



Perplexing Pairs

Growth and Development



...You Must Have Been a Beautiful Baby...

Growth and **development** of organisms are important concepts within the NYS Science Core Curriculum Guide. In practice, however, they are often used interchangeably. So how can we differentiate between the two?

Explanation:

Growth: increase in weight and volume of an organism

Development: change in structure or form of an organism

Examples:

- Plants form leaves at a stage in their life. (**development**) These leaves increase in size over time. (**growth**)
- A hamster is born hairless, but hair soon appears (**development**). The hair increases in length over time (**growth**).

Following is an activity that you can use to assess your students' understanding of growth and development.

General Activity:

Which of the examples below show development? Which show growth? Put an "X" in the correct column.

<u>Example</u>	<u>Growth</u>	<u>Development</u>
1. a plant stem increases in width	_____	_____
2. a male deer forms horns	_____	_____
3. fingernails become longer	_____	_____
4. a dog gains weight	_____	_____
5. a flower appears on a plant	_____	_____
6. a giraffe's neck becomes longer	_____	_____
7. a baby kangaroo sprouts hair	_____	_____
8. a snail produces a shell	_____	_____
9. a fox becomes larger	_____	_____
10. the first appearance of whiskers	_____	_____

Upper Level Extension:

Using the information from the data table above, explain your understanding of growth and development.

Answers to above: Growth: 1, 3, 4, 6, 9 Development: 2, 5, 7, 8, 10

What do the New York State Standards say?

Elementary Core Curriculum, Standard 4, The Physical Setting

Major Understandings:

- 4.1c The length of time from beginning of development to death of a plant is called its life span.
- 4.1f Each kind of animal goes through its own stages of growth and development during its life span.
- 4.2a Growth is the process by which plants and animals increase in size.

Intermediate Core Curriculum, Standard 4, Physical Setting

Major Understandings:

- 4.3a Multicellular organisms exhibit complex changes in development, which begin after fertilization. The fertilized egg undergoes numerous cellular divisions that will result in a multicellular organism, with each cell having identical genetic information.
- 4.3d Patterns of development vary among animals.
- 4.3e Patterns of development vary among plants.

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