

# NTTI Media-Rich Lesson

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**NAME**

To Cell or Not to Cell!

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**LESSON TITLE**

Fifth Grade

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**GRADE LEVEL**

90 minutes

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**TIME ALLOTMENT**

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**OVERVIEW**

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**SUBJECT MATTER**

Life Science and Biology

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**LEARNING OBJECTIVES**

The students will be able to:

- Identify the cell as the basic unit of life;
- Identify various basic parts of the cell and their function.

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**STANDARDS**

The following State of Georgia Learning Standards for Science are located on the Georgia Learning Connections Web-Site.

[www.glc.k12.ga.us](http://www.glc.k12.ga.us)

**GQCC 1.0 Uses recording, analyzing and operationally defining, formulating Models, experimenting, constructing hypotheses and drawing conclusions.**



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**GQCC 7.1 Identify the cell as the basic unit of life.**

**GQCC 7.2 Describe the structure and function of the major components and organelles.**

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## **MEDIA COMPONENTS**

Video

Biology: # 110 The Science of Life Series- “The Living Cell”

This video explores the subject of cells. It provides a definition of cells and discusses what types of organisms are made up of cells.

Website

*Cells Alive*

[www.cellsalive.com](http://www.cellsalive.com)

An interactive cell website. Explore an animal and plant cell just click on the Various organelles and watch them work inside the cell.

Cells: How they work and what they do

[www.angelfire.com](http://www.angelfire.com)

This website was created by an eighth grade student who completed a project on cells. It includes basic easy to understand descriptions of the cell organelles or cell parts.

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## **MATERIALS**

The following is a group of materials needed to implement this lesson:

### **Per Group of 4**

1 microscopic picture of cells per group of 4 students  
Wireless laptops 1 per three students (classroom computers)  
Post it Chart Paper (2 sheets per group of four students)  
Overhead transparency of picture of animal cell and Plant Cell  
1 roll of Scotch Transparent Tape  
1 Colored Marker

### **Per Class**

A variety of colored pencils and crayons  
Drawing Paper  
Poster Size Laminated Picture of an animal Cell  
Overhead transparency of picture of cells

### **Per Student**

Basic Cell Parts and Function Sheet-**Handout 2**

## **PREP FOR TEACHERS**

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## Introductory Activity

Make Colored copies of the microscopic cells (1 per each student)  
Place Chart paper and Colored Markers at each table for groups of four students

## Learning Activity 1

Prepare Video Stream Tape  
Organize Drawing Paper

## Learning Activity 2

Bookmark Websites

## Culminating Activity

Select and Prepare Cell food items

## INTRODUCTORY ACTIVITY: SETTING THE STAGE (Engage)

### Step 1

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Distribute to each group of four students a picture of cells under a microscope. Tell your students to take five minutes to discuss in their groups what they think the picture is and. Instruct them to write what they think it is and what it is possibly made of. After students have generated the list ask the group reporter to present what their group came up with. (The teacher should post student chart paper responses around the room). Some fifth grade students may state the following:

**Grapes**

**Olives**

**Balls**

### Step 2

If no students have identified the picture of cells and named some of the parts, explain to students that what they observed was a picture of cells. Ask students what is the definition of a cell and what does it do? Generate student responses on the overhead.

## Learning Activity 1

### Step 1

Cue the tape to the visual cue of the Video Title *The Living Cell*. Provide your students with a **FOCUS FOR MEDIA INTERACTION** asking them to listen and answering the following questions:

*What is a cell?*

*What things are made of cells?*

*What does Multicellular mean?*

*What size animals are Multicellular?*

*What does Unicellular mean?*



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**PLAY** the video up to the definition of a cell. (*Which reads Cells are the simplest structures that can carry out all of the characteristics of life*). **PAUSE** the tape and **ELIMINATE THE SOUND** to give students an opportunity to read the definition of a cell from the screen.

## Step 2

**RESUME PLAY** and remind students to continue answering the **FOCUS for MEDIA INTERACTION** questions on Handout 1 THE LIVING CELL. **PAUSE** the Tape and **ELIMINATE the SOUND** when you see the definition of Multicellular and ask a student to read the definition of Multicellular.

## Step 3

**RESUME PLAY. PAUSE** the tape when the narrator says “*Paramecium are unicellular and possess just one cell.*” Ask a student volunteer to read aloud the definition of **UNICELLULAR**.

## Lesson Activity 2

### Step 1

Tell your students that they now know what cells are. They are now going to explore different types of cells and what they are made of. Provide your students with a **FOCUS FOR IMEDIA INTERACTION** by distributing 2 pieces of drawing paper and asking them to log on to the website [www.cellsalive.com](http://www.cellsalive.com). Instruct them to locate the word Interactive and double click on the **Plant Cell or Animal Cell**.

### Step 2

Tell students that their **FOCUS FOR MEDIA INTERACTION** will be to draw a picture of the cell they selected. After they have drawn the picture of the cell, they are to use the mouse to click on the specific parts and label them on their drawing. Remind students to only click on the cell parts not the words to the right. After they have clicked on a specific part they must click the icon BACK to go back to the original cell picture.

The parts that should be identified and labeled for each cell is as follows: **HANDOUT 2**

### PLANT CELL

Nucleus  
Cell wall  
Chloroplast  
Vacuole



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## **ANIMAL CELL**

Nucleus

Cell Membrane

Mitochondria

Cytoplasm

### Step 3

After students have selected the cell they want to observe and draw, provide an additional **FOCUS FOR MEDIA INTERACTION** by asking students to log on to the website [www.angelfire.com/me/howcellswork/](http://www.angelfire.com/me/howcellswork/).

### Step 4

Tell your students that after they have completed their drawing and labeling of the cell parts, they are to click on the various cell parts and write down their function on the cell function sheet. (Handout 2)



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## CULMINATING ACTIVITY

### Step 1

Explain to your students that they will be creating a food model of the cell. Ask them to use muffins, crackers, pita bread, English muffins, Jell-O, gummy bears or any other foods to create a model of the cell and some of its parts.

### Step 2

Students should show their creation to the class and explain which foods they used to represent each part of the cell selected.

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## CROSS-CURRICULAR EXTENSIONS

**Language Arts-** Students will write a science fiction story about a cell that has three organelles or parts not functioning properly. In the story explain the importance of the ill functioning organelles or parts and what is going to happen to the cell.

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## COMMUNITY CONNECTIONS

Invite a representative from the American Cancer Society to discuss the role of cells in Cancer.

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## STUDENT MATERIALS

Handouts Attached



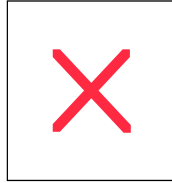
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# THE CELL

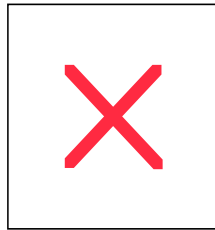


**Directions: Write the function of the selected cell parts and their function.**

| CELL PART | FUNCTION |
|-----------|----------|
|           |          |
|           |          |
|           |          |
|           |          |
|           |          |

HANDOUT 2

**PLANT or ANIMAL?**



**PLANT CELL**

- Nucleus
- Cell wall
- Chloroplast
- Vacuole

**ANIMAL CELL**

- Nucleus
- Cell wall
- Chloroplast
- Vacuole

# HANDOUT 1



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