

**SNC2D  
BIOLOGY**

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TISSUES, ORGANS & SYSTEMS OF ...  
 🐾 Animal Systems Working Together  
 (P.78-81)

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**Activity: Interactions of Animal Organ Systems**

**INTRODUCTION**  
 When you exercise or play sports, you are moving your muscles. As a result, your heart rate and breathing increases because your muscles need more oxygen and energy. This is evidence that your respiratory and circulatory systems are working together to respond to the needs of your muscles.

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**Activity: Interactions of Animal Organ Systems**

**QUESTIONS**  
 1. How do your muscle cells get what they need (i.e. oxygen, glucose and water)? Use a chart similar to the one below to answer the question.

Substance	Where it comes from	Where it first enters the body	How it is transported to the muscle cells
oxygen (O <sub>2</sub> )			
glucose (sugar)			
water (H <sub>2</sub> O)			

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### Activity: Interactions of Animal Organ Systems

Substance	Where it comes from	Where it first enters the body	How it is transported to the muscle cells
oxygen (O <sub>2</sub> )	air (breathing)	nose/mouth to respiratory system	<ul style="list-style-type: none"> <li>oxygen moves from lungs to circulatory system</li> <li>red blood cells carry it to muscle cells</li> </ul>
glucose (sugar)	food (eating)	mouth to digestive system	<ul style="list-style-type: none"> <li>digestive organs break down food molecules</li> <li>glucose &amp; nutrients move into circulatory system</li> <li>blood takes nutrients to muscle cells</li> </ul>
water (H <sub>2</sub> O)	liquids (eating & drinking)	mouth to digestive system	<ul style="list-style-type: none"> <li>digestive organs use some water</li> <li>rest moves into circulatory system which takes water to muscle cells</li> </ul>

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### Animal Organ Systems Working Together

*Our body systems function in a way to maintain **homeostasis**, which means "steady state". Generally, this means that there is an acceptable range of physical and chemical conditions in which body cells, tissues, and organs can operate efficiently.*

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### Animal Organ Systems Working Together

*To keep the body within this acceptable range, different organ systems must work together to maintain homeostasis in the body. Some systems are in charge of bringing substances into our bodies. These systems help us to obtain the oxygen, water, and nutrients that our cells need. Another system moves these substances to where they are needed in our bodies.*

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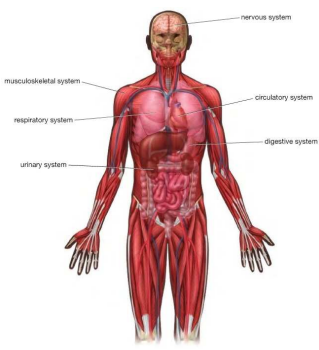
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### Animal Organ Systems Working Together

*Other organ systems change these substances into forms our bodies can use. Several other organ systems remove the wastes left over from this process. All of these organ systems work together to keep us alive and healthy. So organ systems are said to be **interdependent**.*



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### Animal Organ Systems Working Together

**ANIMAL ORGAN SYSTEMS**

- ❖ perform basic life functions
- ❖ are interdependent (i.e. interact with at least one other system)
  - respiratory system obtains oxygen that cells need
  - digestive system breaks down food into nutrients that cells can use
  - circulatory system interacts with all organ systems in the body delivering oxygen and nutrients and removing carbon dioxide and wastes

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### ✓ Check Your Learning

1. What are three substances that muscles need? How are they obtained?

- oxygen – air (breathing)
- glucose – food (eating)
- water – liquids (eating/drinking)

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**✓ Check Your Learning**

2. What is the main function of each of the circulatory, respiratory, and digestive systems?

- circulatory system interacts with all organ systems in the body delivering oxygen and nutrients and removing carbon dioxide and wastes
- respiratory system obtains oxygen that cells need
- digestive system breaks down food into nutrients that cells can use

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**✓ Check Your Learning**

3. What organ system interacts with all the other organ systems in the animal body? Why is this interaction necessary?

the circulatory system interacts with all the organ systems in the animal body in order to deliver oxygen and nutrients and remove carbon dioxide and wastes

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**✓ Check Your Learning**

4. When you are performing a vigorous physical activity on a sunny day, numerous organ systems within the human body are working together to maintain a state of homeostasis. With the aid of a flowchart explain this interaction.

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 **Check Your Learning**

**TEXTBOOK**  
P.81 Q.1,2

**WIKI (BIOLOGY)**  
 2DBIOL - WS6 (Animal Organ Systems Working Together)  
 2DBIOL - QUIZ3 (Chapter 2)

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