

Biology > Big idea BCL: The cellular basis of life > Topic BCL2: From cells to organ systems

Key concept (age 11-14)

BCL2.1: Working together – cells, tissues and organ systems

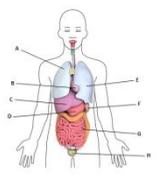
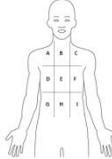
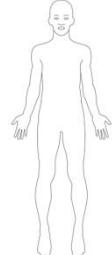
Progression toolkit: Working together – cells, tissues and organ systems

Learning focus	The cells of multicellular organisms are organised into tissues, organs and organ systems that work together to keep the cells alive.				
As students' conceptual understanding progresses they can:					
As students' conceptual understanding progresses they can:	Recall that multicellular organisms have different parts with different functions. P	Recall that the parts of a multicellular organism are made up of cells.	Explain what cells must be supplied with in order to stay alive.	Distinguish between cells, tissues, organs and organ systems.	Apply the idea that life in multicellular organisms depends upon tissues, organs and organ systems working together to keep the cells alive.
Diagnostic questions	Body parts <hr/> Where is it?	Body cells	Animal cell needs	Cells, tissues and organs	Brain cell
Response activities	Draw what's inside you		What do cells need?	Talking about cells, tissues and organs	

Key:

P Prior understanding from earlier stages of learning

B Bridge to later stages of learning

<p style="text-align: center;">Body parts</p>  <p>1. Which part pumps blood around the body?</p> <p>2. What is the name of the part you chose in question 1?</p> <p>A. Heart B. Intestine C. Lung D. Stomach</p> <p style="text-align: center;">Two-tier multiple choice</p>	<p style="text-align: center;">Where is it?</p>  <p>1. In which labelled part of the human body is the heart?</p> <p style="text-align: center;">Simple multiple choice</p>	<p style="text-align: center;">Body cells</p>  <p>Which statement about the human body is true?</p> <p>A. The body contains cells. B. The body is a cell. C. The body is made up of cells. D. Cells are only found between the organs.</p> <p style="text-align: center;">Simple multiple choice</p>	<p style="text-align: center;">Animal cell needs</p>  <p>The cells of humans and other animals need particular things to stay alive. Draw straight lines to join the boxes to represent what animal cells need and what they do with it.</p> <table border="0"> <tr> <td style="vertical-align: top;"> <p>What animal cells need</p> <p>Glucose</p> <p>Oxygen</p> <p>Water</p> </td> <td style="vertical-align: top;"> <p>What animal cells do with it</p> <p>Use it in cellular respiration to produce energy</p> <p>Use it to breathe</p> <p>Use it to make food</p> <p>Use it to drink and transport dissolved substances</p> </td> </tr> </table> <p style="text-align: center;">Linking ideas</p>	<p>What animal cells need</p> <p>Glucose</p> <p>Oxygen</p> <p>Water</p>	<p>What animal cells do with it</p> <p>Use it in cellular respiration to produce energy</p> <p>Use it to breathe</p> <p>Use it to make food</p> <p>Use it to drink and transport dissolved substances</p>	<p style="text-align: center;">Cells, tissues and organs</p>  <p>Read the statements in the table. Tick one box for each statement.</p> <table border="1"> <thead> <tr> <th>Statements</th> <th>I am sure it's right</th> <th>I think it's right</th> <th>I think it's wrong</th> <th>I am sure it's wrong</th> </tr> </thead> <tbody> <tr> <td>1. Cells contain organs that vary out the photosynthesis.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2. Cells, tissues and organs are roughly the same size.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3. Tissues are made up of cells.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. Organs are made up of tissues.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5. Plants are also made up of tissues.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6. Plants do not have organs.</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;">Confidence grid</p>	Statements	I am sure it's right	I think it's right	I think it's wrong	I am sure it's wrong	1. Cells contain organs that vary out the photosynthesis.					2. Cells, tissues and organs are roughly the same size.					3. Tissues are made up of cells.					4. Organs are made up of tissues.					5. Plants are also made up of tissues.					6. Plants do not have organs.				
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<p style="text-align: center;">Brain cell</p>  <p>1. How does a cell in the brain get oxygen?</p> <p>A. It makes its own oxygen. B. It takes oxygen from the air. C. It takes oxygen from the lungs. D. It takes oxygen from the blood.</p> <p>2. How would you explain your answer to question 1?</p> <p>A. The lungs absorb oxygen from air we breathe in. B. The circulatory system carries oxygen from air in the lungs to all cells in the body. C. Oxygen is made by cellular respiration. D. Oxygen from air diffuses through the body to all of its cells.</p> <p style="text-align: center;">Two-tier multiple choice</p>	<p style="text-align: center;">Draw what's inside you</p>  <p>Where would you put the parts to complete the table?</p> <table border="1"> <thead> <tr> <th>What animals need</th> <th>Why animals need it</th> <th>What animal cells do with it</th> </tr> </thead> <tbody> <tr> <td>Air</td> <td></td> <td></td> </tr> <tr> <td>Water</td> <td></td> <td></td> </tr> <tr> <td>Food</td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;">Drawing, discussion</p>	What animals need	Why animals need it	What animal cells do with it	Air			Water			Food			<p style="text-align: center;">What do cells need?</p> <p>Animal cells</p> <p>The table shows some things that animals need to stay alive. To talk about in your group. Where would you put the parts to complete the table?</p> <table border="1"> <thead> <tr> <th>What animals need</th> <th>Why animals need it</th> <th>What animal cells do with it</th> </tr> </thead> <tbody> <tr> <td>Air</td> <td></td> <td></td> </tr> <tr> <td>Water</td> <td></td> <td></td> </tr> <tr> <td>Food</td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;">Discussion, card-sort</p>	What animals need	Why animals need it	What animal cells do with it	Air			Water			Food			<p style="text-align: center;">Talking about cells, tissues and organs</p>  <p>1. Who do you agree with? 2. Who do you disagree with, and why? 3. How would you explain the right idea to these children?</p> <p style="text-align: center;">Talking heads, discussion</p>														
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