

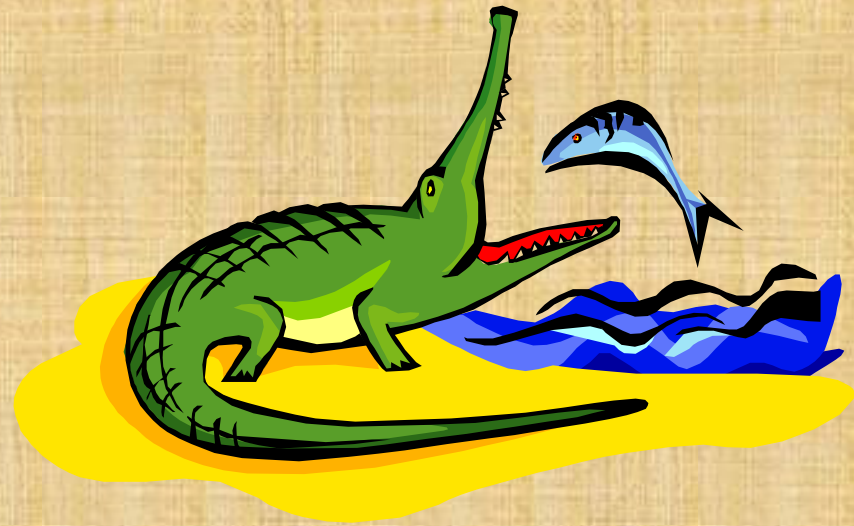
Out of this world adaptations & futuristic GMOs



Presented by:
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Adapting to the Environment

- Natural selection: Changes an organism makes over time to help make it better suited to their environment.
- adaptations- the behaviors & physical structures or characteristics of an organism that help the organism survive in their ecosystem



3 *Basic type of Adaptations*

- 1) Adaptations for *getting food*
- 2) Adaptations for *locomotion or movement*
- 3) Adaptations for *protection*



Adaptive Behaviors

- **mimicry**– an organism looks or acts like another organism for protection
- Whales travel in **Pods**.
- Birds travel in **flocks**
- Some fish travel in **schools** for protection
- Animals **hunting in packs**
 - hunting in packs help provide a successful kill
 - Ex. Carnivores (lions, wolves)
- Animals **traveling in herds** for protection
 - traveling in herds helps increase survival rates.Ex. Herbivores (zebras, buffalos)
- **playing dead**
- **migrating**
- **hibernation**



Design an organism with the following adaptations

- 1) Eats meat**
- 2) Swims & breathes under water**
- 3) Flies through the air**
- 4) Keen sense of smell**
- 5) Keen sense of hearing**
- 6) Lives in a cold climate**
- 7) Has horns or antlers for protection**
- 8) Walks on land**
- 9) Antennae for sensing their environment**

Name your organism

Analyzing imaginary creatures

- 1) Determine what **ecosystem** it would live in.
- 2) Create a 3 organism **food chain**. What type of consumer do you have?
- 3) Explain 2 **interactions** with 2 different abiotic factors.
- 4) Name 1 organism that would **compete** for limiting resources (*What is the limiting factor?*)
- 5) Name 1 predator/prey (**predation**) relationship.
- 6) Choose the 2 most important **physical adaptations** for your organism & explain their importance.
- 7) Explain the most important **behavior adaptation** for your organism.

Genetically Modified Organisms

- *Compare GMOs, or biotech crops, to smart phones. Think of the phone as the plant's DNA and the genes as an app. Even after adding many different apps, you still have a phone.

*America's Soybean Farmers & their Check off
Everything you want to know about GMOs including the truth.

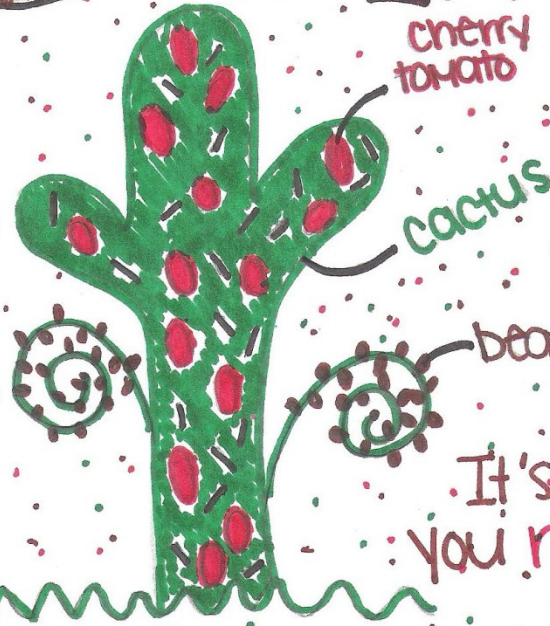
Create a GMO to help feed our growing population

- 1) Pick a “base organism” in which you will add specific genes to get the desired traits.
- 2) Chose at least 3 different organisms and explain the trait from each that you want to add to your “base organism.”
- 3) Name, draw, & create a slogan to promote your GMO.

Draw a picture of your new organism and color it. Place a slogan at the bottom to promote your organism.

B C T

Plant one today!

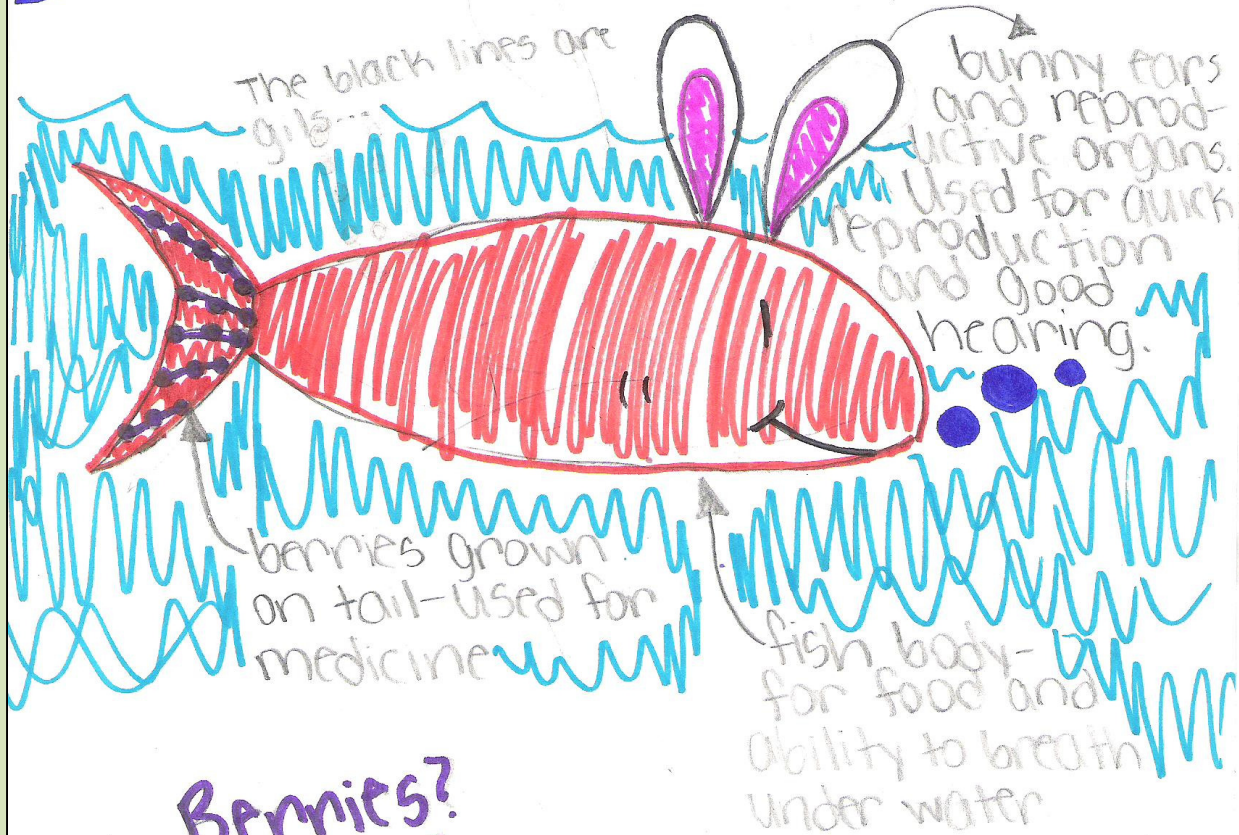


It's what you need to feed!

Beans, tomatoes, and a cactus -

OH MY! ▼

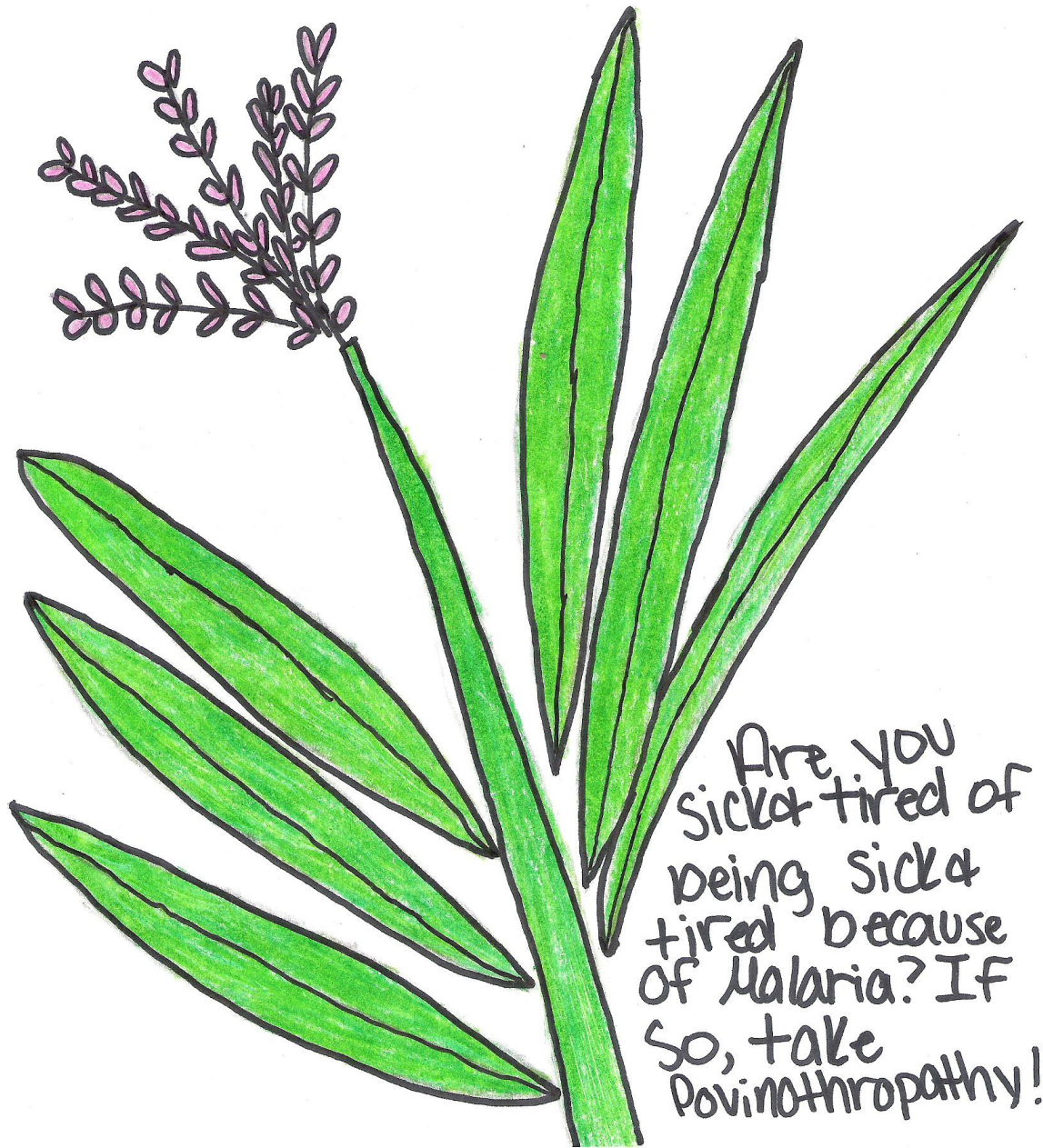
Draw a picture of your new organism and color it. Place a slogan at the bottom to promote your organism.



Bennies?
Bunny?
Fish?
Sounds Delish!

The Burry Fish

Draw a picture of your new organism and color it. Place a slogan at the bottom to promote your organism.



- Edible vaccines

GMOs cross the Curriculum

- **Social Studies:** Research countries & determine ecosystems and organisms you'd like to introduce to those nations.
 - **Writing:** After creating the GMO they can write an informative article explaining the GMO.
 - **Visual arts:** Draw, color create a slogan for their GMO
-

Frontline & Nova: *Harvest of Fear*

<http://www.pbs.org/wgbh/harvest/>

- **ELA:** *Viewpoints* ties to ELA standards showing pros & cons-could debate after researching
- **Science:** *Guess What's coming to Dinner?*