

Teacher:

Date:

Grade:

**Subject / Course:** ELA, Science

**Unit Title:** Kidney Matters. Can be used in conjunction with teaching the Body Systems

**Duration:** 20–30 Minutes

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## Mississippi Science Framework:

### INQUIRY

- 1a. Form hypotheses and predict outcomes of problems to be investigated. (DOK 3)
- 1d. Use simple sketches, diagrams, tables, charts, and writing to draw conclusions and communicate data results. (DOK 2)

### LIFE SCIENCE

- b. Classify the organs and functions of the nervous, circulatory, and respiratory systems of the body. (DOK 1)
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## CCRS:

### ELA

**W.4.2d** Use precise language and domain-specific vocabulary to inform about or explain the topic.

**RI.4.3** Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

**RF.4.4a** Read grade-level text with purpose and understanding.

**L.4.1f** Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.

**L.4.2** Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling, when writing.

**L.4.4** Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.

## Summary of Unit:

**Excretory System.** Discussing the kidneys, where they are located, and the function within the body. Includes information on the first auto kidney transplant, which took place in Mississippi.

## Lesson Objectives:

- Explain the role of the kidney as a filtering system for blood
- Describe the by-products of the excretory system
- Model the filtering function of a kidney

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## Lesson Structure:

- The teacher will have students read the “Kidney Matters” handout to learn information about the kidneys and how they work. This can be done as a group, in partners, or individually, depending on your students’ needs.
- Students will work through the vocabulary crossword puzzle. You can review their responses to help them improve their understanding.
- Students need to be separated into small groups or pairs to complete the kidneys activity.
- After a group discussion of how the kidneys work, students will complete the “All about the Kidneys” handout. This can be used as classwork, homework, or an assessment.
- The teacher will talk to the students and discuss their answers to question number four when the “All about the Kidneys” handout is reviewed to introduce discussion about kidney transplants.
- The teacher will read “Kidney Transplants” and discuss a kidney transplant.
- The teacher will show students the *Mississippi, Believe It!*<sup>TM</sup> transplant poster and discuss Dr. James Hardy.

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### Guiding Questions:

1. What are the kidneys?
2. Where are your kidneys located and what do they do?
3. What body system are the kidneys located in?
4. What happens if your kidneys stop working?
5. What is a kidney transplant?
6. Where was the first kidney transplant performed?

### Activity:

The teacher will demonstrate or will have the students demonstrate how the kidneys function in the body by filtering substances through a strainer, coffee filter, and bowl. The students will break into groups and decide which one they think will be the best filter and will give an answer out loud. The teacher will explain again that the kidneys' function is to get rid of the body's waste and that when the kidneys do not function as they should then options are discussed and the conversation can lead to the option of a kidney transplant.

**Materials needed** – strainer, coffee filter, bowl, water

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**Key Vocabulary:**

- Excretory
- Kidneys
- Filter
- Waste
- Nutrients
- Transplant
- Patient
- Donor

**Resources & Materials**

- Whiteboard
- Charts/Maps
- Computer
- Smartboard
- Video/Audio
- Textbook Pages
- Workbook Pages
- Handout
- Manipulatives
- Other:

**Assessments:**

- Pre-Test
- Post-Test
- Observation
- Oral
- Writing Assessment
- Journal
- Homework
- Demonstration
- Other:

Name \_\_\_\_\_

Date \_\_\_\_\_

# Kidney Matters

Complete the crossword below.

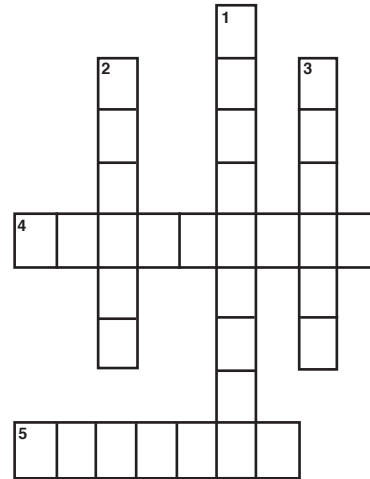
**nutrients**      **kidneys**      **waste**  
**filter**              **excretory**

**Across**

- 4. Is necessary for growth and for a healthy body
- 5. An organ that filters the blood and removes waste

**Down**

- 1. The system that is responsible for removing waste from the body
- 2. Pass through to remove unwanted material
- 3. Material that is not wanted



Name \_\_\_\_\_

Date \_\_\_\_\_

# Kidney Matters

Complete the crossword below.

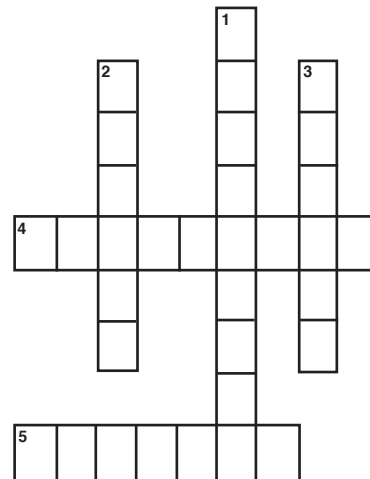
**nutrients**      **kidneys**      **waste**  
**filter**              **excretory**

**Across**

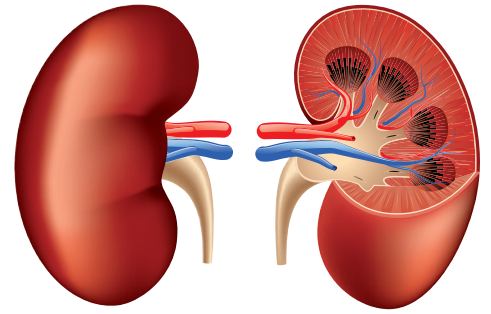
- 4. Is necessary for growth and for a healthy body
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**Down**

- 1. The system that is responsible for removing waste from the body
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## Kidney Matters



Kidneys are part of the excretory system, which means that they help filter and remove waste from your body. You have two kidneys. They are located near your hips below your stomach. Their job is to filter the waste materials out of your blood and remove the waste that your body does not need.

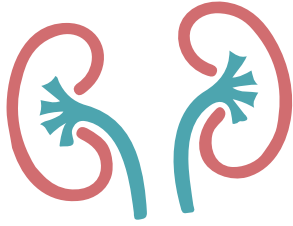
## Kidney Transplant

A kidney transplant is an operation in which a person with kidney failure receives a new kidney. The new kidney takes over the work of cleaning the blood. The first auto kidney transplant was performed by Dr. James Hardy in Jackson at the University of Mississippi Medical Center.



*Dr. James Hardy*

Name: \_\_\_\_\_



# All About the Kidneys

Answer in complete sentences.

1. Where are the kidneys located in your body?

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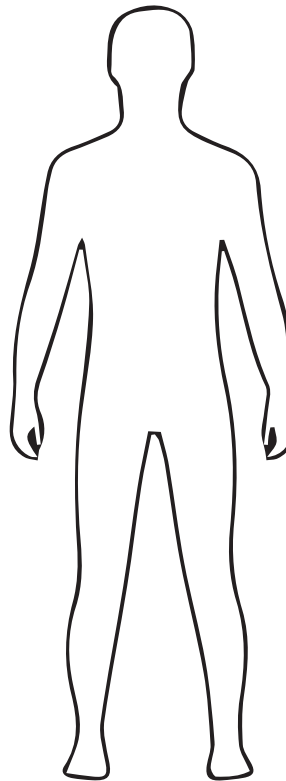
2. What do the kidneys do?

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3. Draw the kidneys on the picture to the right.



4. Predict what you think will happen if your kidneys don't work properly. Use vocabulary words to explain.

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