



Lesson Plan: Providing Fuel and Transportation

Grade Level: 6

Subject: Life Science

Duration: 45–60 min

NGSS MS-PS1-1: Develop models to describe the atomic composition of simple molecules and extended structures.

Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** the major organs and systems involved in providing fuel and transportation in the human body.
- **Describe** how the digestive system breaks down food into nutrients that provide energy.



PREVIEW

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veins.

- **Complex carbohydrates:** Very large, energy-rich molecules made up of many smaller units of carbohydrate and found in many plant foods such as rice and grains.
- **Emphysema:** A disease of the lungs very common in smokers, where the air spaces enlarge to where they no longer function.

 **Materials Needed:** (all links are included in this PDF)



- Printed copies of Worksheet 0 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-0.pdf>)
- Printed copies of Worksheet 1 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-1.pdf>)
- Printed copies of Worksheet 2 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-2.pdf>)
- Printed copies of Worksheet 3 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-3.pdf>)
- Vocabulary matching worksheet (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-providing-fuel-and-transportation-2028-1.pdf>)
- Chart paper or whiteboard
- Markers or colored pencils
- Human body diagram or model showing digestive, circulatory, and respiratory systems



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- Explain the role of bile in fat digestion and how the liver produces bile that aids in the digestion of fats.
 - Introduce the circulatory system, describing how blood vessels (arteries, veins, and capillaries) transport oxygen and nutrients. Show how blood flows from arteries to capillaries to veins.
 - Discuss the respiratory system, explaining how oxygen enters the bloodstream through alveoli in the lungs and how carbon dioxide is removed.
- (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-1.pdf>)



Step 3: Guided Practice (15 minutes)

- Distribute the vocabulary matching worksheet and work through it as a class, reinforcing key terms such as alveoli, capillaries, bile, and ATP.
(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-providing-fuel-and-transportation-2028-1.pdf>)
- Use Worksheet 0 to review the digestive organs and their functions. Have students identify structures such as the stomach, liver, and intestines.
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-0.pdf>)
- Discuss how the circulatory and respiratory systems work together, using diagrams from Worksheet 1 to show the path of blood flow and gas exchange.
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-1.pdf>)

Step 4: Independent Practice (15 minutes)



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([fuel-and-transportation-2028-0.pdf](https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-0.pdf))

- Have students classify the following as part of the digestive, circulatory, or respiratory system: stomach, capillaries, alveoli, liver, heart, bronchi.

💡 Differentiation Strategies

For advanced learners:



- Challenge advanced learners to research and present on a specific disease affecting one of the body systems, such as emphysema in the respiratory system or heart disease in the circulatory system.
- Have students create a detailed flowchart showing the journey of a nutrient molecule from ingestion to cellular use, including all organs and systems involved.

For learners needing support:

- Provide students needing support with a pre-labeled diagram of the human body systems, highlighting the digestive, circulatory, and respiratory organs.
- Offer one-on-one assistance during independent practice, using simplified diagrams and guiding students through the identification of key structures.

Extension Activities



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<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-1.pdf>

- Worksheet 2 - Respiratory and Excretory Systems
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-2.pdf>)
- Worksheet 3 - Digestive System and Nutrient Absorption
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-providing-fuel-and-transportation-2028-3.pdf>)
- Vocabulary Set 1 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-providing-fuel-and-transportation-2028-1.pdf>)



- Vocabulary Set 2 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-providing-fuel-and-transportation-2028-2.pdf>)
- Vocabulary Set 3 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-providing-fuel-and-transportation-2028-3.pdf>)



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Name _____ Class _____ Date _____

1

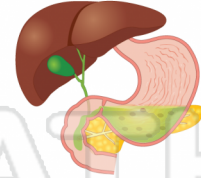
Having **too much cholesterol** in your diet can cause _____.

- A** cancer
- B** heart disease
- C** bacterial infection
- D** viral infection

**2**

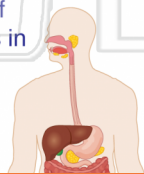
The liver produces **bile** that aids in the **digestion of** _____.

- A** proteins
- B** carbohydrates
- C** fats
- D** minerals

**3**

Chemical digestion of carbohydrates begins in the _____.

- A** stomach
- B** mouth

**4**

The _____ releases the **greatest number of enzymes** into the intestines to chemically digest proteins, carbohydrates and fats.

- A** pancreas

**5**

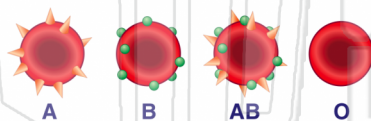
PREVIEW

7

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9

Blood type O has which type of **marker molecules** attached to the blood?

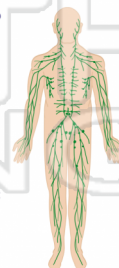


- A** A
- B** A and B
- C** B
- D** none

10

What are the **lymph nodes**?

- A** part of the lymph
- B** veinlike structures that bring the lymph back to the bloodstream.
- C** the pump of the lymphatic system
- D** structures that filter lymph





Name _____ Class _____ Date _____

1

Having **too much cholesterol** in your diet can cause _____.

- A cancer
- B heart disease
- C bacterial infection
- D viral infection

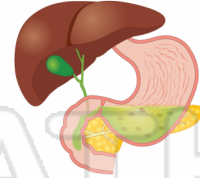


B

2

The liver produces **bile** that aids in the **digestion of** _____.

- A proteins
- B carbohydrates
- C fats
- D minerals

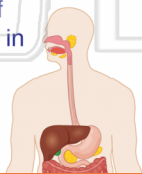


C

3

Chemical digestion of carbohydrates begins in the _____.

- A stomach
- B mouth



B

4

The _____ releases the **greatest number of enzymes** into the intestines to chemically digest proteins, carbohydrates and fats.

- A pancreas



A

5



A

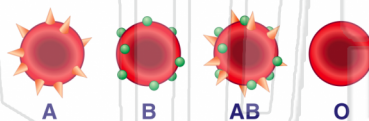
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D

9

Blood type O has which type of **marker molecules** attached to the blood?



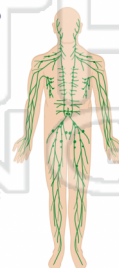
- A A
- B A and B
- C B
- D none

D

10

What are the **lymph nodes**?

- A part of the lymph
- B veinlike structures that bring the lymph back to the bloodstream.
- C the pump of the lymphatic system
- D structures that filter lymph



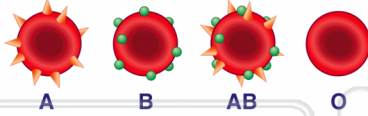
D



Name _____ Class _____ Date _____

1

Blood type O has which type of **marker molecules** attached to the blood?

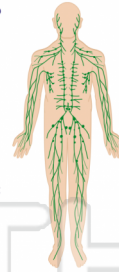


- A** A
- B** A and B
- C** B
- D** none

2

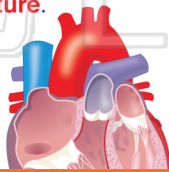
What are the **lymph nodes**?

- A** part of the lymph
- B** veinlike structures that bring the lymph back to the bloodstream.
- C** the pump of the lymphatic system
- D** structures that filter lymph

**3**

Identify this **heart structure**.

- A** right atrium
- B** left atrium
- C** right ventricle
- D** left ventricle

**4**

By weight, the **human body** is _____ **water**.

- A** 20-30%
- B** 50-60%
- C** 70-80%

**5**

PREVIEW

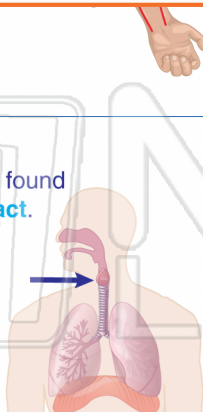
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9

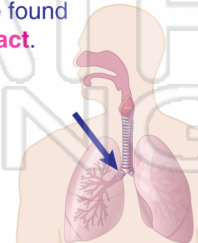
Identify this structure found in the **respiratory tract**.

- A** larynx
- B** trachea
- C** bronchus
- D** alveolus

**10**

Identify this structure found in the **respiratory tract**.

- A** larynx
- B** trachea
- C** bronchus
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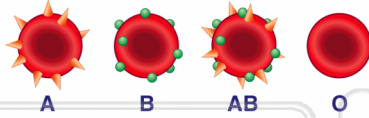




Name _____ Class _____ Date _____

1

Blood type O has which type of **marker molecules** attached to the blood?

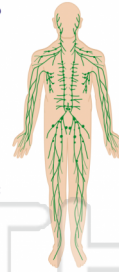


- A** A **C** B
B A and B **D** none

D**2**

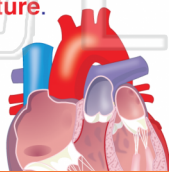
What are the **lymph nodes**?

- A** part of the lymph
B veinlike structures that bring the lymph back to the bloodstream.
C the pump of the lymphatic system
D structures that filter lymph

**D****3**

Identify this **heart structure**.

- A** right atrium
B left atrium
C right ventricle
D left ventricle

**C****4**

By weight, the **human body** is **water**.

- A** 20-30%
B 50-60%
C 70-80%

**B****5****B**

PREVIEW

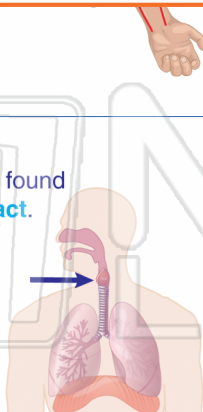
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B**9**

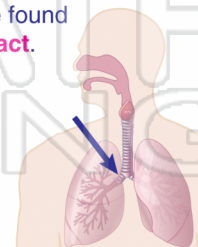
Identify this structure found in the **respiratory tract**.

- A** larynx
B trachea
C bronchus
D alveolus

**A****10**

Identify this structure found in the **respiratory tract**.

- A** larynx
B trachea
C bronchus
D alveolus

**C**

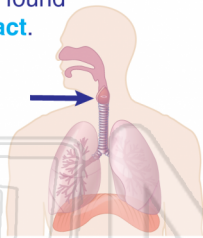


Name _____ Class _____ Date _____

1

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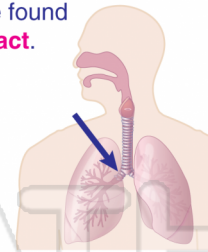
- A larynx
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2

Identify this structure found in the **respiratory tract**.

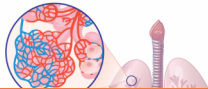
- A larynx
- B trachea
- C bronchus
- D alveolus



3

Oxygen within the air we breathe into our system **enters into the bloodstream** at the site of the _____.

- A alveoli
- B trachea



4

The **noises** we make when we **talk** come from actions within the _____.

- A pharynx
- B trachea



5



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- B vitamin C
- C magnesium
- D calcium



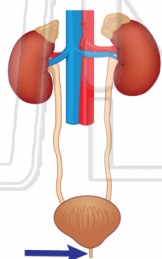
D urethra



9

Identify this **excretory system** structure.

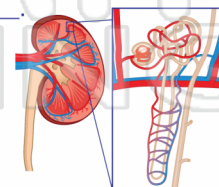
- A kidney
- B ureter
- C urinary bladder
- D urethra



10

Within the kidney, there are millions of **filtration and tubular structures** called _____.

- A nephrons
- B neurons
- C ureters
- D capillaries



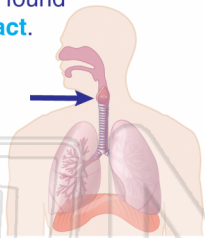


Name _____ Class _____ Date _____

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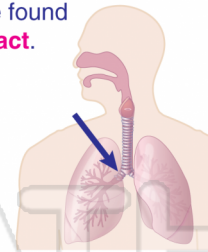


A

2

Identify this structure found in the **respiratory tract**.

- A larynx
- B trachea
- C bronchus
- D alveolus



C

3

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A

4

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C

5



A

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A

- B vitamin C
- C magnesium
- D calcium



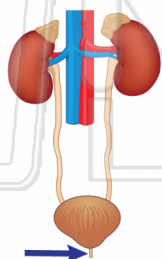
D urethra



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- A kidney
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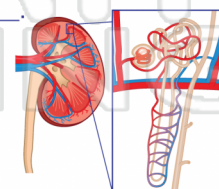


D

10

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A

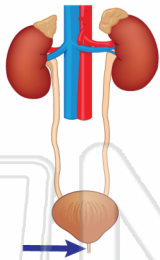


Name _____ Class _____ Date _____

1

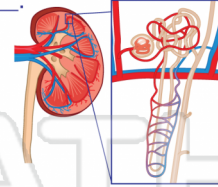
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**2**

Within the kidney, there are millions of **filtration and tubular structures** called _____.

- A nephrons
- B neurons
- C ureters
- D capillaries

**3**

In addition to what is excreted from the urinary system, **fluid** can also be **excreted** from the _____.

- A liver

**4**

We get most of the **protein** we need in our diet from animal **meats**, **legumes** (peas/beans) and **nuts**.

True or False?

True

**5**

PREVIEW

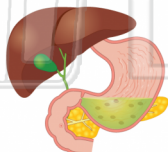
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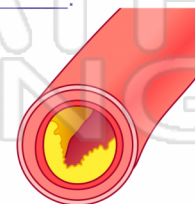
The **stomach** releases juices that mix with food we eat to start the process of **chemical digestion** of _____.

- A proteins
- B carbohydrates
- C fats
- D vitamins

**10**

Having **too much cholesterol** in your diet can cause _____.

- A cancer
- B heart disease
- C bacterial infection
- D viral infection



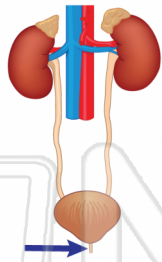


Name _____ Class _____ Date _____

1

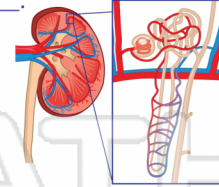
Identify this **excretory system** structure.

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**D****2**

Within the kidney, there are millions of **filtration and tubular structures** called _____.

- A nephrons
- B neurons
- C ureters
- D capillaries

**A****3**

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- A liver

**B****4**

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True or False?

True

**A****5****C**

PREVIEW

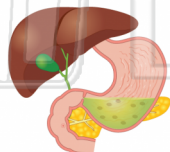
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B**9**

The **stomach** releases juices that mix with food we eat to start the process of **chemical digestion** of _____.

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- B carbohydrates
- C fats
- D vitamins

**A****10**

Having **too much cholesterol** in your diet can cause _____.

- A cancer
- B heart disease
- C bacterial infection
- D viral infection

**B**



Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Capillaries

Alveoli

Bile

Emphysema

ATP

Amino acids

Bronchi

Complex carbohydrates

1. - tiny air spaces within the lungs where gases (oxygen and carbon dioxide) are exchanged between the air space and blood capillaries that surround these spaces

2. - the simplest form of protein that can be absorbed across the intestinal walls

3. source

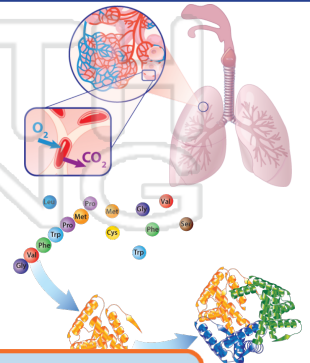
4. tempo help in

5. to car

6. netwo

7. - very large, energy-rich molecules made up of many smaller units of carbohydrate and found in many plant foods such as rice and grains

8. - a disease of the lungs very common in smokers, where the air spaces enlarge to where they no longer function

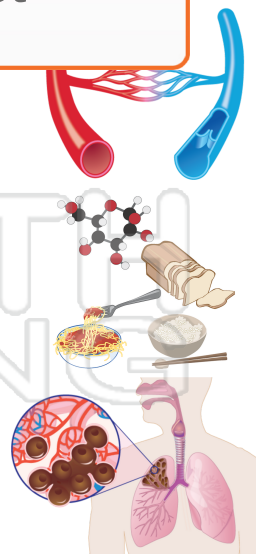


phosphates



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Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Capillaries

Alveoli

Bile

Emphysema

ATP

Amino acids

Bronchi

Complex carbohydrates

1. alveoli - tiny air spaces within the lungs where gases (oxygen and carbon dioxide) are exchanged between the air space and blood capillaries that surround these spaces

2. amino acids - the simplest form of protein that can be absorbed across the intestinal walls

3. ATP
energy

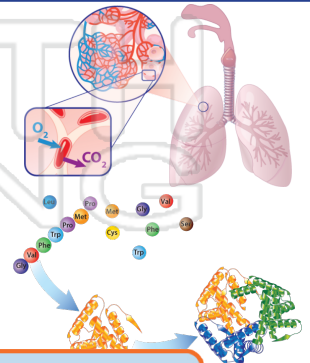
4. bile
before

5. bro
out of

6. cap
betwe

7. complex carbohydrates - very large, energy-rich molecules made up of many smaller units of carbohydrate and found in many plant foods such as rice and grains

8. emphysema - a disease of the lungs very common in smokers, where the air spaces enlarge to where they no longer function



phates
P P



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