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| Topic/Objectives: 16-1 Kidneys; Identify and understand the function of the macroscopic and microscopic structures of the kidney and supporting tissues of the urinary system, including its vascular system. | Name: |
| | Date: |
| | Period: |

Essential Question: How are the renal structures organized to promote proper kidney function?

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| Questions: | Notes: <p>The urinary system consists of two kidneys that filter the blood, two ureters, a _____, and a urethra to convey waste substances to the outside.</p> <p>The _____ is a reddish-brown, bean-shaped organ 12 centimeters long that is enclosed in a fibrous capsule; located on each side of the first three lumbar vertebrae.</p> <p>Kidney Functions</p> <ul style="list-style-type: none"> ◦ The kidneys function to regulate the volume, _____, and pH of body fluids and remove metabolic wastes from the blood in the process. ◦ The kidneys also help control the rate of red blood cell formation by secreting _____, and regulate blood pressure by secreting renin. |
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| | <p>Kidney Structure</p> <ul style="list-style-type: none"> ◦ Blood vessels, nerves, lymphatic vessels, and the ureter enter the kidney at the _____. ◦ Inside the renal sinus lies a renal pelvis that is subdivided into major and minor _____; small renal papillae project into each minor calyx. ◦ Two distinct regions are found within the kidney: a renal medulla and a renal cortex. <ul style="list-style-type: none"> ◦ The renal medulla houses tubes leading to the _____. ◦ The renal cortex contains the _____, the functional units of the kidney. |
| <p>Nephron Structure</p> <ul style="list-style-type: none"> ◦ A kidney contains one million nephrons, each of which consists of two parts: <ul style="list-style-type: none"> ◦ The _____ is the filtering portion of the nephron; it is made up of a ball of capillaries called the glomerulus and a glomerular capsule that receives the filtrate. ◦ The _____ leads away from the glomerular capsule and first becomes a highly coiled proximal convoluted tubule, then leads to the _____, and finally to the distal convoluted tubule. ◦ _____ distal convoluted tubules join to become a collecting duct. | |

