

University of California

Agriculture and Natural Resources

Making a Difference for California

PLACER:

11477 E Avenue
Auburn, CA 95603
530.889.7385 office
530.889.7397 fax
ceplacer@ucdavis.edu

NEVADA:

255 So. Auburn Street
Grass Valley, CA 95945
530.273.4563 office
530.273.4769 fax
cenevada@ucdavis.edu

Website: <http://ceplacernevada.ucanr.edu>

NUTRITION NEWS

UC CalFresh Nutrition Education Program

JUST WHAT ARE GMOS



There has been much controversy over GMOs with people taking very polarizing views. We are starting to see more food packaging claims "contains no GMO". When reading this, one assumes GMOs must be bad.

The following is from an interview with Dr. Rick Meilan. He is a Molecular Tree Physiologist at Purdue University. Reading this should give you an unbiased explanation and better understand of GMOs.

GMO stands for Genetically Modified Organism. Let's break it down word by word. **Genetically** refers to genes. Genes are made up of DNA, which is a set of instructions for how cells grow and develop. Second is **Modified**. This implies that some change or tweak has been made. Lastly, we have the word **Organism**. When it comes to GMOs, many people only think of crops. Yet, an "organism" isn't just a

plant; it refers to all living things, including bacteria and fungi.

With that in mind, GMOs are living beings that have had their genetic code changed in some way. While conventional breeding, which has been going on for centuries, involves mixing all of the genes from two different sources, producing a GMO is much more targeted. Rather than crossing two plants out in the field, they insert a

gene or two into individual cells in a lab. Yet, as mentioned earlier, GMO technology can also be used on microorganisms. For example, bacteria have been genetically modified to produce medicines that can cure diseases or vaccines that prevent them. A commonly used medicine that comes from a genetically modified source is insulin, which is used to treat diabetes, but there are many others.

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Fall 2018

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More Resources

Visit our website -
Let's Eat Healthy:
<http://ceplacer.ucanr.edu>





CATCH (COORDINATED APPROACH TO CHILD HEALTH)

Are your students getting tired of the same old games during PE? Try "Go Fish". It was designed for grades K-2nd, but can be modified for older elementary students as well.

Fast Games



NAME OF ACTIVITY: Go Fish

GRADE LEVEL: K-2

EQUIPMENT: none

SKILLS EMPHASIZED: locomotor skills, dodging stationary objects

ORGANIZATION:

1. Students are scattered within the activity area, all facing the same side line (the "shore").

DESCRIPTION:

1. Students pretend they are fish in the ocean.
2. Students move according to the following verbal commands
WAVE IN - March forward toward designated "shore."
WAVE OUT - Walk backward toward the sea.
LOW TIDE - Duck down and walk toward the sea.
HIGH TIDE - Walk on balls of feet, arms overhead toward the shore.
SHARK - All run to nearest sideline and stand on 1 foot. (hiding)
GO FISH - Skip throughout activity area in any direction.

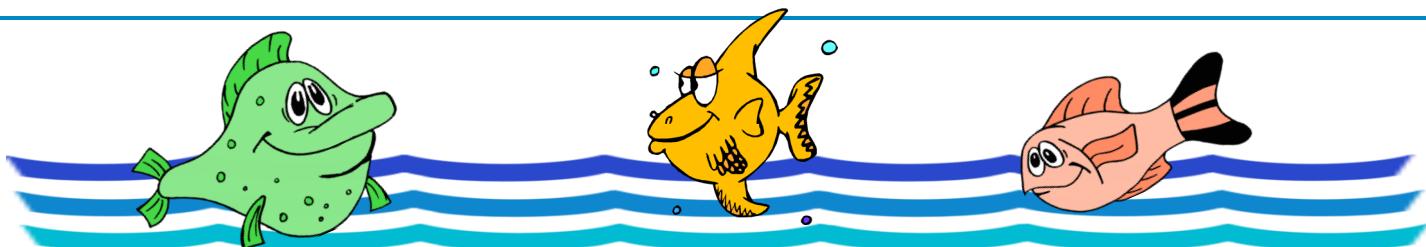
Extra Go Fish Movements:

- SURF
- STING RAY - arms wide and glide
- ROW BOAT - using arms

TEACHING SUGGESTIONS:

1. Stress the importance of safety and watching out for other fish.

This is a sample of games included in CATCH curriculum. If you are interested in incorporating CATCH into your Physical Education Program, please contact us at (530) 889-7350, UC CalFresh Nutrition Education Program - Placer and Nevada Counties.



JUST WHAT ARE GMOS (CONTINUED)

The process to create a GMO starts very small. A scientist causes a gene to be inserted into the DNA in the nucleus of a single cell. The DNA being used for the modification is so small that it can't be seen, even under the most powerful microscope. Despite how tiny a cell is, there is a massive amount of DNA all packaged into its one little nucleus. To give some idea of just how much DNA is packed into that small space, if you were to take all the DNA of one single corn cell out of the nucleus and line it up end-to-end, it would be about six feet long! Into this enormous amount of DNA, a very small piece is inserted. A vast majority of the organism's genetic code remains completely unchanged by the process.

Once this single cell has been modified, the scientist will treat it with naturally occurring plant hormones to stimulate growth and development. This one cell will start to divide (which is the natural growth process for any organism) and the resulting cells begin to take on specialized functions, until they become a whole plant. Because this new plant was ultimately derived from a single cell with the inserted gene, all of the cells in the regenerated plant contain that new gene.

Source: *Interview with Dr. Rick Meilan, Molecular Tree Physiologist at Purdue University*

WHAT ARE GMOS?

Humans have cross-bred plants for centuries. Developing genetically modified organisms (GMOs) is a more targeted process.

- GMOs are living beings that have had their genetic code tweaked in some way.
- What happens? A gene is inserted into the DNA of a single cell. As the cell divides, that gene will be in every cell.
- GM technology isn't only for crops! Use on microorganisms, such as bacteria, has created medicines (like insulin!) and vaccines.

PURDUE
Agriculture

Purdue University is an equal access/equal opportunity institution.

SURVEY COMING IN OCTOBER

Nutrition News is distributed three times a year to schools participating in the UC CalFresh Nutrition Education Program in Placer and Nevada Counties. We value your opinion! Teachers look for an email with a survey link in October regarding Nutrition News Newsletter.

University of California Cooperative Extension

UC Cooperative Extension

11477 E Avenue

Auburn, CA 95603

Phone: 530-889-7350

Fax: 530-889-7397

Email: carter@ucanr.edu

UNIVERSITY OF CALIFORNIA calfresh Nutrition Education



Website:
[http://
ceplacer.ucanr.edu](http://ceplacer.ucanr.edu)



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Happy Healthy Me...Moving, Munching & Reading Around MyPlate for 4 to 6 Years Olds

Combines stories and literacy with nutrition education.

Eating Healthy from Farm to Fork...Promoting School Wellness

A nutrition education curriculum that makes the connection between local food systems, garden-based learning, school food service, and the establishment of healthy habits. (K-2nd Grade)

My Amazing Body - 1st Grade

Good for Me and You - 2nd Grade

It's My Choice...Eat Right! Be Active! - 3rd Grade

These curricula promote healthy eating and physical activity. Children will gain skills to practice appropriate healthy behaviors.

Nutrition to Grow On

A garden-enhanced nutrition education curriculum. Objectives: 1) Teach the importance of making healthful food choices; and 2) improve children's preference for fruits and vegetables by giving them an opportunity to work with the land and grow their own produce. (4th-6th Grade)

Eatfit

A computer-based highly interactive nutrition and fitness program for middle and high school adolescents.

Jump Start

These cross-curricular lessons encourage high school students to eat healthy, keep moving and take action in their community.

CINDY FAKE
County Director

KELLEY BRIAN, MPH
Youth, Families, and Communities Advisor

ROSEMARY CARTER
UC CalFresh Program Manager

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