**Topic**: Protists

**Teacher**: April Callis

**Grade level**: 7th grade

**Subject:** Life Science

**Time:** Two, 45 minute class periods

**Standards**: 7.L.1.1 Compare the structures and life functions of single-celled organisms that carry out all of the basic functions of life including: Euglena, Amoeba, Paramecium and Volvox

**Objectives:**

* Students will analyze different protists and their anatomy
* Students will create a protist that has adapted and evolved to suit different environmental factors through an assigned project.
* Students will describe how genetic variation and environmental factors contribute to evolution through answering a series of questions.

**Materials:**

* Computers (for research, recording pod casts and writing stories)
* Other resources for ideas (trade books, textbooks, encyclopedias, etc)
* Poster board
* Art supplies (markers, crayons, rulers, etc.)

**Procedure:**

1. Explain to students: You are going to design a protest that is perfectly suited to its environment. You can do this by creating a poster and a short story or cartoon about your protist.
2. Students should be separated into groups of 2 or 3 students for the following activity.
   1. Each group should be comprised of students with diverse levels
   2. Each group should be assigned a role:

* Graphic artist & Materials Manager
* Researcher & Story Writer

1. Background Information: It is the future, the year 3000, and it is now possible for humans to create microorganisms to live on Earth. You are one of the scientists working on the microbes and it is your job to design and create a microbe that will be perfectly suited to its environment on our planet.
2. Task: You need to choose an environment on earth and create a protist that is going to be strong and resilient enough to survive in that environment. You need to consider:

* What type of environment does your protest live in?
* What does the protist look like (size, shape, color, etc.)
* What does it eat?
* How will it get/catch food?
* How will it reproduce?

For Slide Show to describe the project:

**Protist Planet**

It is the future, the year 3030, and it is now possible for humans to create microorganisms to live on Earth. You are one of the scientists working on the microbes and it is your job to design and create a microbe that will be perfectly suited to its environment on our planet!

* You must create a **poster** and one **written portion**.
* Written options: Diary entry, day-in-life, adventure, cartoon, poem, etc.

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**Groups:**

You need to be in a group of 2 or 3 students for the following activity.

Each group member should be assigned a role:

* Graphic artist & Materials Manager
* Researcher & Story Writer

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**Requirements**:

* You must first answer questions on the worksheet to develop characteristics of your organism together.
* Your poster must include a labeled picture with at least 5 anatomy terms (eyepot, cilia, etc.) of your microbe.
* Your poster must include a drawing of its environment with a short description.
* The written portion must include at least 10 terms from this unit.
* Your creative story must be at least 2 pages long (1 front and 1 back written or 1 page typed). Cartoon or poem must be 1 page.
* You must make a 5-minute presentation about your protest.

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| |  | | --- | | Protist Mini Project Names:     \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |

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| CATEGORY | 4 | 3 | 2 | 1 |
| Use of Class Time | Used time well during each class period. Focused on getting the project done. Never distracted others. | Used time well during each class period. Usually focused on getting the project done and never distracted others. | Used some of the time well during each class period. There was some focus on getting the project done but occasionally distracted others. | Did not use class time to focus on the project OR often distracted others. |
| Graphics - Poster | Several of the graphics used on the poster reflect a exceptional degree of student creativity in their creation and/or display. | One or two of the graphics used on the poster reflect student creativity in their creation and/or display. | The graphics are made by the student, but are based on the designs or ideas of others. | No graphics made by the student are included. |
| Labels | At least 5 items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away. | At least 3 items of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away. | At least 1 item of importance on the poster are clearly labeled with labels that can be read from at least 3 ft. away. | Labels are too small to view OR no important items were labeled. |
| Story | The story includes at least 10 terms as well as additional information. Story is at least 2 pages long | At least 8 required elements are included in the story. Story is at least 1 ½ pages long | All but 1 of the required elements are included on the poster. The story is at least 1 page long. | Several required elements were missing. Story is shorter than 1 page long. |
| Knowledge Gained- presentation | Student can talk about and accurately answer all questions related to facts and processes used to create the poster and story. | Student can talk about and accurately answer most questions related to facts and processes used to create the poster and story. | Student can talk about and accurately answer about 75% of questions. | Student appears to have insufficient knowledge about the facts or processes used in the poster and story. |

**Protist Planet**

1. What is the name of your Protist?
2. Where do you find your protist? What type of environment does it live in?
3. What is the protist’s phenotype (description)?

1. How does the protist move?
2. What does it eat and how will it get/catch food?

1. What features allow the protist to survive in its environment?

1. How does the protist reproduce?

1. How will it protect/defend itself from attackers?

1. What would happen if the protist’s food source were taken away?

1. How would the protist survive in a different environment?

1. What types of genetic variability (other mutations) could your animal have in the future? Would they be better suited for their environment?