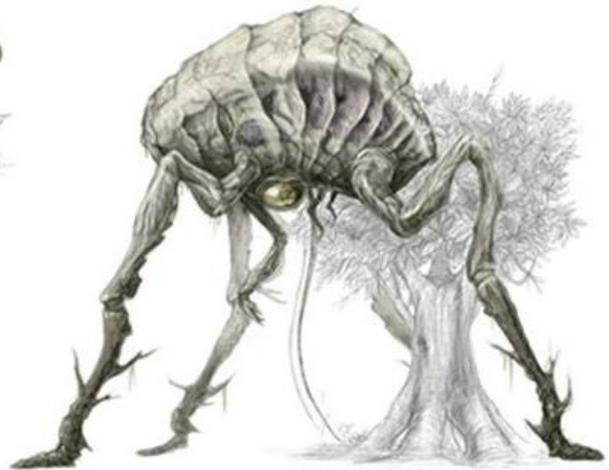
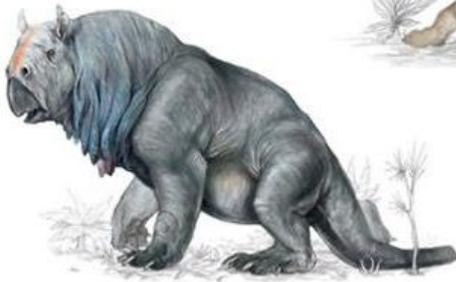


AN ECOSYSTEM FAR, FAR AWAY...

A 7TH GRADE LIFE SCIENCE PBL



GROUP NAME _____

PLANET CHOSEN _____

GROUP MEMBERS:

Overview

Your group has been hired as the newest (and the youngest) creature design team for the next Star Wars television blockbuster! Following the success of smash hits like *The Mandalorian*, the Disney Plus streaming service is seeking proposals for a new kids' series based on the Star Wars universe. Each episode will take place on a different Star Wars planet. Because the series will be educational in nature, it is important to the Disney Plus team that the planets are populated with scientifically realistic plants and animals interacting within their ecosystem.

Your design team will choose a Star Wars planet and evaluate its environment. You will use your knowledge of adaptations, energy flow, and interactions to develop an alien ecosystem that "fits" the planet. The team will design at least eight organisms and create scientific diagrams showing the adaptations that allow each organism to live in the environment. You will also create a food web for the ecosystem. Finally, you will describe interactions between and among your organisms, including predator/prey and symbiotic relationships.

Once you have designed your organisms, your team will collaborate to produce a presentation for the director and the show investors. Only the best (and most scientifically accurate) ecosystems will be selected for the series!



Planning Sheet: Planet

Use the Internet to research known characteristics of your chosen planet. If there are elements that are unknown, use your own imagination to develop elements that fit within the environment that you choose.

Name of planet _____

Environment: Check all environments that can be found on this planet.

- Desert
- Saltwater Ocean
- Tundra (very cold/icy, with few plants due to limited precipitation)
- Taiga (a cold and snowy forest)
- Deciduous forest (a forest that experiences all four seasons)
- Rainforest (a forest that is warm year-round)
- Grassland/prairie (dry with few trees due to limited precipitation; seasonal temperatures)
- Freshwater lake
- Swamp (wetlands dominated by woody plants such as shrubs or trees)
- Other (describe below)

Choose one checked environment above as your chosen ecosystem: _____

Describe the temperature: (Is it hot? Cold? Seasonal – hot in summer/cold in winter?)

Describe the precipitation: (Does it get a lot of rain/snow? Very little? All year or is there a rainy season?)

Describe the sunlight: (Is it very bright? Very dark? Does it get sunlight year-round or in seasonal cycles?)

What habitats are available for organisms? (Do they live in trees? Caves? Burrow underground?)

What is the biggest environmental challenge your organisms will need to adapt to?

Planning Sheet: Producer

Note that, although you are creating alien organisms, the adaptations must be realistic and able to be explained scientifically. Be sure to use actual adaptations of Earth organisms as a starting point to develop your alien organisms. Design your first producer below, and then staple additional producer sheets to this page.

Name of producer _____

1. What adaptations does this producer have for the temperature / climate of the planet?
2. What adaptations does this producer have for protection from being eaten?
3. What adaptations does this producer have to make food or obtain water?
4. What type of seeds will this producer make? How will it disperse (spread) its seeds?
5. Describe one behavioral adaptation this producer has, and why.

Illustration: Below, sketch a rough draft version of your consumer. Label each adaptation and what it is for.

Planning Sheet: Consumer

Note that, although you are creating alien organisms, the adaptations must be realistic. Be sure to use actual, real adaptations of Earth organisms as a starting point to develop your alien organisms.

Design your first consumer below, and then staple additional consumer sheets to this page.

Name of consumer _____ Level (circle one): primary secondary tertiary

1. What adaptations does this consumer have for the temperature/climate of the planet?
2. What adaptations does this consumer have for movement?
3. What adaptations does this consumer have for obtaining food and water?
4. What adaptations does this consumer have for protection?
5. What adaptations does this consumer have for attracting a mate?
6. Describe one behavioral adaptation this consumer has, and why.

Illustration: Below, sketch a rough draft version of your consumer. Label each adaptation and what it is for.

Planning Sheet: Interactions

Complete the table below with some ideas about how your organisms might interact in both positive and negative ways. Answer in complete sentences.

Type of Interaction	Organisms Involved	Description of the Interaction (Answer in complete sentences.)
Predator/Prey		
Parasitism		
Commensalism		
Mutualism		

Planning Sheet: Presentation

Your presentation to directors and investors will consist of 2 parts: a digital product and a visual aid

DIGITAL PRODUCT This can be a website, a video, a screencast, a slide show, or another digital product of your choice. It needs to include the following elements:

- Planet name and description
- A brief summary/overview of each organism, with the most interesting adaptations described. (This is an explanation that gives your organisms “personality” by describing their overall characteristics in an informal way.)
- An illustrated and colored scientific diagram for each organism (can be hand-drawn and scanned or created using a digital tool). The scientific diagram should have ALL adaptations neatly labeled and explained.
- An illustrated and colored food web showing the flow of energy through the ecosystem (can be hand-drawn and scanned or created using a digital tool). Include the Sun and all feeding relationships represented with arrows. Organisms should be shown with pictures and names.
- Two interactions that you wish to highlight. Choose your most interesting predator/prey interaction and your most interesting symbiotic relationship. Include an explanation and colored illustration for each.
- A convincing “pitch” for why the director and investors should choose YOUR ecosystem for the series

What type of digital tool will you utilize? _____

Why do you feel that is the best choice for your presentation?

VISUAL AID: This can be a trifold, a poster, a 3D model, a diorama, or another visual product of your choice. It should be neatly designed and visually appealing. At a minimum, it should include:

- Planet name and type of ecosystem
- Group members’ names
- A scene that represents the “look” of your ecosystem

You can also include details from the digital product, such as your illustrated drawings, creature descriptions, etc.

What type of visual aid will you create? _____

Why do you feel that is the best choice for your presentation?