

Name \_\_\_\_\_

Hour \_\_\_\_\_

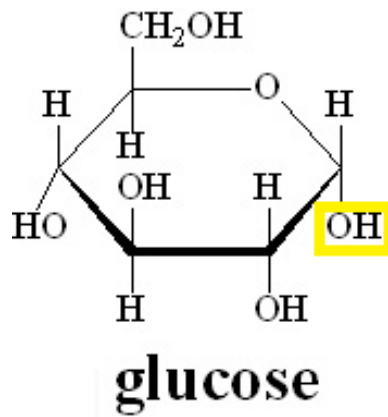
Date \_\_\_\_\_

### Building Sugar Molecules Lab

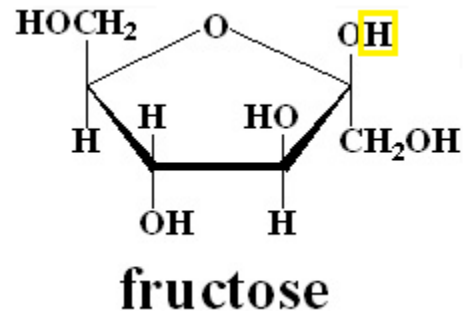
**KEY:**

- Carbon (C) = Black/Blue
- Hydrogen (H) = White/Green
- Oxygen (O) = Red
- Chemical Bond = White tube

① Build Glucose ( $C_6H_{12}O_6$ )

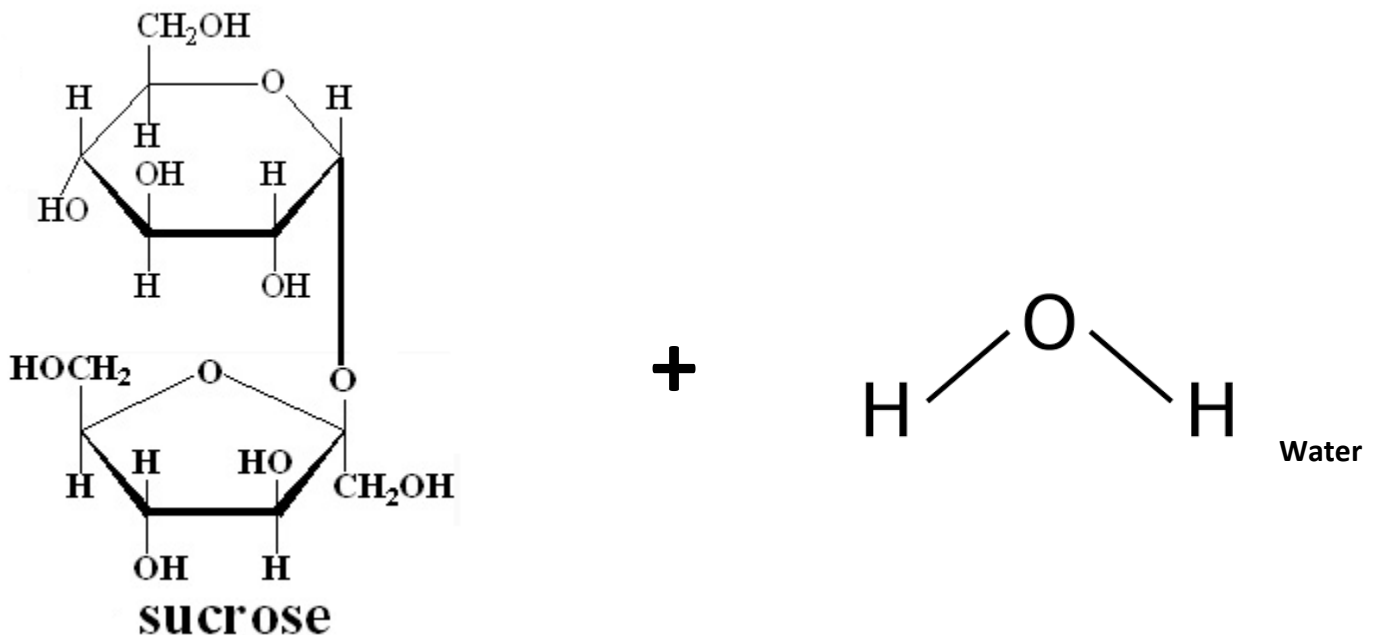


② Build Fructose ( $C_6H_{12}O_6$ )



Now, combine glucose and fructose by removing an  $-OH$  from glucose and a  $-H$  from fructose to form sucrose ( $C_{12}H_{22}O_{11}$ ) and water ( $H_2O$ ) as products.

③ Build Sucrose ( $C_{12}H_{22}O_{11}$ ) and Water ( $H_2O$ )



- ④ The  $-OH$  from glucose and the  $-H$  from fructose are removed to form  $H_2O$  as a product and glucose (monosaccharide) and fructose (monosaccharide) join together to make sucrose (disaccharide). This process of building larger molecules from smaller ones is called \_\_\_\_\_ or condensation.
- ⑤ Sucrose can be broken down into the simple sugars glucose and fructose by adding the  $-OH$  back on to glucose and the  $-H$  back on to fructose (adding  $H_2O$ ). This reverse process of breaking down larger molecules into smaller ones by adding water is called \_\_\_\_\_.