# TERM 1: WEEK 11 – 12 (13th – 24th April)

# Strand 2: Genetics

## Sub-strand 2.2 Diversity and relatedness of organisms

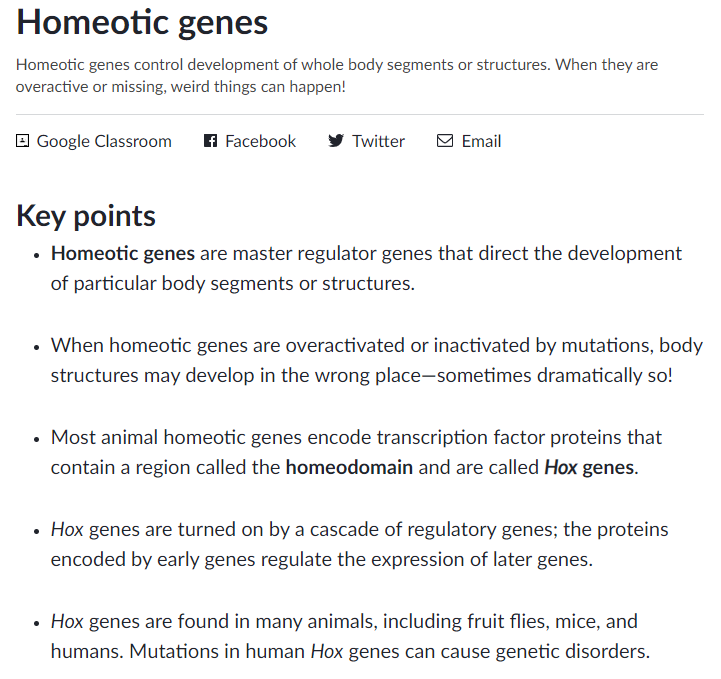
### Lesson Activity 2.2

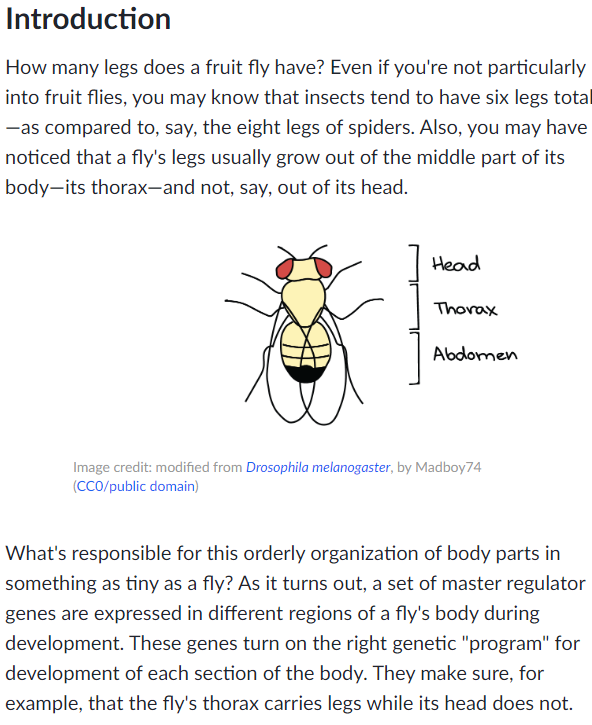
**The specific learning outcomes (SLO) targeted in this activity are provided below:**

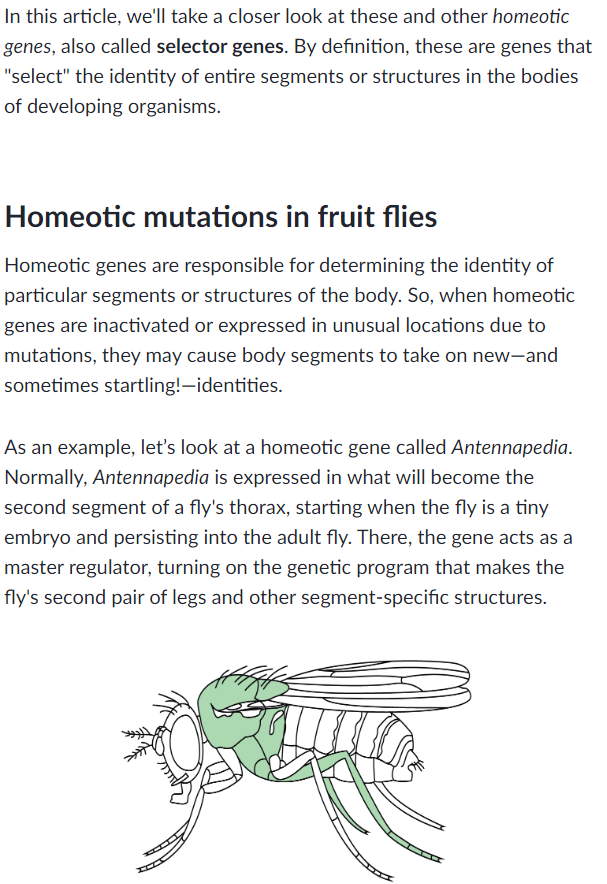
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| --- | --- | --- | --- |
| **Specific Learning Outcomes:** Students are able to | **Skill level** | **SLO code** | **Achieved**  **(Yes / No)** |
| Define homeotic genes | 1 | Bio2.2.1.1 |  |
| Explain the control of homeotic genes on major body plans | 3 | Bio2.2.3.3 |  |
| List/Describe the different levels of organization (cells, DNA and organism) leading to common origin of species | 2 | Bio2.2.2.3 |  |
| Explain the similarities or differences between the different levels of organization | 3 | Bio2.2.3.4 |  |
| Describe the different stages of the embryonic development in vertebrates | 2 | Bio2.2.2.2 |  |

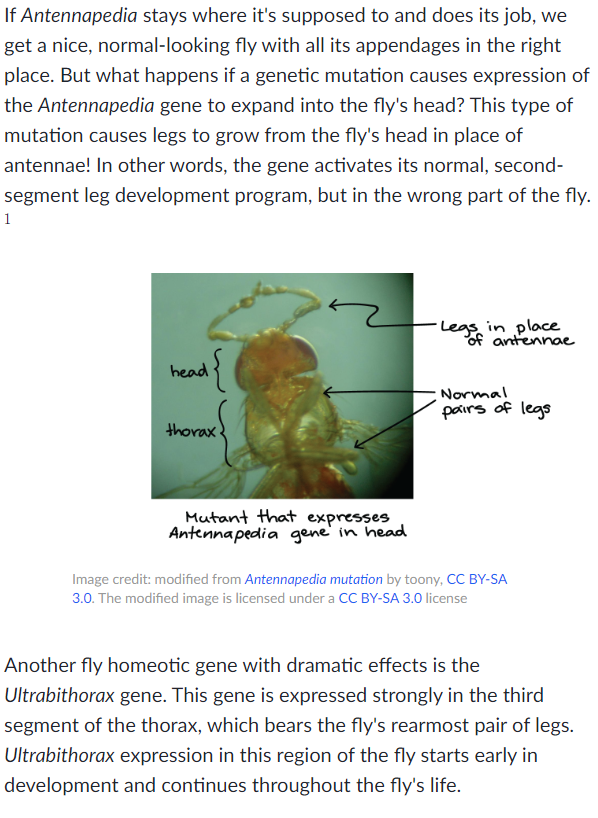
**Instructions:**

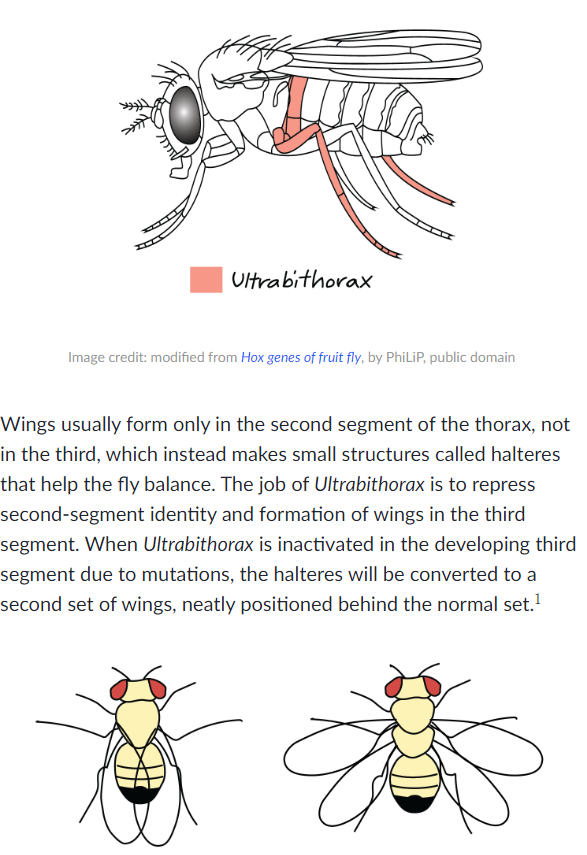
1. If you have access to the internet, refer to Central School’s website: [www.centralschool.edu.vu](http://www.centralschool.edu.vu), Year 12 Biology folder Term 1 Week 11 – 12, to access other resources.
2. Answer the following questions.
3. **Homeotic genes**

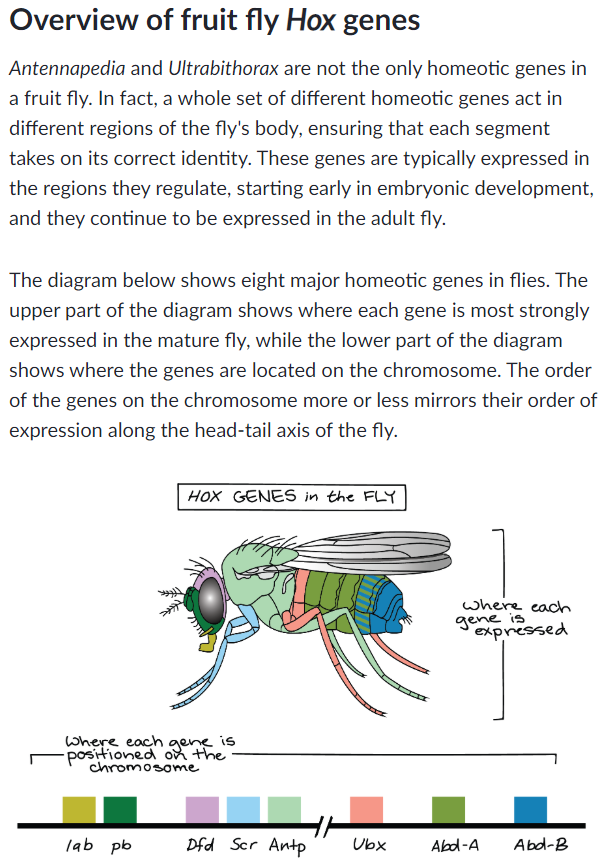


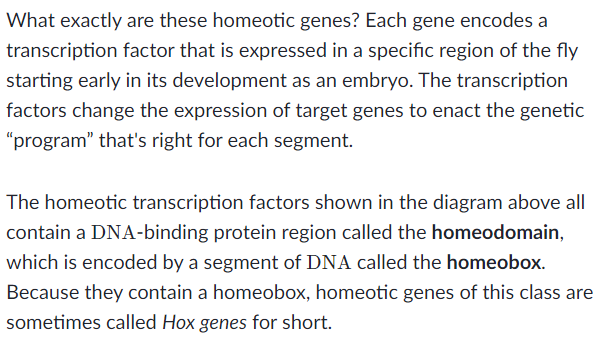




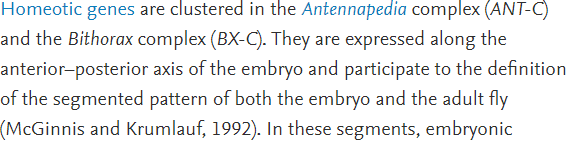








(Source: <https://www.khanacademy.org/science/biology/developmental-biology/signaling-and-transcription-factors-in-development>)



(Source: <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences>)

1. Define homeotic genes

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1. Explain how homeotic genes control major body plans of Drosophila.

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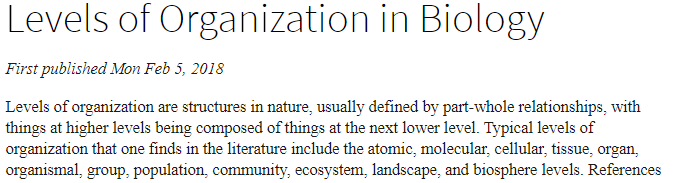
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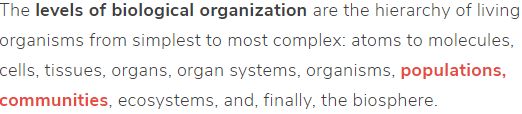
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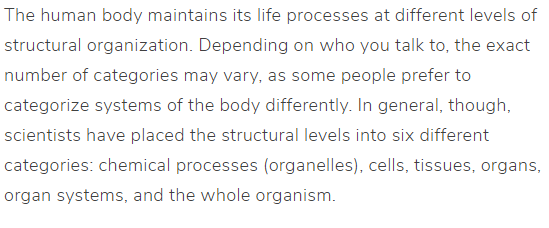
1. Levels of organization

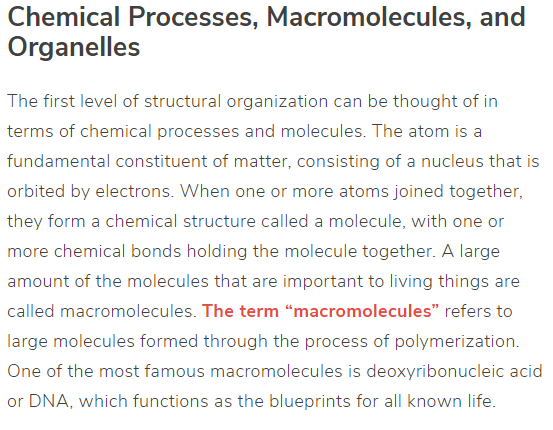


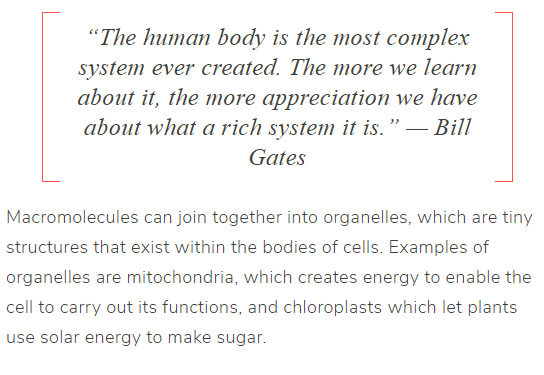
(Source: <https://plato.stanford.edu/entries/levels-org-biology/>)

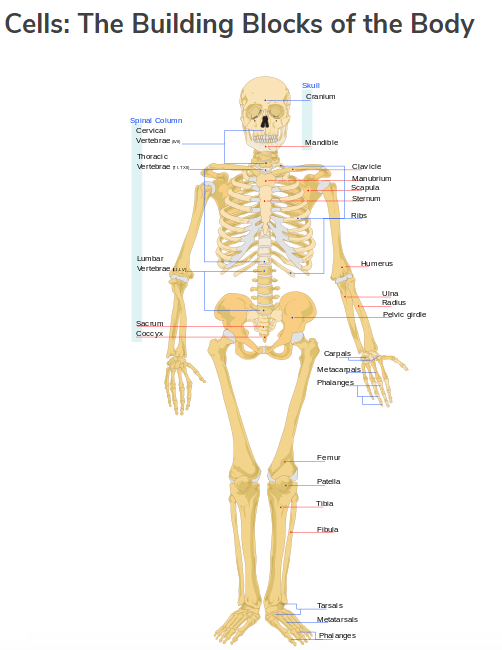


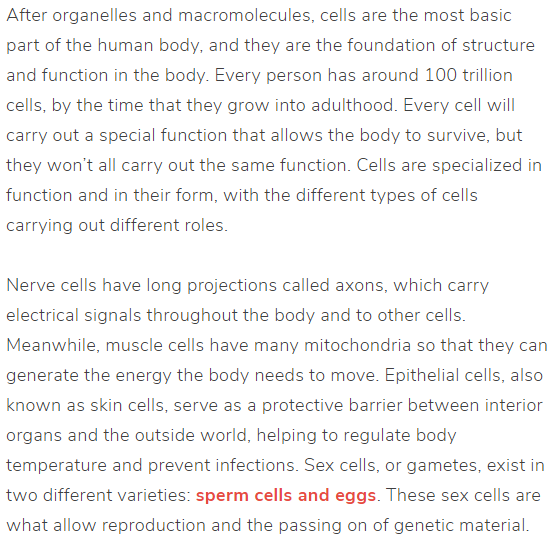


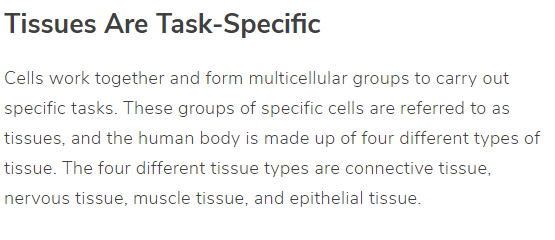


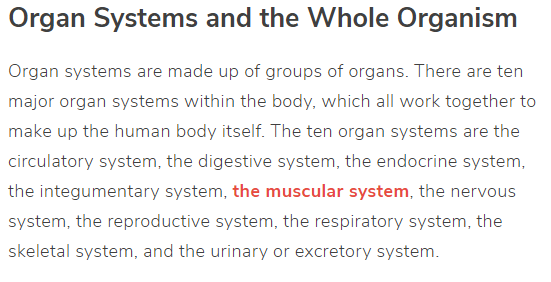




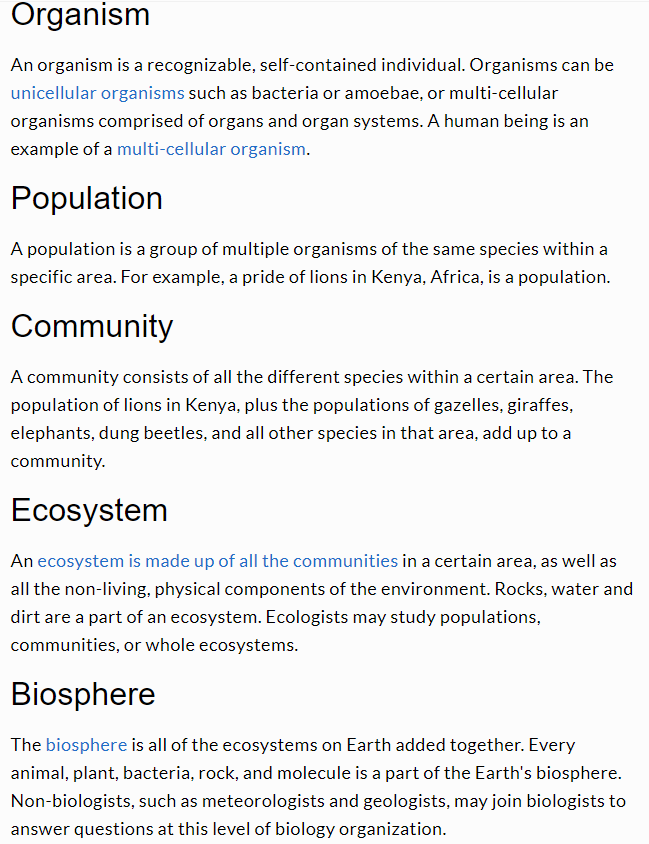








(Source: <https://sciencetrends.com/levels-biological-organization>)



(Source: <https://sciencing.com/levels-organization-biology>)

1. List the different levels of organization from the simplest to the most complex level.

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1. Explain the similarities between the different levels of organization.

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1. Explain the differences between the different levels of organization.

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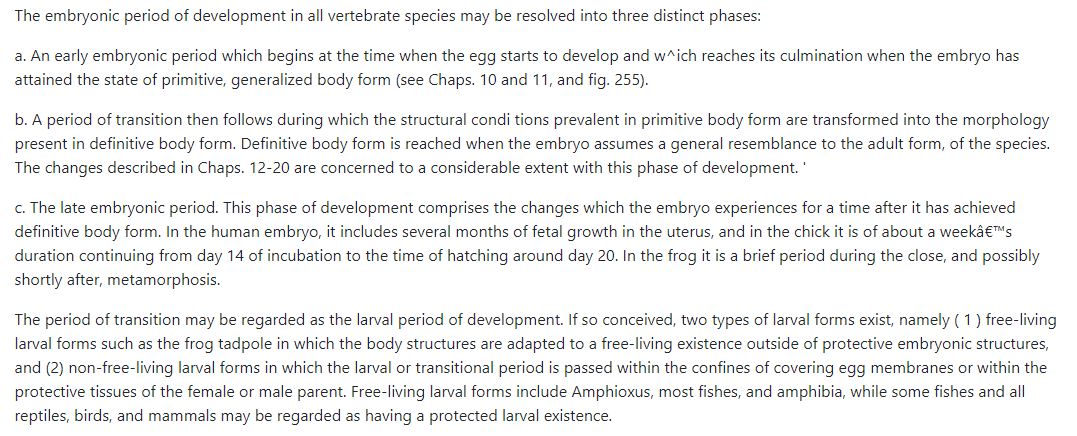
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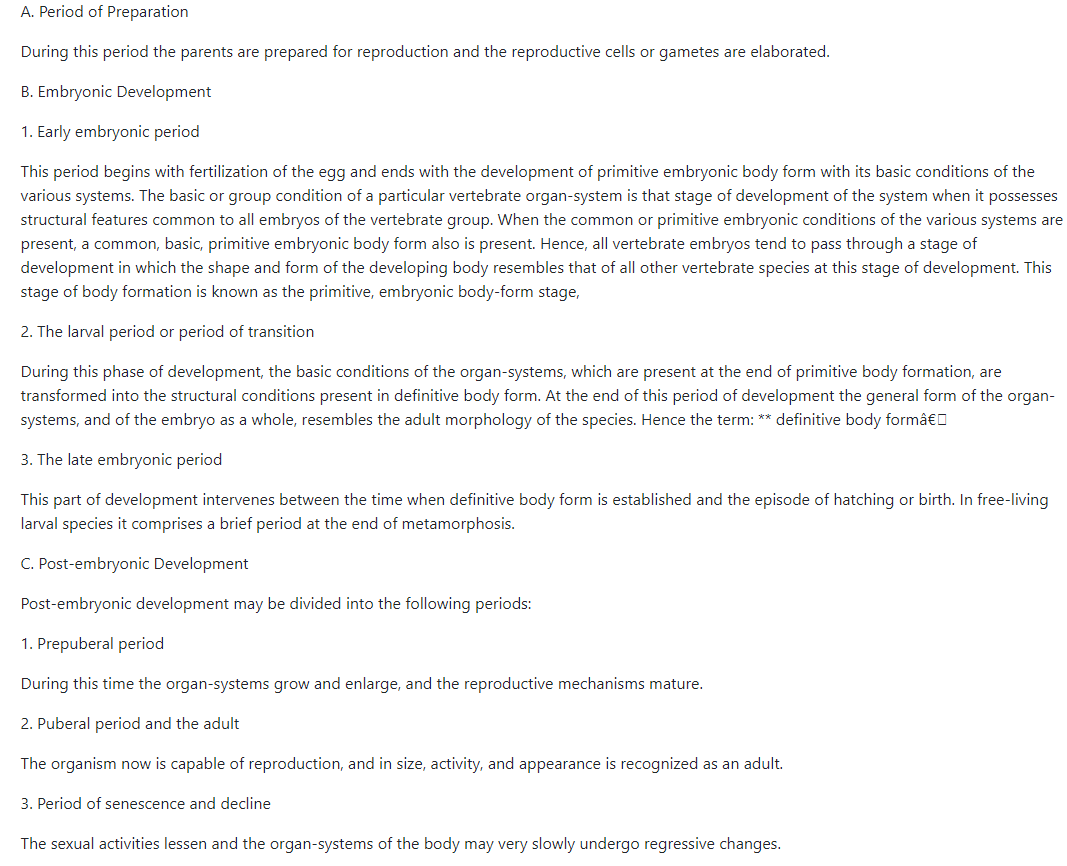
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1. Stages of embryonic development in vertebrates.



**Summary of Developmental Phenomena Associated with the Life of an Individual Vertebrate Animal**



1. Describe the different stages of the embryonic development in vertebrates.
2. Early embryonic period

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1. Larval period or period of transition

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1. Late embryonic period

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