



## Lesson 2

### Vocabulary Exercise

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In the continuation of our educational journey through biomedical engineering, Lesson 2's vocabulary sheet aims to illuminate students on the components and safety considerations surrounding magnetic resonance imaging (MRI) machines.

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**Recommended Grade Levels:** 6-8

### MRI Vocabulary List for Lesson 2

1. **Main Magnet:** A powerful magnet in an MRI machine that creates a big, steady magnetic field.
2. **Gradient Coils:** Special coils in the MRI that change the magnetic field in tiny ways to help make detailed pictures.
3. **Radiofrequency (RF) Coils:** Parts of the MRI that send out quick zaps of radio waves to interact with the tiny parts inside your body.
4. **Superconducting Magnets:** A type of magnet that works really well in an MRI because it doesn't waste energy as heat.
5. **Spatial Encoding:** A fancy way of saying 'putting things in their place' so that the MRI knows where the pictures are coming from inside your body.
6. **Computers and Software:** The brains of the MRI that take all the signals and turn them into pictures doctors can see.
7. **Patient Table:** The bed you lay on in an MRI that can move around to get the best pictures.
8. **Display Console:** The computer desk where the MRI technologist controls everything and makes sure the pictures come out just right.
9. **MRI Safety:** Rules to keep you safe around the strong magnets, like not bringing metal things into the MRI room.



10. **Real-life Applications:** The ways MRI is used in real life, like helping doctors see inside people to find out what might be wrong.
11. **Future Considerations:** Thinking about what MRI might be like in the future and how it could do even cooler things.
12. **MRI Technologist:** The person who runs the MRI machine and helps you during the scan.
13. **Magnetic Resonance:** When tiny parts inside your body line up with the magnetic field and help make pictures.
14. **Magnetic Field:** The invisible force around a magnet that pulls on things like metal; in an MRI, it helps make pictures of your insides.
15. **Diagnostic Tool:** Something doctors use to figure out what's going on inside your body. MRI is a type of diagnostic tool.
16. **Neurology:** The science that deals with the nerves and brain, and MRI helps doctors see these parts really well.
17. **Metal Objects Safety:** The rule about not taking anything metal into the MRI room because the magnets are so strong they might pull them away.
18. **Superconducting Magnets:** These are very powerful magnets used in MRI machines to create a strong and stable magnetic field, helping make clear images.
19. **Technologist's Console:** This is where the MRI technologist operates the machine, adjusting settings to make sure the pictures come out just right. It's like the control center for the MRI.
20. **Imaging Process:** The step-by-step method used by the MRI machine to take detailed pictures of the inside of your body, including how the machine uses magnets, radio waves, and computers.