

Name _____ Date _____

 **Diagnostic Services****Project 5.3 Topic:** Magnetic Concepts as They Relate to Diagnosing with MRI Technology**Materials Needed**

- Student Information Sheet
- Patient Medical Record
- Research resources
- Word Processing program or paper supplies
- Internet access

Introduction

Andrew Michael, his right knee bandaged, has been sent for a magnetic resonance image (MRI) of the injury he received during last night's football game. You are the radiologic technologist who will administer the MRI and communicate the results to a radiologist. After greeting Andrew, you read his chart, which gives a detailed description of the incident from Andrew's viewpoint. It also includes the observations, the assessment and the plan worked out by the staff in the training room. As you are almost finished reading, Andrew starts to speak.

You discover quickly that Andrew is not quiet or shy. He is full of questions. "How does this work? How are you going to find out what's wrong with me? Are you certified to do this? Why not just do an X-ray?" You take a deep breath.

Procedure

Step 1: Your patient is very anxious about having an MRI, but he is also excited about having something so unique to tell his friends. He thinks they will be full of questions, so he wants to be able to explain to them how the MRI machine works. He wants to know, for example, why no metals are allowed near the machine. You realize, of course, that such an explanation would need to be in terms that a nonscientist would understand, even though the concept is not simple. Prepare something in writing that he can keep and use to explain how an MRI machine works.

Step 2: In your discussion of how the MRI machine works, you mentioned electromagnetic radiation. Your patient heard that this type of radiation is dangerous and causes cancer. He suddenly realizes that this might be a perfect topic for the paper he has to do for his science class on environmental hazards. Assure him, by discussing the type of radiation used, that the radiation in the MRI machine is not dangerous, and help lead him to some sources about electromagnetic radiation.

(continued)

Scenario 5: Sports Injury

Name _____ Date _____

Project 5.3: *(continued)*

Step 3: One of your patient's friends injured his leg and needed only an X-ray. Your patient wants to know why he had to have an MRI, which seems more complicated and expensive. Compare the information that can be obtained from an MRI with that which can be obtained from an X-ray.

Step 4: Identify the educational background needed to pursue a career both as a radiologic technologist and a radiologist. Would a technologist who takes X-rays also have the knowledge to do an MRI scan?