

Name: _____

Nutrition Facts

Serving Size: 1 donut (26g)
Servings Per Container: 12

Amount Per Serving

Calories 290

Calories from Fat 140

Calories from Saturated Fat 65

% Daily Value*

Total Fat 16g **25%**

Saturated Fat 7g **35%**

Trans Fat 0g

Polyunsaturated Fat 7g

Monounsaturated Fat 2g

Cholesterol 0mg **0%**

Sodium 340mg **14%**

Potassium 0mg **0%**

Total Carbohydrate 34g **11%**

Dietary Fiber 1g **4%**

Sugars 14g

Other Carbohydrate 19g

Protein 3g **6%**

Vitamin A 2% Vitamin C 0%

Calcium 0% Iron 6%

Thiamin 0% Riboflavin 0%

Niacin 0% Folic Acid 0%

Percent(%) Daily Value are based on a 2,000 calorie diet.

GLUCOSE

← simplified drawing

Monosaccharides:

"simple sugars"

Examples: Glucose and Fructose

• made of carbon, oxygen and hydrogen atoms (not always drawn in structure)

• naturally found in a lot of fruit, smaller amounts in veggies

• plants make sugars during photosynthesis

• when we eat sugar, our cells can break them down into carbon dioxide and water to gain energy in the process of cellular respiration.

(lactose intolerant people can't break down lactose)

more simplified drawing

SUCROSE

Disaccharides

Examples: sucrose, lactose

• made of 2 monosaccharides bonded together

Ex. Sucrose is glucose and fructose

• naturally found in some fruit

• when we eat disaccharides, our cells first break them down into monosaccharides and then break them down into monosaccharides and then break those down to gain energy in the process of cellular respiration. (People who are lactose intolerant can't break down lactose)

CELLULOSE

Cellulose (Dietary Fiber)

• made of glucose molecules bonded together in long chains.

• found in high amounts in celery

broccoli, beans and peas

• found in all plant cells; their cell walls are made of cellulose

• we cannot digest or break down cellulose into glucose

• cellulose passes right through our digestive tract

Complex Carbohydrates Polysaccharides:

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STARCH

Starch (Other Carb)

• made of glucose molecules bonded together in long chains

• found in high amounts in potatoes, carrots, corn, peas

• plants make it - they store extra sugar as starch to save it for later

• when we eat starch, our bodies break it down into glucose molecules

Processed foods

High in Monosaccharides or Disaccharides:

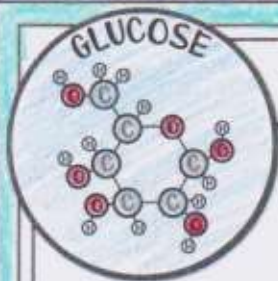
donuts, cookies, cakes, sugary cereal

High in Polysaccharides:

pasta, bread



IN OUR FOOD

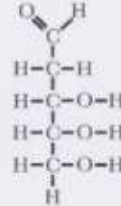
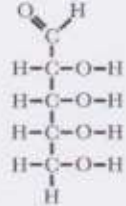
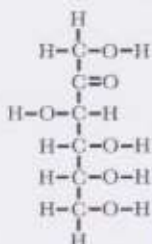
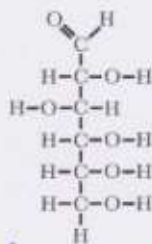


Monosaccharides: Structure

Name: _____

Elements:
C, H, O

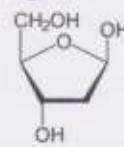
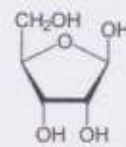
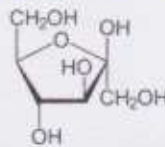
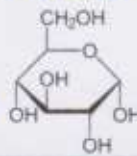
Functional Groups:
hydroxyl
carbonyl



Hexoses (6 carbons)

Pentoses (5 carbons)

Another way to draw \rightarrow
(Notice lone hydrogens are not always drawn)



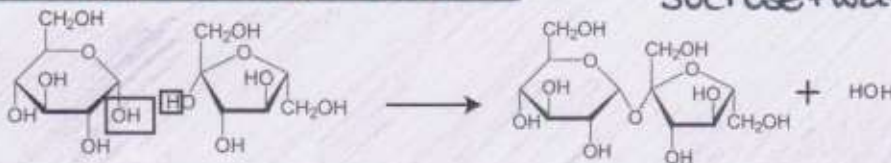
& Function

- The carbon-carbon bonds "carry" energy that cells can harvest and use to run cell processes
- monosaccharides are building blocks for other molecules or structures in the cell

Reaction to Form: Dehydration Synthesis

Disaccharides

Sucrose + water

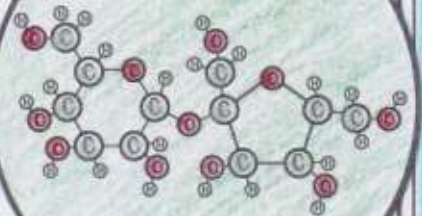


Glucose + Fructose

other disaccharides:
Lactose = glucose + galactose
Maltose = glucose + glucose

- A way for cells to store monosaccharides in a way that is still easy to quickly break down
- found in a lot of fruit
- table sugar is made of sucrose

SUCROSE



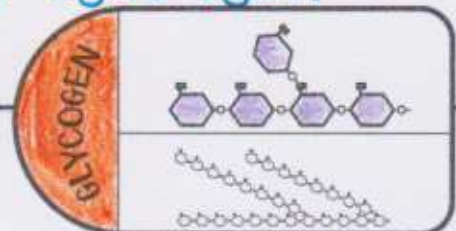
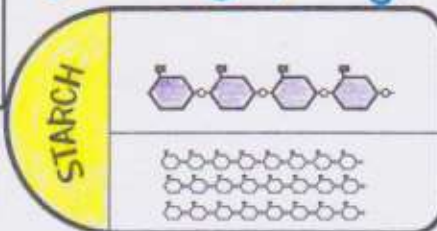
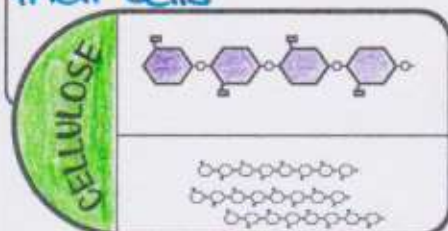
Function

Polysaccharides

Plants make chains of monosaccharides bonded this way to form cellulose.
Strong molecule that plants use to build their cell walls around their cells

Plants store extra sugar as starch.
These bonds are more easily broken than the bonds in cellulose.
often stored in the roots of plants for the winter when it's more difficult to produce more sugar through photosynthesis

How humans store some extra sugar so it's easy to access:
excess glucose can be stored as glycogen in muscle and liver cells.
when muscle/liver cells sense there are not enough simple sugars to burn for energy, they break down the glycogen into simple sugars again



Carbohydrates: Structure and Function