Lesson 35

Skills:

- ☐ Write a research report using a writing process.
- ☐ Write paragraphs using the points on an outline.
- ☐ Learn a new sight word.
- ☐ Learn about the renal system.
- ☐ Recall the parts of the digestive system.
- ☐ Use possessive nouns.
- ☐ Learn about plane geometry.
- ☐ Identify a vertex, an edge, the interior, and the exterior of a shape.
- ☐ Recognize congruent shapes.
- ☐ Learn the value of a whole note.
- ☐ Recognize a quarter note, half note, eighth note, and whole note, and clap a rhythm.
- ☐ Write a rhythm pattern using a given time signature.
- ☐ Apply scripture to daily life.

Materials:

- ❖ Life-sized body drawing from Lesson 29
- ❖ Sight word flashcard: sphincter
- ❖ Worksheets 35, 35a, 35b

Language Arts/Science/Bible:

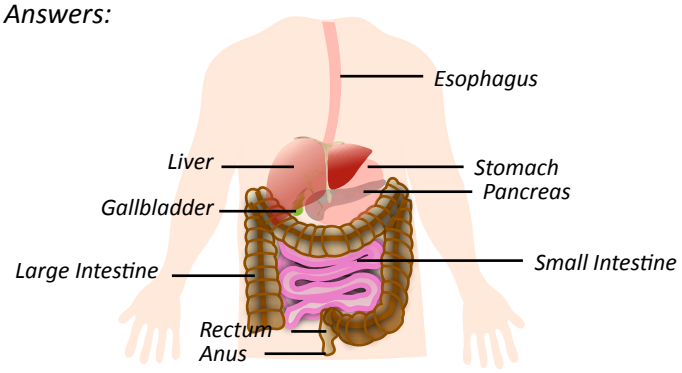
- ❖ Use a flashcard to introduce the sight word *sphincter* ("sfingk-ter").
  - Review the sight word flashcards.
  - Choose twenty words. Have the child write the word three times in cursive using his favorite color of marker or pencil.
  - Have him write four sentences using as many of the words as he can. One sentence should be a statement, one a question, one a quotation, and one an exclamation.
- ❖ Have your child continue writing his report using the points on his outline.
- ❖ Worksheet 35, part A: Have the child read the words.
- ❖ Worksheet 35, part B: Have the child read about the renal system. Have the child attach the components of the renal system to the kidneys on the life-sized body drawing from Lesson 29.
- ❖ Worksheet 35, part C: Have the child circle the correct answers.

  Answers:

  1) c. urinary
  2) b. Nephrons
  3) d. renal
  4) a. ureter
  5) b. urine
  6) d. Diuretics
  7) c. urologists

- Worksheet 35, part D: Have the child label the parts of the digestive system.

  Answers:



- Worksheet 35, part E: Have the child rewrite each sentence using a possessive noun.

  Answers:

  1) *The ureters' muscles continually tighten and relax.*
  2) *My grandfather's urologist diagnosed a urinary tract infection.*
  3) *Trish's prescription is ready to be picked up at the pharmacy.*
  4) *The kidneys' nephrons are tiny filters that remove toxins from the blood and produce urine.*
  5) *James' diuretics increase urination so he took frequent trips to the restroom.*

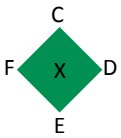
- Discuss the unit verses: *How precious to me are your thoughts, God! How vast is the sum of them! Were I to count them, they would outnumber the grains of sand— when I awake, I am still with you* (Psalm 139:17-18). How do you feel when someone tells you they are thinking of you? God thinks of us so often that David compares it to grains of sand. Even when we sleep, God is thinking of us. When we wake up, he is still thinking of us, and he knows what our first thoughts of the day will be. Do you ever feel overwhelmed and all you can pray is, "Help, God," and know that God understands you? God loves you, and you are always in his thoughts.

Math:

- Review addition facts by playing "Rock, Paper, Add."
  - Begin the game like "Rock, Paper, Scissors" with each player hitting a fist into his other palm two times. On the third time, open the fist to show the fingers.
  - Have the child say the addition problem that is shown by the fingers. For example, player one has two fingers out and player two has three fingers out. The child says, "Two plus three equals." The child adds all of the fingers together. If he knows the answer by memory, he can fill in "five" at the end of the number sentence as he says it. If he cannot remember the answer, allow him to count the fingers. Then have him say the complete number sentence, "2 + 3 = 5."
  - Continue with other addition problems.
  - Now play the game using four hands. Each player hits both fists onto his lap or the table two times.
  - On the third time, open the fists to show the fingers.
  - Have the child say the addition problem that is shown by the fingers. For example, player one has two fingers out on one hand and four fingers out on the other hand. Player two has four fingers out on one hand and five fingers out on the other hand. The child says, "Six plus nine equals." The child adds all of the fingers together. If he knows the answer by memory, he can fill in "fifteen" at the end of the number sentence as he says it. If he cannot remember the answer, allow him to count the fingers. Then have him say the complete number sentence, "6 + 9 = 15."
  - Continue with other addition problems.
  - ✶ Challenge: Have the child add two-digit numbers. For example, player one has two fingers out on one hand and four fingers out on the other hand. Player two has four fingers out on one hand and five fingers out on the other hand. The child says, "Twenty-four plus forty-five equals." The child adds the numbers together. Then have him say the complete number sentence, "24 + 45 = 69."

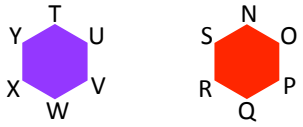
- Worksheet 35a, part A: Have the child read about plane geometry.
- Worksheet 35a, part B: Have the child answer the questions.

1) What is a line segment? (*A line segment is a part of a line and has two endpoints.*)
2) What is another name for the edge of a shape? (*An edge is also called a side.*)
3) How is a flat shape drawn? (*It is drawn by connecting points with line segments or curves.*)
4) When shapes are the same shape and size they are ____. (*congruent*)
5) What is the perimeter of a plane figure? (*It is the distance around the outside.*)
6) What is the formula used to find the perimeter of a rectangle? (*P = L + L + W + W)*
7) Name a figure that has five sides and five vertices. (*pentagon*)
8) What is the inside of a shape called? (*It is called the interior.*)
9) What is the outside of a shape called? (*It is called the exterior.*)
10) Name the vertices on the shape: (T, U, V, W, X, Y, Z)
11) Name the sides on the shape: ($\overline{TU}$, $\overline{UV}$, $\overline{VW}$, $\overline{WX}$, $\overline{XY}$, $\overline{YZ}$, $\overline{ZT}$)
12) Draw a rhombus with vertices C, D, E, F. Write an X in the interior of the shape. Color the rhombus green.



13) Draw a vertical line segment that is one and one-fourth inches long. Label it AB. (*Check your child's measurement for accuracy.*)

14) Draw two congruent hexagons. Color one purple and one red. Label the vertices on the purple hexagon T, U, V, W, X, Y. Label the vertices on the red hexagon N, O, P, Q, R, S.



15) Draw two octagons that are not congruent. (*One octagon should be larger than the other.*)

Music:

- Use worksheet 35b to teach the value of a whole note. A whole note equals the total number of beats in a measure. The whole note has no stem. In a $\frac{3}{4}$ time signature, the whole note equals three beats. In a $\frac{4}{4}$ time signature, the whole note equals four beats.
- Have the child name each of the notes.

Answers:

 *quarter note*

 *half note*

 *whole note*

 *eighth note*

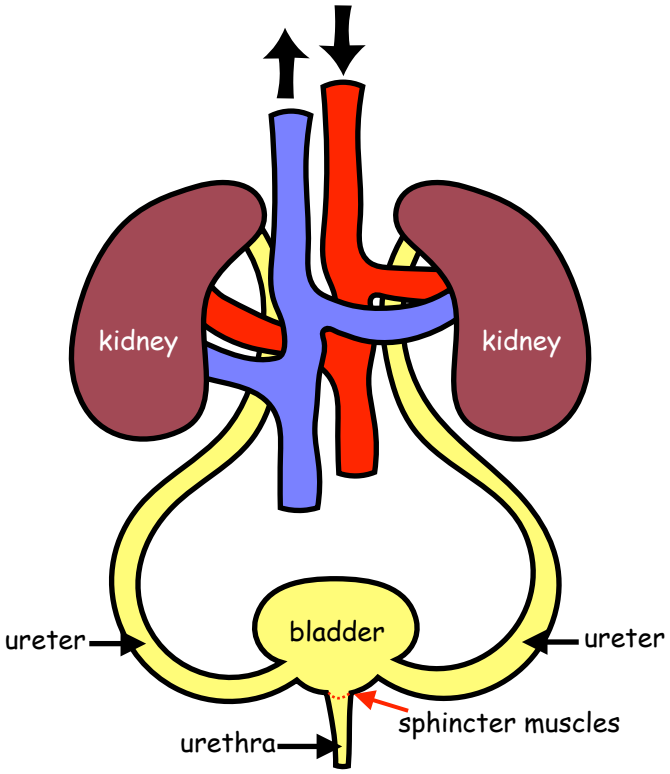
- Have the child clap each line of rhythms. A double bar line goes at the end of a piece of music. The second bar line is wider than the bar line that divides measures. Check the child's clapping rhythm for accuracy.
- Have the child write rhythm patterns using the given time signatures. Check his rhythms for accuracy.

name _____

Part A: Read the words.

metabolites	regulates	eliminates	renal	bacteria	urination
susceptible	urethra	diuretics	ureters	antibiotics	medications
nephrologists	leakage	concentrated	toxins	nephrons	electrolytes

Part B: Read about the renal system.



The renal, or urinary, system includes two kidneys, two ureters, the bladder, two sphincter muscles, and the urethra. The urinary system eliminates waste from the body, regulates blood pressure and blood volume, controls levels of metabolites and electrolytes, and regulates blood pH. Each kidney receives blood through a branch of the aorta called the renal artery. Nephrons are the most important part of the kidneys, and each kidney has about a million of them. Nephrons are tiny filters that remove toxins from the blood and produce urine. After the waste and extra fluid are removed from the blood, the urine produced by the kidneys travels through the ureters to the bladder. The muscles in the ureter walls continually tighten and relax to force urine away from the kidneys because a backup of urine can cause a kidney infection. Every ten to fifteen seconds, a small amount of urine is emptied from the ureters into the bladder. The bladder is a hollow, balloon-shaped organ that is held in place by ligaments. The bladder stores urine until the brain signals the bladder that it is time for it to be emptied. To prevent leakage, circular muscles called sphincters close tightly around the opening of the bladder into the urethra. Muscles provide control for the flow of urine as it flows into the urethra and exits the body.

Urinary system function can be affected by medications, activity, food, and beverages. Diuretics are a common treatment for high blood pressure, heart failure, edema (swollen tissues), and kidney disease. Diuretic medication helps the body rid itself of salt and water, so it increases urination. Some foods, drinks, and spices act as natural diuretics.

The renal system is susceptible to infections and other problems. Urologists are doctors who treat problems with the urinary tract. Urinary tract infections (UTIs) occur when bacteria enter the urinary tract. UTIs are treated with antibiotics. Kidney stones form when chemicals in the urine become concentrated and form a small mass. These clumps are found in the urinary tract and can cause pain in the back and sides. Nephrologists treat kidney diseases, manage complications of kidney failure, and coordinate dialysis when the kidneys do not function.

- Draw and cut out the shapes of the components of the renal system. Attach them to the kidneys on the life-sized body drawing from Lesson 29.

Part C: Circle the correct answers.

1) The renal system is also referred to as the _____ system.
   a. digestive b. circulatory c. urinary d. nervous

2) _____ are tiny filters that remove toxins from the blood and produce urine.
   a. Metabolites b. Nephrons c. Electrolytes d. Sphincters

3) Each kidney receives blood through a branch of the aorta called the _____ artery.
   a. bladder b. cardiac c. digestive d. renal

4) To avoid infection, the muscles in the _____ walls continually tighten and relax to force urine away from the kidneys.
   a. ureter b. spleen c. kidney d. esophagus

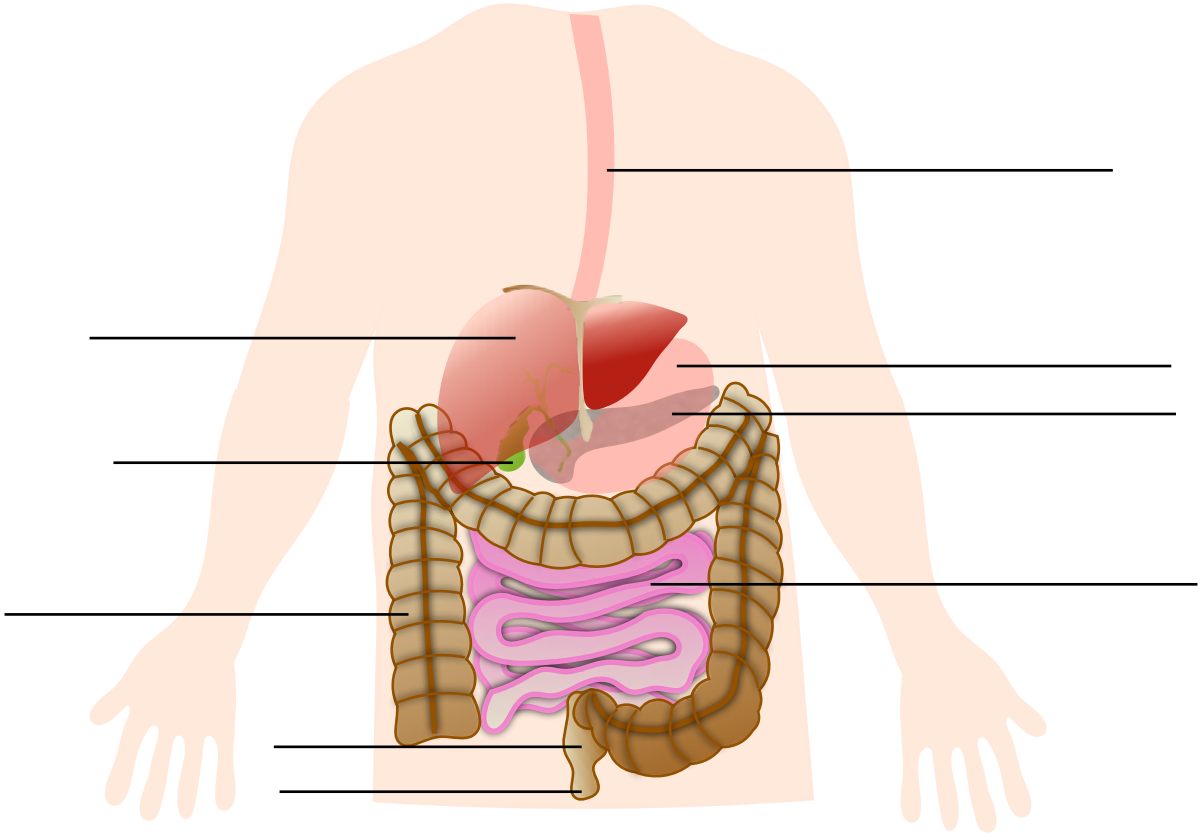
5) The bladder stores _____ until the brain signals the bladder that it is time for it to be emptied.
   a. stool b. urine c. neurons d. metabolites

6) _____ are a common treatment for high blood pressure, heart failure, edema, and kidney disease.
   a. Nephrons b. Electrolytes c. Ribosomes d. Diuretics

7) Physicians who treat problems with the urinary tract are called _____.
   a. radiologists b. cardiologists c. urologists d. neurologists

Part D: Label the parts of the digestive system.

gallbladder	small intestine	esophagus
large intestine	rectum	liver
pancreas	stomach	anus



Part E: Rewrite each sentence using a possessive noun.

1) The muscles in the ureters continually tighten and relax.

_____

_____

2) The urologist that takes care of my grandfather diagnosed a urinary tract infection.

_____

_____

3) The prescription for Trish is ready to be picked up at the pharmacy.

_____

_____

4) The nephrons in the kidneys are tiny filters that remove toxins from the blood and produce urine.

_____

_____

5) The diuretics prescribed for James increase urination so he took frequent trips to the restroom.

_____

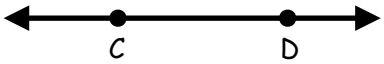
_____

name _____

Part A: Read about plane geometry. Answer the questions.

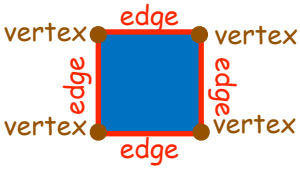
Geometry is the area of mathematics that deals with points, lines, shapes, and space. Plane geometry is about flat shapes like squares, circles, and triangles. These shapes can be drawn on a piece of paper.

A point is an exact location. It has no size, only position. In geometry, a line is straight with no curves. It has no thickness and extends in both directions infinitely (without end). A line is labeled using two points located on the line. A small line is written above the letters to show that the letters represent a line. $\overleftrightarrow{CD}$

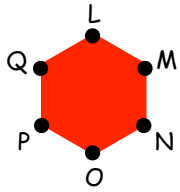


A line segment is a part of a line and has two endpoints. A flat shape can be drawn by connecting points with line segments or curves.

A vertex is the point where two or more line segments meet. The vertices (plural for vertex) are the corners of a shape. The edge of a shape is the line segment that joins two vertices. The edges are also called sides.



A vertex is usually labeled with a capital letter. The vertices on this pentagon are L, M, N, O, P, and Q.



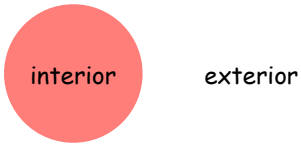
The sides, or edges, are labeled with the letters of the vertices that are joined by the line segment. The sides of the hexagon are $\overline{LM}$, $\overline{MN}$, $\overline{NO}$, $\overline{OP}$, $\overline{PQ}$, and $\overline{QL}$. A small line segment is written above the letters to show that the letters represent a line segment.

A square has four edges and four vertices. What other shapes have four edges and four vertices? A rhombus, a rectangle, a trapezoid, and a parallelogram all have four edges and four vertices.

Figures that are the same size and same shape are called congruent. These two triangles are congruent.

These trapezoids are not congruent. They are the same shape, but not the same size.

The inside of a shape is called the interior. The outside of a shape is called the exterior.



The perimeter of a plane figure is the distance around the outside. Measure the length of each edge or side, and add the lengths together. The distance around a circle or oval is called the circumference. These shapes do not have edges, so a ruler can't be used to measure the distance around the outside.

Part B: Answer the questions.

1) What is a line segment?_____

_____

2) What is another name for the edge of a shape?_____

3) How is a flat shape drawn?_____

_____

4) When shapes are the same shape and size they are _____.

5) What is the perimeter of a plane figure? _____

_____

6) What is the formula used to find the perimeter of a rectangle? _____

7) Name a figure that has five sides and five vertices. _____

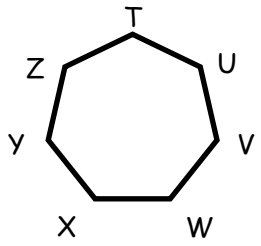
8) What is the inside of a shape called? _____

9) What is the outside of a shape called? _____

10) Name the vertices: _____, _____, _____, _____, _____, _____, _____

11) Name the sides: _____, _____, _____,

_____, _____, _____, _____



12) Draw a rhombus with vertices C, D, E, F.
Write an X in the interior of the shape. Color the rhombus green.

13) Draw a vertical line segment that is one and one-fourth inches long. Label it AB.

14) Draw two congruent hexagons. Color one purple and one red. Label the vertices on the purple hexagon T, U, V, W, X, Y. Label the vertices on the red hexagon N, O, P, Q, R, S.

15) Draw two black octagons that are not congruent.

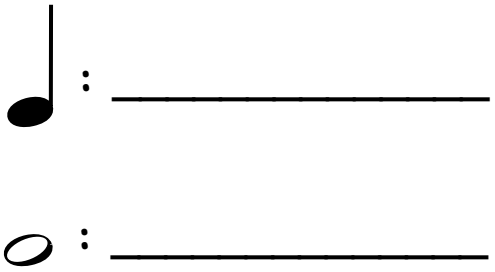
name _____

A whole note equals the total number of beats in a measure. The whole note has no stem.

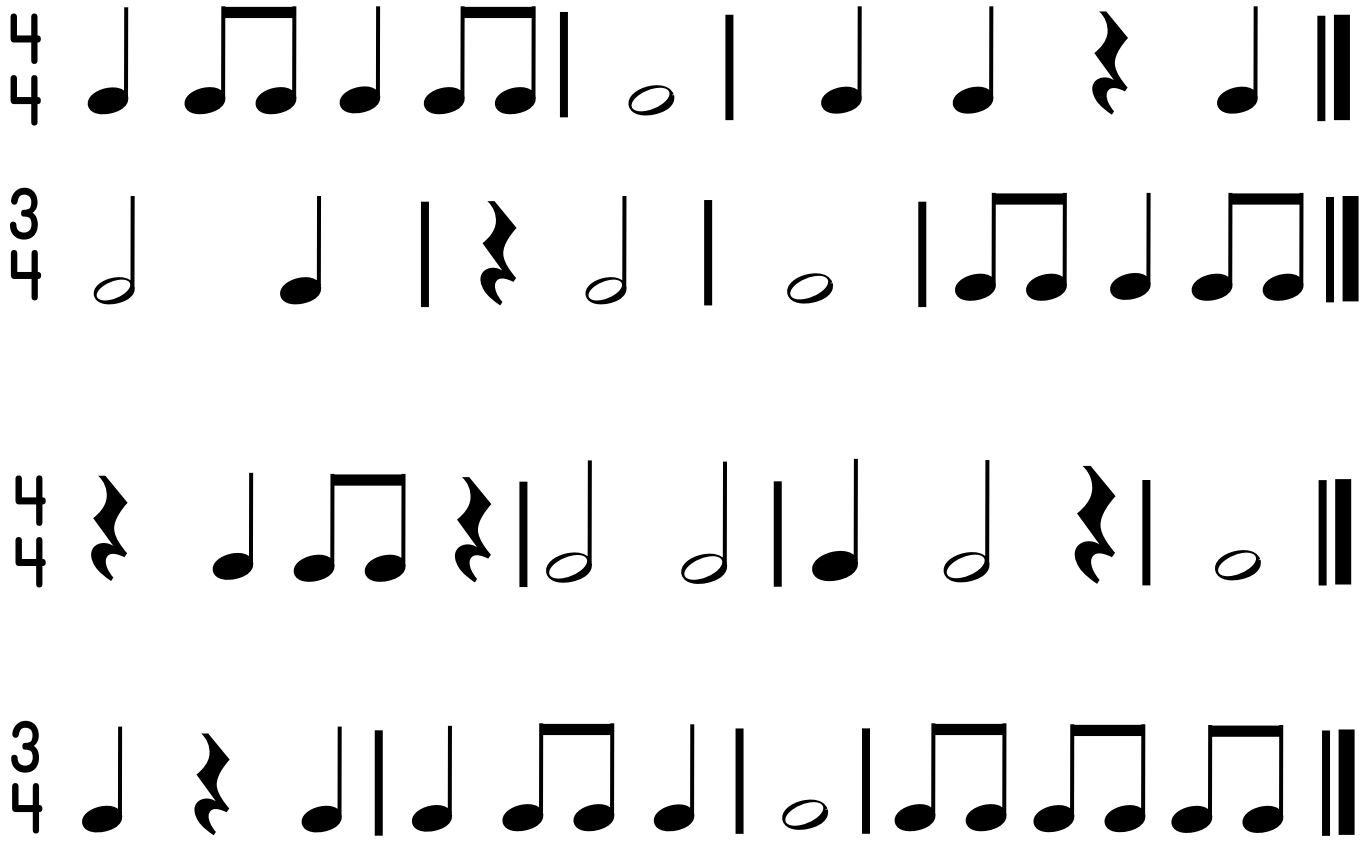
In a $\frac{3}{4}$ time signature, the whole note equals three beats.

In a $\frac{4}{4}$ time signature, the whole note equals four beats.

Name each of the notes.



Clap each line of rhythms. A double bar line goes at the end of a piece of music. The second bar line is wider than the bar line that divides measures.



Write rhythm patterns using the given time signatures. Use eighth notes, quarter notes, quarter rests, half notes, and whole notes.