

Lesson Plan to accompany the Our World Film “Heart Science”

Find it at www.ExploreYourFuture.org under “Watch the Shows” Page 1 of 2

OVERVIEW: This short-length factual program follows various professional doctors, engineers and technicians working with cutting edge medical technology. Viewers will meet the technicians who operate a 64-slice CAT scan machine, the engineer who created a working artificial heart, and the biomedical engineers who keep it running in and out of the operating room. Viewers will hear what these people do every day and why they love doing it. Students will come away with the impression that there are numerous fascinating careers in the life sciences sector, and none of them are ever boring.

OBJECTIVES: Students will relate careers to individual interests; analyze career options in the STEM sector; identify 21st century skills, discover new opportunities within the STEM sector.

GRADE LEVELS: This lesson is best used with grades 8-12.

SUBJECTS: Career Planning, Science, Mathematics, Technology, Biology, Chemistry, Anatomy, Engineering

MATERIALS NEEDED: Television (preferable a 16:9 flat screen) and DVD player (or computer with DVD drive); or a projector and screen with DVD device; Computers with internet access

ESTIMATED TIME OF COMPLETION: One 50-minute class period.

10-min introduction
10-min video
10-min web assist
10-min class discussion
10-min group discussion

INTRODUCTION:

Explain to students that there are innumerable career paths within the STEM sector, with enormous need and opportunity in today’s global economy. For middle school students, have them keep in mind their own personal interests while they watch. Ask them to imagine what jobs they might like doing or the skills they may have that are demonstrated in the film. For high school students, prior prompts may not be necessary.

ACTIVITY:

Watch the 8-min HDTV video featuring Heart Science.

Share with the class some interesting facts about the careers featured within the video. Provide students with background information of video participants including resumes or biographies.

For middle school students, engage in a class discussion about what they had been asked to think about during the film.

For high school students, have them break up into small groups and identify the skills that they have and the skills that they saw the people in the film having. They should connect these skills to other careers.

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Then the class reconvenes and everyone shares what they came up with and it is written on the board. In the end, students will ideally see that there are a great deal of careers that can match just a few skill sets.

Using www.ExploreYourFuture.org, which includes a detailed Explore Careers section, students will conduct research in varying career paths for a chosen STEM career and gain insight into the educational and skill requirements for these careers.

CONCLUSION:

For middle school students – review the career paths the students created on the career wheel, asking them if they found anything to be surprising or interesting.

Engage in a class discussion to further explore the STEM aspects of the film and examine the required skills identified. Discuss with students what STEM is and why it is important for future careers.

ASSESSMENT:

Participation in class and group discussions. Efficiency in utilizing the Explore Your Future web resource and successfully generating a career profile that relates to their chosen interest.

PA ACADEMIC STANDARDS:

13.1.8 A – Relate careers to individual interests, abilities, and aptitudes.

13.1.11 B – Analyze career options based on personal interests, abilities, aptitudes, achievements and goals.

13.1.8 F – Analyze the relationship of school subjects, extracurricular activities, and community experiences to career preparation.

13.1.8 G – Create an individualized career plan including, but not limited to cluster/pathway opportunities and training/education requirements.

13.2.8 B – Evaluate resources available in researching job opportunities.

EXTENSIONS:

Use the web to explore innovative technologies, and consider future careers that do not yet exist.

PA ACADEMIC STANDARD 13.1.11.C – Analyze how the changing roles of individuals in the workplace relate to new opportunities within career choices.

Invite a STEM professional to class who has pursued a career featured in the video and inquire about their personal career path.

Expand the connection between classroom work and film topics such as collaboration and communication.

PA ACADEMIC STANDARD 13.2.8 E – Explain, in the career acquisition process, the importance of the essential workplace skills/knowledge.

Watch other episodes of the Our World film series at www.ExploreYourFuture.org and explore related or totally new career possibilities.