or homogeneous? (circle answer)

11 If you were asked to separate the salt from the mixture, what would be the best method? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Station 4- Foil

12 Cut the foil one time with scissors. What type of change did you make happen? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13 Hook the wire clamps to the foil. Does it conduct electricity? \_\_\_\_\_\_\_\_\_\_\_\_

14 What types of physical properties does it have? \_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15 What type of element would you classify it as (based off your answers to the above question)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16 If its atomic mass is number 26.98, what element is it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Station 5- Salt water

17 NaCl (salt) is what type of pure substance? (Reference the flow chart) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18 When you mix H20 with NaCl what type of mixture is it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How do you know? Can you see the different particles or does it all look the same? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19 If you wanted to get the salt out of the water, what could you do? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

20 Pretend you took the temperature after mixing, read the temperature picture on the wall. \_\_\_\_\_\_\_\_\_\_\_\_\_

Station 6- Radiation

21 What is the name of this instrument? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

22 What is this instrument used for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

23 There are two pictures stuck to the Station 6 sign. Draw the correct picture under each word.

Fusion Fission

24 From the picture on the wall. Match the letter to the vocabulary word.

\_\_\_\_\_\_\_ alpha

\_\_\_\_\_\_\_ beta

\_\_\_\_\_\_\_ gamma

Station 7- Nails

25 Test the “new” nail with the wire probes. What happens? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

26 Test the “rusty” nail with the wire probes. What happens? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

27 A nail rusting is what type of change? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

28 Does the nail lose properties when a chemical change happens? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

29 If I told you it had 26 protons, you would tell me its identity is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Station 8- Models of the Atom

30 Use the cards to match the scientist to the correct model of the atom. Put the correct letter next to the scientist’s name.

|  |  |
| --- | --- |
| 1 Democritus \_\_\_\_\_\_\_  2 Dalton \_\_\_\_\_\_  3 Atomic Theory \_\_\_\_\_\_  4 Thomson \_\_\_\_\_\_\_ | 5 Rutherford \_\_\_\_\_\_\_  6 Bohr \_\_\_\_\_  7 Schrodinger \_\_\_\_\_ |

Station 9- Rock

31 Does it have luster? \_\_\_\_\_\_\_\_\_\_\_\_\_

32 If this rock is brittle, doesn’t conduct electricity, but does have luster, what type of element is it? \_\_\_\_\_\_\_\_\_\_\_\_\_

33 Use the triple beam balance to calculate the “rock’s” mass. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

34 Add at least 20 mL of water to the graduated cylinder. Record your initial amount- it doesn’t have to be 20 mL, then add the rock. How much volume does just the rock have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

35 What is the rock’s density? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**\*\*\*\*Please DUMP the water and remove the rock from the graduated cylinder. Thank you!\*\*\*\***

Station 10- Bohr diagrams of Lithium atom

|  |  |
| --- | --- |
| **36 Left picture:** Charge of particle  # of protons-  # of neutrons-  Atomic mass-  # of electrons- | **37 Right picture:** Charge of particle  # of protons-  # of neutrons-  Atomic mass-  # of electrons- |

38 What is DIFFERENT between the two diagrams? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

39 Write the isotope form for BOTH diagrams \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Station 11- Half-Life

40 Look at the four test tubes in the rack. Mentally relate these test tubes to a half-life graph. The second test tube has about how much water in it compared to the first? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

41 Calculate the half-life of Uranium-238 (used in nuclear power plants). Uranium has a half-life of about 4 billion years. Pretend you start with 20 gram sample. How much is left after 12 billion years?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Start | 1st half-life | 2nd half-life | 3rd half-life | 4th half-life |
| Quantity |  |  |  |  |  |
| Time | 0 |  |  |  |  |

Station 12- Heartburn Help

Fill your beaker to *about* 50 ml. Break the antacid tablet. Use no more than a half. **Smaller piece = faster results!** Drop the antacid tablet into the water.

42 What type of reaction happens? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How do you know? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

43 Pretend a thermometer took the new liquid’s temperature, what does it read (on the picture?) \_\_\_\_\_\_\_\_\_\_\_\_\_

44 When the tablet is completely dissolved, what type of mixture is it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***\*\*Please dump the water down the drain when your group is finished\*\****

Station 13- Ingredients of a pencil

45 Properties of this element include: it is dull, brittle, and doesn’t react with acid. What type of element is it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

46 This pencil has an element with 6 total electrons. What is the element’s identity? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Station 14-States of Matter



47 Under each box put the object’s name that matches the particle movement.

Station 15- “New” Unknown Element

Physical properties: brittle, dull, doesn’t conduct electricity

Chemical properties: doesn’t react with acid, doesn’t burn

48 What type of element is this? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

49 Where would your find this element (section #) on the periodic table? I II or III (circle your answer)