IRON
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How is iron related to our health?
LAB EXERCISE

- Using the neodymium magnet provided, does the cereal stick to the magnet?

- Placing the magnet under the table, can you make the cereal move?

- Follow the instructions on the lab hand out

- Be sure to keep the magnets away from the powdered (crushed) cereal

- Lastly, practice lab safety! NO EATING in lab, have your safety glasses on, and be careful when crushing the cereal
Now you may eat cereal....while we discuss our results

- Are all metals attracted to magnets?
  - Elaborate....(yes/no? How do you know this?)
  - Does an MRI affect the iron in your blood?

- Can anyone tell me symptoms of iron deficiency?
### FACTS ABOUT IRON

**Atomic Number**: 26

**Symbol/Name**: Fe

**Atomic Mass**: 55.85

- **Atomic Mass Units (amu)**

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**Periodic Table of the Elements**

<table>
<thead>
<tr>
<th>Element</th>
<th>Atomic Number</th>
<th>Symbol</th>
<th>Atomic Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron</td>
<td>26</td>
<td>Fe</td>
<td>55.85</td>
</tr>
</tbody>
</table>

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[http://pet.schools.smcdsb.on.ca](http://pet.schools.smcdsb.on.ca)  
[http://www.chem4kids.com](http://www.chem4kids.com)
What is the Electron Configuration of Iron?
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Electron Configuration: 1s\(^2\) 2s\(^2\)2p\(^6\) 3s\(^2\)3p\(^6\)4s\(^2\)3d\(^6\)
Iron:

- Iron is a mineral that is consumed in many foods.
- Component of myoglobin, a protein that provides oxygen to muscles, and iron supports metabolism.
  - Component of heme which carries oxygen, from our lungs, throughout our body.
- Necessity for growth, development, normal cellular functioning, and production of some hormones and connective tissue.
IRON RICH FOODS

- Chicken
- Liver
- Pork
- Beef
- Egg yolk
- Clams
- Shrimp
- Broccoli
- Dried beans/green peas
- Potatoes with skin
- Spinach
- Iron fortified cereals
- Raisins
- Dried apricot
- Watermelon

*http://glambistro.com
Iron deficiency is considered one of the most common mineral deficiencies in the world.

Common symptoms include:
- Feeling tired and weak
- Decreased work and school performance
- Slow cognitive and social development during childhood
- Difficulty maintaining body temperature
- Decreased immune function, which increases susceptibility to infection

*http://www.merckmanuals.com
*http://www.cdc.gov/nutrition
Iron Overload can result in the following symptoms:

- Organ failure
- Liver cancer
- Cirrhosis (scaring of liver = poor liver function)
- Liver failure
- Enlarged liver
- Diabetes (resulting from iron overload in pancreas)

*http://www.merckmanuals.com*
*http://www.cdc.gov/nutrition*
WHAT DID YOU LEARN?

- What is the elemental symbol of iron?
  - Answer: Fe

- What is the atomic number and atomic mass of iron?
  - Answer: 26 and 55.85

- Are all metals magnetic? Why?
  - Answer: No; dipoles

- Is iron considered a vitamin, mineral, etc.?
  - Answer: Mineral

- What can happen if we do not consume enough iron?

- What can happen if we consume too much iron?
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Questions?