

Name _____

McMush Laboratory**Purpose**

To determine the various nutrients found in a McDonald's Happy Meal. Also we will become familiar with how reagents react in the presence of various substances.

Background (3 marks)

List the 6 different types of nutrients:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

These nutrients provide your body with the energy required to perform life's activities.

Materials

4 test tubes

1 large piece of cheese cloth

1 beaker (250 mL)

1 test tube clamp

1 graduated cylinder (10 mL)

1 elastic

Shared Materials (on side bench)

Benedict's solution – tests for glucose (sugar) – 3 mL

Iodine Indicator – tests for starch – 5 drops

Biuret solution – tests for protein – 10 drops

1% Silver nitrate solution – tests for salt – 5 drops

Hot water bath – hot plate, 600 mL beaker, boiling chips

Blended Happy Meal

Procedure (6 marks)

1. Pick up your materials.
2. Fasten your piece of cheese cloth around the top of your beaker loosely with an elastic. You want the cheese cloth to be able to hang down into your beaker a little with the weight of the blended happy meal.
3. Pour happy meal into your cheese cloth so the liquid is dripping into your beaker.
4. Filter the mixture so that you are collecting liquid to use in the experiment. You may need to apply some pressure to the mixture to squeeze all the liquid out.



While we are waiting for the liquid to drain predict which of the 6 nutrients are in a happy meal. Today we are testing for protein, sugar (simple carbohydrate), starch (complex carbohydrate), lipids (fats), and salt (mineral). **Write down your predictions. (1 mark)**

5. Label your test tubes 1-4 with a grease pencil.
6. Place 5 ml of the McMush liquid into each test tube.
7. Add reagents to your test tubes as listed in the chart below.

Tube #	Nutrient we are testing for	Add
1	Protein	10 drops of Biuret Solution
2	Sugar	3 ml of Benedict's Solution & then place the tube in a hot water bath for 5 minutes
3	Starch	5 drops of Iodine Indicator
4	Salt	5 drops of silver nitrate solution

8. To determine if you had a positive result (the nutrient was present) refer to the chart below. (4 marks)

Nutrient	Name & Colour of Reagent used	What a positive result will look like	Colour of McMush + reagent	Is the Nutrient present?
Protein		Purple colour – the darker the colour the more protein.		
Sugar		After boiling a precipitate will form. The colors - yellow, orange, red, brown - indicate increasing concentration of sugars.		
Starch		A deep blue-black colour		
Salt		A milky white solution or precipitate.		

