Lesson Plans & Activities

Yourself

History of Organ & Tissue Donation

Focus: History of Organ and Tissue Donation

Lesson: Organ Donation and Transplantation

Overview: Students will read about Dr. Thomas Starzl as the "Father of Transplantation", the medical developments of his time, and the chronological events of his work.

Time Needed: One class period

Objectives:

1. During this activity, students will read the non-fiction text about Dr. Thomas Starzl, also known as the "father of transplantation." http://www.starzl.pitt.edu/about/starzl.html
2. Upon completion of the text, students will use a timeline to record significant events in the life of Dr. Starzl and his advancements made in transplantation.
3. Students will conduct a search using the internet to explore medical and technological advancements from 1950-1960. Students will use a timeline to record these findings.
4. After completing this activity, students will complete a written response depicting the challenges and advancements of Dr. Starzl regarding organ transplantation.

Standards Match:

Reading, Writing, Speaking, and Listening	History	Crosscutting Concepts & Unifying Themes
1.1.11.D, 1.1.11.G, 1.5.11.A, 1.5.11.B, 1.8.11.B	8.1.9.A, 8.1.9.B	Structure & Function

Materials Needed:

- Access to internet to read about Dr. Starzl. http://www.starzl.pitt.edu/about/starzl.html
- One timeline per student

Activity:

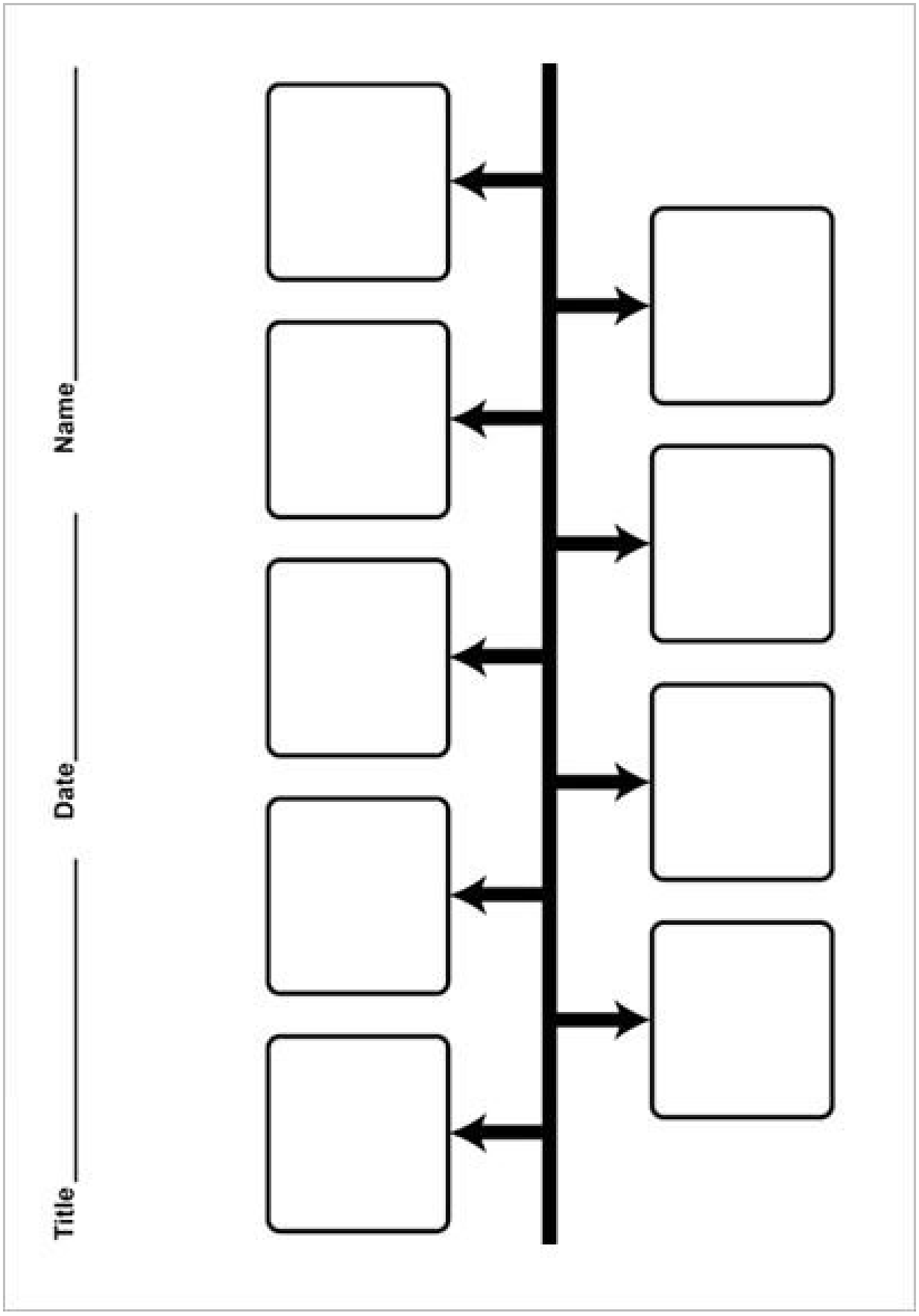
1. Have students read about Dr. Thomas Starzl. Students will record significant events in his life and his medical accomplishments in transplantation.
2. Divide the class in half. One group performs internet search on the medical and technological advances made from 1950-1960 and records findings on provided timeline. The other half of the students will research the life and work of Dr. Thomas Starzl and record their findings on the provided timeline.
3. Students discuss findings in a large group setting.
4. Upon completion of activity and whole group discussion, each student will reflect on the research and readings to write a response depicting the challenges that Dr. Starzl experienced as he pioneered his way to becoming "the Father of Transplantation."

Optional Resources:

"A Science of Miracles"
https://www.youtube.com/watch?v=EWCBxinhwbc

History of Organ & Tissue Donation

ACTIVITY



Yourself

Your Decision to Donate

Focus: Personal Response

Lesson: Your Decision to Donate

Overview: Students will review the recent national and state statistics of organ and tissue donation, listen to real life stories of recipients and donor families, and know the steps to take to designate oneself.

Time Needed: Two class periods

Objectives:

1. Upon completion of activity, students will learn about Pennsylvania's statistics regarding organ and tissue donation.
2. Upon completion, students will understand the steps needed to become an organ donor in Pennsylvania.
3. Students will complete a letter to their family describing facts of donation and personal wishes regarding their own organ donation.

Standards Match:

Reading, Writing, Speaking, and Listening
1.1.11.D, 1.1.11.G, 1.8.11.B

Materials Needed:

- DMV Pennsylvania Department of Motor Vehicle pamphlet
- computer
- copy of decision making format, one per student
- copy of letter to parent/guardian, one per student

Activity:

1. Students will turn to a neighbor and discuss what they know about organ and tissue donation.
2. Students will read the most recent Pennsylvania Department of Motor Vehicle's pamphlet on considering to become an organ donor at the time of your license and discuss.
3. Students will view the videos:

   a. "Donation and Transplantation: How Does It Work?" from the United States Department of Health and Services.

   b. http://www.donatelifepa.org/humanside/

   *Multiple videos of Pennsylvania's recipients and donor families

Yourself

Your Decision to Donate

ACTIVITY

When you receive your license or permit, you will be asked if you want to be an anatomical donor. What does it mean to be a registered donor?

WHY REGISTER?

There are nearly 120,000 patients on the national organ transplant waiting list, each one reliant on the compassion and generosity of another for a life-saving gift of organ donation from a deceased donor. While many will be transplanted, there are some who sadly will not. 100 people die every week while waiting for an organ transplant.

SHOULD THE UNTHINKABLE HAPPEN…

Registering as a donor indicates that you wish to donate any viable organs or tissues which could save someone else's life, or to restore a stranger's vision or mobility, through transplantation after you pass away. When individuals document this decision by registering – whether at the DMV or directly on their state's confidential, online registry – their family can take comfort in knowing their loved one's wishes. One organ donor can save up to eight lives and one tissue donor can help up to 100 people!

Learn more by watching videos on the website:

https://donatelifepa.org
The #Humanside of Donation

Registering as a donor does not necessarily mean you will become a donor after you pass away. In fact, less than 1 percent of the American population die under the specific, and rare, medical circumstances necessary to support organ donation.

This video explains why:

DONATION AND TRANSPLANTATION: HOW DOES IT WORK?
https://www.youtube.com/watch?v=HuKx2a5HkIM

U.S. Department of Health and Human Service

TALK TO YOUR FAMILY

It is extremely important for everyone to talk with their families and loved ones about their wishes regarding organ and tissue donation. If you are under the age of 18, donation never occurs without parental/guardian authorization. This is why it is important to talk to your family about your decision – whether or not you wish to be a donor, you and your family should know what everyone's wishes are. Do you know what your loved ones think about organ and tissue donation?

If you wish to document your decision to be an organ and tissue donor, you can elect to have your driver's permit/license coded at the DMV, or register directly on your state's online registry (see below). You do not need parental permission to register. More information about your state's registry and donation:

National: donatelife.net

State: donatelifepa.org

To register to be a donor: donatelifepa.org/register

"An Organ, Eye, and Tissue Donation Curriculum" education@donatelifenw.org

Your Decision to Donate

ACTIVITY

Decision-Making Format

1. The Problem: Should I become an organ donor and sign the organ donor card?

2. Facts bearing on problem.

3. List courses of action.

a)

b)

c)

4. Discuss courses of action.

a)

b)

c)

5. My decision is_____.

This is based on:_____.

Your Decision to Donate

ACTIVITY

Provide to the student AFTER teaching

Dear Parent or Guardian:

During _____ class I learned about organ and tissue donation and transplantation. An important part of what I learned is the need for me to talk about my wishes about donation and transplantation with my family.

My feelings are _____

_____

_____

_____

☐ I DO wish to be an organ and/or tissue donor.

☐ I DO NOT wish to be an organ and/or tissue donor.

☐ I am NOT SURE at this time.

It is important for me to know how you feel about this subject. I want to take the time to talk with you about it so that we can both understand more about each other's wishes.

_____ _____

Signature Date

Yourself

Your Decision to Donate

ACTIVITY

Making a Decision about Donation

Answering the questions below will help you consider organ and tissue donation. Use the back of this paper if needed to write out your thoughts.

1. What are your options in terms of registering as a donor?

2. Does the idea of donating organs and/or tissues after you pass away conflict with or complement your personal values? Why or why not?

3. If you needed an organ transplant in order to live, do you think organ donation would conflict with or complement your values?

4. Who would be impacted by your decision to donate or not to donate?

5. Are there any risks to registering? What, if any, are they?
   a. Where did you hear about this risk? Can you verify that your concerns are based on fact?

6. Is time a factor in whether or not to register? In other words, does it matter if you register today, or ten years from today?

7. How do you register as a donor in your state?

Myths and Truths

Domain: Risks and Benefits

Lesson: Myths and Truths

Overview: Students will explore and discuss the myths and truths of organ donation through whole class and small group activities.

Time Needed: Two class periods

Objectives:

Upon completion of this activity, students will know the "Myths and Truths" of organ donation.

Standards Match:

Reading, Writing, Speaking, and Listening	Crosscutting Concepts & Unifying Themes
1.1.11.G, 1.6.11.A, 1.6.11.D, 1.6.11.E	Cause & Effect

Materials Needed:

- "Myths and Truths" template (1 per group)
- "Myths and Truths" statement slips (1 per group)
- Top 10 myths of organ donation.
- "Organ Donation: What You Should Know" (1 per group)
- "Myths and Truths"

Activity:

1. Students will be grouped in small groups to complete the "Myths and Truths" cut and paste activity.
2. In a large group, discuss the myths related to organ and tissue donation.
3. Have groups use the internet to research answers to complete the "Organ Donation: What You Should Know About Organ Donation" worksheet.
4. Wrap Up Activity: Form students into two equal teams. Have each team member sit shoulder to shoulder. The last student on each team holds one set of the "myths and truths" cards. The teacher reads a statement about organ and tissue donation. If the statement is a "truth", then the "truth" card is passed all the way to the front of the line. The same applies if it is a myth. First person in line stands and announces the card chosen. First one to announce correct answer, earns a point. If the answer is incorrect, the opposing team gets a chance to steal the point if they can defend why it is incorrect. Once point is awarded, all players move one seat over to their right, with the first person going to the end of the line. Next statement is read and the game continues in the same manner.

Discussion Questions:

1. What have you learned?
2. How did you feel about organ and tissue donation in the beginning?
3. How do you feel about organ and tissue donation now?

Your Decision to Donate

ACTIVITY

MYTHS AND TRUTHS

TRUTH	MYTH

Your Decision to Donate

ACTIVITY

MYTHS AND TRUTHS

Students: Please cut the following strips and place under appropriate column on the “MYTHS and TRUTHS” template.

Some people are too old to be organ donors.
All major organized religions support organ donation.
Only 3 out every 1,000 people die under circumstances appropriate for organ donation.
The donor’s family pays for organ recovery.
If an adult hasn’t made a decision about organ donation, only her spouse or adult child can legally consent to organ donation.
If a person has a medical condition, they cannot be an organ donor.
If medical staff see that I am an organ donor, they will not try to save my life.
A national computer system matches donated organs to recipients.
My family won’t be able to have an open casket funeral if I’m a donor.
The majority of deceased organ donors are patients who have been declared brain dead, meaning there is no chance of recovery.

ACTIVITY

MYTHS AND TRUTHS - Teacher Answer Key

Some people are too old to be organ donors. (M)
All major organized religions support organ donation. (T)
Only 3 out every 1,000 people die under circumstances appropriate for organ donation. (T)
The donor's family pays for organ recovery. (M)
If an adult hasn't made a decision about organ donation, only her spouse or adult child can legally consent to organ donation. (M)
If a person has a medical condition, they cannot be an organ donor. (M)
If medical staff see that I am an organ donor, they will not try to save my life. (M)
A national computer system matches donated organs to recipients. (T)
My family won't be able to have an open casket funeral if I'm a donor. (M)
The majority of deceased organ donors are patients who have been declared brain dead, meaning there is no chance of recovery. (T)

Your Decision to Donate

ACTIVITY

ORGAN DONATION: What You Should Know About Organ Donation

Please use the internet to complete the following questions.
Use www.donatelife.net; www.unos.org; www.donors1.org; www.core.org

1. What does OPO stand for?

2. List five organs that can be used in transplants.

a. _____

b. _____

c. _____

d. _____

e. _____

3. List three tissues that can be used in a transplant.

a. _____

b. _____

c. _____

4. How many recipients die every 24 hours waiting for organs?

5. A person must be in a hospital on a ventilator and be declared brain dead before organs can be recovered. Explain the process (tests) done to determine if a patient is brain dead.

ACTIVITY

ORGAN DONATION: What You Should Know About Organ Donation (continued)

6. When someone's heart stops instantly, or the individual dies outside the hospital setting, can an individual still donate? If so, what can be donated?

7. How long does a recipient have to take an anti-rejection medicine?

8. Three organs can be donated from a live donor. What are they?

a. _____

b. _____

c. _____

9. With one donor, how many people can be saved? _____ Be helped? _____

10. What is the organ in greatest demand?

11. If three recipients all have one month to live and are equally sick, how is the decision made as to who receives the organ?

12. Will the family be charged for organ donation?

ACTIVITY

ORGAN DONATION: What You Should Know About Organ Donation - ANSWER KEY

Please use the internet to complete the following questions.
Use www.donatelife.net; www.unos.org; www.donors1.org; www.core.org

1. What does OPO stand for?

Organ Procurement Organization

2. List five organs that can be used in transplants.

a. Heart
b. Liver
c. Lungs
d. Kindeys
e. Intestine
f. Pancreas

3. List three tissues that can be used in a transplant.

a. Bones
b. Corneas
c. Tendons
d. Heart Valves
e. Skin
f. Veins

4. How many recipients die every 24 hours waiting for organs?

22

5. A person must be in a hospital on a ventilator and be declared brain dead before organs can be recovered. Explain the process (tests) done to determine if a patient is brain dead.

There are a number of conditions that must be met for brain death to be declared. While state or local laws may require additional actions, the construct of the diagnosis is universally accepted as being definitive. In short, to declare someone brain-dead:

1. The coma must be irreversible with either a known or proximate cause.
2. The person must have no brainstem reflexes.
3. The person has no respiratory function.

All three conditions must be satisfied for brain death to be declared.

ACTIVITY

ORGAN DONATION: What You Should Know About Organ Donation (continued)

6. When someone's heart stops instantly, or the individual dies outside the hospital setting, can an individual still donate? If so, what can be donated?

Yes, an individual can still donate corneas and tissues.

7. How long does a recipient have to take an anti-rejection medicine?

Every day for the rest of their lives

8. Three organs can be donated from a live donor. What are they?

a. One Kidney

b. Partial Liver

c. Partial Lung

9. With one donor, how many people can be saved? ___8_____ Be helped? ___over 75___

10. What is the organ in greatest demand?

The Kidney

11. If three recipients all have one month to live and are equally sick, how is the decision made as to who receives the organ?

Unos is the official organization that uses a nationwide computer system used to match organs to those on the waiting list. The UNOS computer generates a list of potential transplant candidates who have medical and biologic profiles compatible with the donor. The computer ranks candidates by this biologic information, as well as clinical characteristics and time spent on the waiting list. These characteristics are: medical urgency, time spent on the waiting list, organ size, blood type and genetic makeup.

https://unos.org

12. Will the family be charged for organ donation?

No. Your family pays for your medical care and funeral costs, but there is no charge for donation.

Organ Transplants-Spare Parts for Broken Hearts

Focus: Scientific Advancement

Lesson: Organ Transplants-Spare Parts for Broken Hearts

Overview: Students will answer questions related to the scientific advancements made in the area of donation and transplantation while learning about its challenges

Time Needed: One class period

Objectives:

1. Upon completion, students will be able to articulate the importance of science in their personal lives and the lives of family members.
2. Upon completion, students will be able to discuss obstacles and challenges of organ and tissue transplants.

Standards Match:

Reading, Writing, Speaking, and Listening	Crosscutting Concepts & Unifying Themes
1.1.11.A, 1.1.11.F, 1.1.11.G, 1.6.11.A, 1.6.11.B, 1.6.11.C, 1.6.11.D, 1.6.11.E, 1.6.11.F	• Systems and System Models, • Cause and Effect

Materials Needed:

- Computers
- Organ Transplants -"Spare Parts/ Broken Hearts" Reinforcement Activity
- Passage

Activity:

1. Students will read the passage below silently.
2. In small groups, students will discuss the passage and utilize the internet to complete the worksheet.
3. The entire class will discuss the passage and make additions to the worksheet.

Have you ever considered the thousands of things that take place in your body? Think of your body as an automobile. Mechanics are always busy replacing this belt or that valve. The brakes, tires, battery and spark plugs are all parts that often need to be changed. When an accident occurs, fenders, doors or a hood may need to be replaced. Auto mechanics go to the local junkyard where usable parts can be recycled from cars that are no longer drivable. Who would have thought that a similar idea could someday be used to save lives? Organ transplants have become quite common in today's medical world. You may have heard of the kidney transplant. This surgery is fairly common. Hearts and lungs have also been transplanted separately and together.

Today, hearts, kidneys, livers and other organs are transplanted. Doctors believe that someday, with more research, certain animals could be raised specifically to supply organs for human transplants. Yet, other exciting ideas are being considered. For example, can one part of the body be used to replace another? Scientists have already constructed a heart for a dog using the muscle taken from the dog's back. Where will technology end? Someday scientists may be able to grow new organs in the laboratory using organ tissue. We may each have our own spare organs on the shelf ready to fix our broken parts!

Organ Transplants-Spare Parts for Broken Hearts

ACTIVITY

Name _____ Date _____

Answer the following questions.

1. Why would someone need a kidney transplant?

2. What problems can result from organ transplantation?

3. What precautions do doctors take to minimize complications in organ transplants?

4. Why does the body sometimes reject a donated organ?

5. What is the purpose of the drug, cyclosporine? How does it work?

6. What are two ways in which scientists might someday be able to make more organs available for transplantation?

7. Which organs are typically transplanted into humans?

Procedures	Routine	Experimental	Untested
Blood transfusions			
Growing new organs from organ tissue			
Constructing new organs from animal tissue			
Transplanting human kidneys into humans			
Transplanting organs from animal to a human			
Use of cyclosporine			
Transplanting human livers into humans			
Raising animals specifically for human transplants			
Matching donor and recipient organs			
Transplanting human hearts into humans			

Organ Transplants-Spare Parts for Broken Hearts

ACTIVITY

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