IT'S LEGO LAB TIME!

Welcome to the LEGO LAB!

WHY?

The purpose of the lab is to introduce your students to the Engineering Process:

The engineering design process is a series of steps that engineers use to guide them as they solve problems. During the design process, engineers:

- Identify the problem or challenge.
- Identify design requirements and limitations on the design due to available resources and the environment.
- Brainstorm possible solutions to the problem or challenge.
- Generate ideas and develop the most promising ones.
- Explore possibilities and the pros and cons of each.
- Select an approach by identifying the design that appears to solve the problem best.
- Build a model or prototype.
- Refine the design by identifying changes that need to be made and improving the model or prototype.

The Florida Department of Technology standard (ISTE) states: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.

As part of our STEAM initiative, it's important to provide our students at WNPS with a learning environment that ignites a natural desire to explore and discover while improving and developing math, science, language arts and technology skills. Students will also be developing 21st century skills, like problem-solving, collaboration and communication.

WHERE and WHEN?

The Lab is located in the library and can be accessed through the PTO door or the Library front door. Outside of the lab is a calendar where you can sign your class up – 45 minutes is a recommended average time, but you know your schedule best so the Lab is flexible!

WHAT?

Students will read and discuss a story while you identify a problem to solve based on the story. Students are then put into groups of three or four and given a tub of the DUPLOS you'll find in the lab (DUPLO are the bigger block LEGOs) which they use to brainstorm, plan and build a solution to the problem. Each "build" is then shared with the group. That's the basics although you don't have to do it that way if you don't want. Again, the Lab is flexible!

HOW?

Inside the Lab, you will find LESSON PLAN boxes on the shelves on the right. Each box is labeled with the story title and skill set (i.e. Snug House Bug House – Insects, Insect Homes). Boxes include lesson plans, books and any extra graphics or DUPLO pieces or materials you might need for the build.

The standard procedure is to sign up for the lab, show up for your time, pull the box you want to use (or use the LESSON OF THE MONTH that will be set out on a table ready to go.) and proceed, after reviewing the posted engineering process poster and LEGO LAB rules poster. If you are looking for a particular book or skill, current lessons can be located on the Z Drive under GENERAL, LEGO LAB.

Titles include:

Are You My Mother? (Animal homes, families)

Aliens Ate My Underpants! (Space, cooperative learning)

Bats at the Beach (Seasonal, nocturnal animals, bats)

Cinderella (Wheels and Axles)

Cat Traps (Logical thinking/problem solving)

Camilla the Cupcake Fairy (patterns)

The Gingerbread Boy (Simple Machines, critical thinking,seasonal)

Go Dog Go (Simple machines)

Green Eggs and Ham (Stability)

Jack and the Beanstalk (Measurement, center of gravity)

Mouse's First Christmas (Seasonal, chimneys, spatial reasoning)

The Night Before St. Patrick's Day (Holiday, rainbows, colors)

The Night at the Museum (Dinosaurs, research skills)

Pete the Cat and his Four Groovy Buttons (Sorting/Classification)

Peter's Chair (Basic Measurement)

Pete the Cat's Valentine's Day is Cool (Logical thinking, letter writing)

Peter Peter Pumpkin Eater (Logical thinking, spatial reasoning, pumpkins)

Penguins to the Rescue (Cooperative learning, planning)

Snowmen at Night (Logical thinking, snow, winter)

Sheep in a Jeep (Spatial thinking, speed and velocity)

Snug House Bug House (Insects, brainstorming)

Ten Apples Up On Top (Balance, Counting)

The Three Billy Goats Gruff (Bridges, engineering principles)

10 Hooting Owls (Spatial reasoning, critical thinking)

Also, once or twice a month, I'll be sending out an email featuring an old or new LEGO (Duplo) lesson based on a variety of favorite children's books. If there is a book or skill you'd like to see, please let me (Susan Julio) know and I'll write one for you. Or, feel free to come up with your own! Flexibility!

Finally, there are a variety of LEGO Games, LEGO Free-Build Boxes and LEGO Books for children to enjoy as well...Just look for the labels! Enjoy!

For more information about the Lab contact Susan Julio or Ruth Witter.