Flint Community Schools
Science Curriculum Pacing

Life Content **Seventh Grade**

UNIT 1: STRUCTURES and PROCESSES of LIVING THINGS **STANDARDS: Organization of Living Things**		**Pacing: September, October, and November (total 8 weeks)**
Big Ideas: • **All living organisms are composed of cells, from one cell to many cells and they exhibit cell growth and division,** • **Specialized cells within multicellular organisms form different kinds of tissues and organs and organ systems that function together.**	**Essential Question(s):** • **How is the body organized from the smallest pieces to the whole?** • **If cells are alive and growing, how do they eat and change their food into energy and more cell material?** • **When an animal or plant grows, do their cells get larger or do their numbers increase?** • **In what way are cells alike, and in what ways are they different?**	
Concepts/Content Expectations	**Knowledge/Skills** *Inquiry GLCE's are in italics under **"Skills"**	**Vocabulary** ***Assessable** **Instructionally useful**
Cell Functions **L.OL.07.21** Recognize that all organisms are composed of cells (single cell organisms, multicellular organisms). **L.OL.07.22** Explain how cells make up different body tissues, organs, and organ systems. **L.OL.07.23** Describe how cells in all multi-cellular organisms are specialized to take in nutrients, which they use	**Knowledge (Students will understand that…..)** • All living things are made of cells. Like cells work together to form body tissues • Cells need food, water, and oxygen to grow and multiply • Not all cells are exactly alike. Different cells do different jobs for my body **Skills (Students will be able to…)** • Observe different tissue from plants and animals with a microscope to confirm that **all living things are composed of cells and that different tissues are composed of similar cells.** • Draw a diagram to show that cells, tissues, organs, and organ systems **build on each other** and that organ systems **serve the needs of cells** for food, air, and waste removal. • Identify examples of organisms made of **one cell** and others made of **many cells.** • Explain that cells **take in nutrients which provide energy and materials** to build more cells and cell parts.	*cell *cell division *cell growth *specialized cell *tissues *organs *organ systems *specialized cell *unicellular organism *multicellular organism *cell growth *differentiation specialized tissue cell membrane cell function diffusion osmosis

Flint Science Fair is March 18 thru 21, 2016

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to provide energy for the work that cells do and to make the materials that a cell or organism needs. **L.OL.07.24** Recognize that cells function in a similar way in all organisms. **Growth and Development** **L.OL.07.31** Describe growth and development in terms of increase of cell number and or cell size. **L.OL.07.32** Examine how through cell division, cells can become specialized for specific functions.	• Draw a diagram depicting **the diffusion of nutrients** that pass through cell Membranes. • Research this question: "Do all animal and plant cells **work in similar ways** when they work to obtain food and oxygen (or carbon dioxide), and remove wastes?"	active transport heart muscle nerve systems: circulatory, digestive, nervous, skeletal, excretory, muscular protist single cell cellular respiration specialized tissue cell division
Assessment Examples Note-taking and Summarization Strategies/Graphic Organizers can be used.	Formative: • *Identify microscopic images of organisms as one-celled or multicellular and give supporting evidence.* • *Relate images of plant cells to their general function.* • *Relate growth in multicellular organisms to increase in cell number.*	Summative: • *Compare and resolve differences in classification of organisms among student groups.* • *List criteria for distinguishing one-celled from multicellular organisms. Describe how one-celled and multicellular organisms increase in size.*

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	• *Make predictions regarding the net diffusion of water given different scenarios of solutions of different types on either side of a semi-permeable membrane.*	• *Explain how multicellular organisms can develop more specialized parts and functions than one-celled organisms.* • *Write a paragraph describing how multicellular organisms grow and form specialized cells observed in the investigation, relating the structure of these cells to their function.* • *Distinguish between diffusion and osmosis.* • *Describe how materials enter and leave cells. Use diagrams with varied concentrations of solutions to predict the movement of water into or out of eggs whose shells have been dissolved.* • *Infer and describe the nature of cell membranes and predict the movement of water into and out of cells given different concentrations of internal and external solutions.*
Resources	Science Plus Level Green Chapter 7 Science Plus Level Green S36-S42 S43-S46 VersaTiles - Life Science Levels 5-8	