**S.T.E.A.M. Tools & Tips**

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**S.T.E.A.M.**

**Science**

Observing and exploring

Making predictions

Asking “why” questions

Wondering how things work

Creating talking opportunities

\*The Silk Worm Experience

\*Volcano/Play dough Creations

\*Painting with Magnets

\*The Scientist’s Tool Box

**Technology**

Way of doing

Being inventive

Identifying problems

Making this work

Building simple machines to solve problems

Playing

\*Caring for Our Gadgets

\*Building a Technology Center

\*Photography

\*Recording – Listening Center

**Engineering**

Solving problems

Testing

Planning and inventing

Designing and creating

Building things that work

Collaboration

\*Designing Architectural Blueprints

\*Duplo/Hollow Block Stories

\*Ramps and Pathways

\*Playground Water Exploration

**Art(s)**

Open-ended creativity

Exercising imagination

Developing eye-hand coordination

Understanding ideas have value

Experimenting with patterns, textures, and colors

Exploring opportunities for music, drama & dance

Reading

\*The Creative Arts Center

\*Wooden Wonders

\*Musical drama exercises with props and tools

\*Styrofoam Buildings

**Math**

Ways of measuring

Spatial relations

Exploring shapes

Sequencing/patterning/volume/size

Charting, counting, sorting

Comparing & contrasting

\*Coat Hanger Balancing Machines

\*Measuring Activities

\*Fall Treasure Hunt

\*Shape Story Drama

**Silk Worm Ordering Information**

“Insect Lore” – [www.insectlore.com](http://www.insectlore.com)

Order Silkworm eggs (20-25)

Silk Worm Chow - (Food to feed the silkworms when they hatch)

(Order the chow and have on hand before ordering the silkworm eggs)

[www.Mulberryfarms.com](http://www.Mulberryfarms.com) Tel: 760-731-6088

Powder – Ready to mix or pre-made chow

\*Eggs hatch about 7 days after arrival

\*25 – 30 days of growth after hatching before silkworms are ready to form their cocoons.

\*Emergence of the moth begins ten to fourteen days after cocoon formation.

\*Mating begins soon after emergence. Silkworm moths do not fly. They live approximately 7 to 10 days.

\*If the moth lays eggs and they are fertile, the eggs will hatch in 20 days and the cycle will be repeated.

**Science Domains**

Physical Science

Life Science

Earth and Space Science

Personal Safety and Health

**Nature Equipment**

Bug House

Magnifiers

Small aquarium with a screened lid

Rye grass seeds

Empty milk jug container

Child sized goggles

Large plastic container for water/sand/clay activities

Sunscreen lotion

Hats and caps

**Science Vocabulary**

Predict – decide what they think may happen

Experiment – Try out tools/processes

Observe – watch

Collect Data

Properties of

Characteristics

Compare – judge different effects

Measure – compare sizes/weights

Communicate – discuss results

\*Inquire, question, make decisions and work cooperatively to problem solve.

**Volcano Fun**

Large baby food glass container

Baking Soda

White vinegar

Tablespoon measuring spoon

Red food coloring

Eyedropper

Plastic 1 cup measuring cup

Tray with raised edge to contain liquid

Green cooked play dough

Inch round stones for decoration

Have the children cover the outside area of the baby food jar with green play dough and stones, giving the look of a grass covered hill leading to the mouth of the volcano. The children will then measure 1 tablespoon of baking soda and dump it inside of the container. Next the children, using the eyedropper, will add 5 or 6 drops of red food coloring.

Invite conversation by asking the children what they think will happen when they pour the vinegar into the container. They will surprise you will their predictions.

Now the volcano is ready to erupt. Using the measuring cup filled with white vinegar, have the children slowly pour some of the white vinegar into the container. Quickly the volcano will erupt with pinkish lava that will flow over the sides of the volcano. Repeat the process again by pouring some more of the vinegar into the container. This is a win/win activity for all ages.

**Ramp Play**

Invent

Design

Solve problems

Make something interesting happen

Learn how to ask questions

Identify

Solve an engineering problem

**“I can do this but I need a little help!”**

**“I WONDER”……**

Dear Parents,

We are introducing the concept of set to the

children during our math circle time. They

are having fun collecting sets of objects

around the classroom including like members

such as blocks, crayons, and scissors.

Your child may enjoy searching for a set of

objects at home to share at school. This

envelope will be a handy holder for the set.

The filled envelope may be returned any

preschool day.

Thank you for your help!

**References and Resources**

**Discount School Supply** – 800-627-2828

**Lakeshore Learning Materials** – [www.lakeshorelearning.com](http://www.lakeshorelearning.com) or 800-421-5354

**Insect Lore** – [www.insectlore.com](http://www.insectlore.com) 1-800-Livebug

**Community Playthings** – 1-800-777-4244 (Blocks, Riding Equipment-Furniture)

**Hannah Lucia’s Puppets and More –** Contact Michael Tello to visit our showroom.

By appointment only – Cell: (713) 269-5842.

**The Felt Source.** Little Folks Visuals. (877) 463-1053. [www.thefeltsource.com](http://www.thefeltsource.com)

**Oriental Trading Company** – 1-800-228-2269

**The Book Vine for Children** – (800) 772-4220 (Great Book Reference) [www.bookvine.com](http://www.bookvine.com)