



STEAM KITS - FOR ALL AGES

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A part of

ALA STAR NET STEAM EQUITY AWARD project

THE STAR NET STEAM EQUITY PROJECT IS OFFERED BY THE NATIONAL CENTER FOR INTERACTIVE LEARNING AT THE SPACE SCIENCE INSTITUTE (NCIL/ SSI), THE AMERICAN LIBRARY ASSOCIATION (ALA), TWIN CITIES PBS (TPT), INSTITUTE FOR LEARNING INNOVATION (ILI), AND EDUCATION DEVELOPMENT CENTER (EDC), WITH FUNDING FROM THE NATIONAL SCIENCE FOUNDATION (NSF).

BACKGROUND INFO

Grant Focus

- ❖ Engage tweens (ages 10-13),
- ❖ particularly Hispanic females,
- ❖ in STEAM learning
- ❖ goal - increase levels of females and Hispanics in STEAM careers.



Photo from article "Latinas Making Their Mark in STEM"



Method/ Requirements

- Exploration space - monthly
- Programs - 3 a year
- Kits - 3 a year
- ALA Exhibits - 1 per year
- Community dialogue – 1 per year

EXPLORATION SPACE LESSONS FOR KITS



ALA, Star Net, SciGirls training on:

Closing the Gender Gap

Community Dialogues

ALA/ Star Net Exhibitions

SciGirls Resources

Cultural Responsiveness

ALA Connect

STEM Kits

NASA Girls STEAM Ahead

Our first exhibition in December was a mathematical one: estimating weight of Santa's sleigh, researching circumference of earth and calculating how fast Santa had to fly to make it around the world in one night.

EXPLORATION SPACE LESSONS FOR KITS

Although planned for tweens (9-13 year olds), we observed younger children also wanted to engage.

Hispanic culture does place value on family and multi-generational activities so we observed multiple generations were at the exhibit all together.

Also, HPL already had six Santikos Imagination Stations with books, puzzles, audio materials, and manipulatives for multiple ages to experience and learn.



EXPLORATION SPACE

Applying Those Lessons

Book display added for multi-faceted learning – like our Santikos Imagination Stations.

Additional activities were added for multiple age groups: age 3 – 2nd grade; Kindergarten – 5th grade; and our target group – 3rd grade – 8th grade.

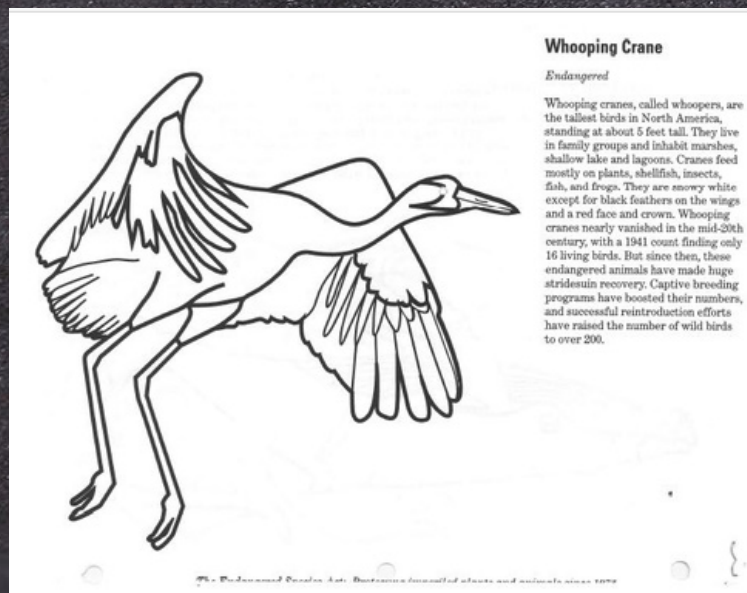
Worksheets, coloring pages, word searches, and crossword puzzles were found for each age group.



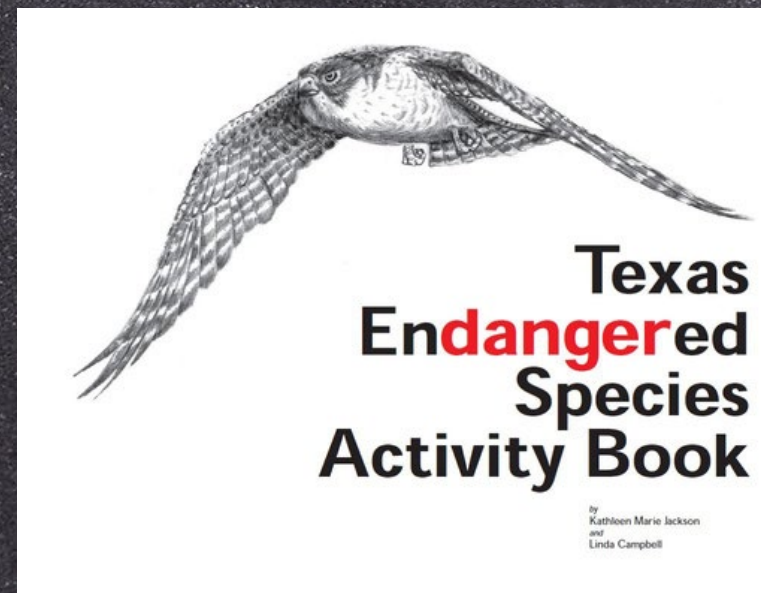
Example exhibition with take-home sheets. -
useful to help us track the usage by
precounts prior and counts after.

EXPLORATION SPACE: ANIMAL CONSERVATION

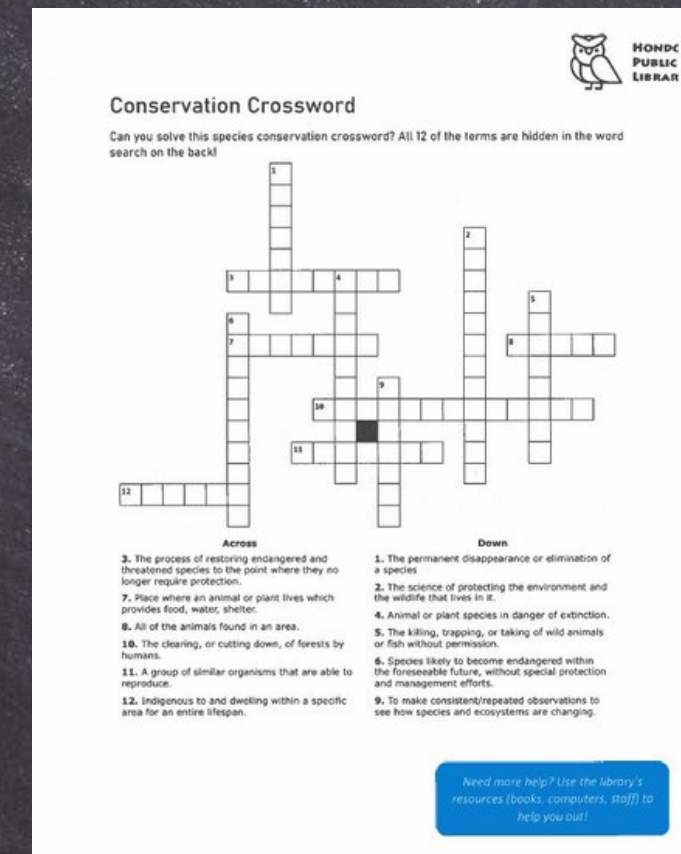
EXAMPLE WORKSHEETS



Age 3 to 2nd grade
Usually coloring sheet
with a little info



Age Kindergarten to 2nd grade
More involved coloring, simple
word puzzles, etc.



Age: 3rd - 8th grade
Higher level puzzles, more reading
material, matching activities

TPT (formerly Teachers Pay Teachers) is a great, inexpensive source for worksheet and activity pages. Able to search by topic and then sort by age/grade level and by price

KITS: FIRST ROUND

Start where we are and with what we know

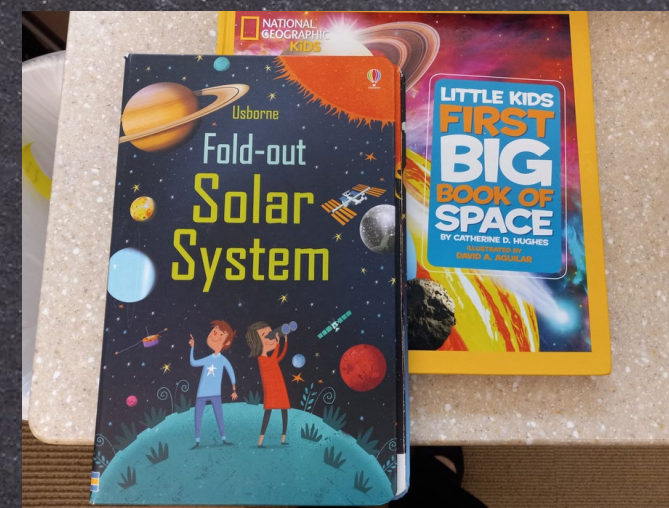
- Existing Story Kits: Snow White, Little Red Riding Hood, Stella luna, etc.
- Some existing materials from Santikos grant that funded the Imagination Stations. Use those since five of six already have STEAM components.
- Like Santikos stations, include books, manipulative, audio, and visual items where possible to reach different types of learners.
- Make kit multi-level with main part to focus on tweens but include some items with which younger siblings could engage.

KITS: STORAGE, PATRON USE, AND CATALOGING

- Backpacks for easy storage and handling.
- Locked while on floor.
- Clothing rack for hanging all the backpacks.
- Barcode on main book chosen.
- Mark other items with same number.
- Smaller items sorted and stored in clear plastic boxes or bags.
- Cataloging with the main book title.
- Other kit items in the notes field with pricing.
- Prices added for total for holding field.
- 3 week checkout like books.



Outside Tag	
	Galaxy Reality Kit - 51186
	Book First Big Book of Space
	Book Fold-out Solar System
	Puzzle Solar System Floor Puzzle
	Puzzle Astronaut Puzzle/Coin Bank
	Activity ViewMaster with 3 discs



Example of one of our first kits: Galaxy Reality

Kits: Evolution

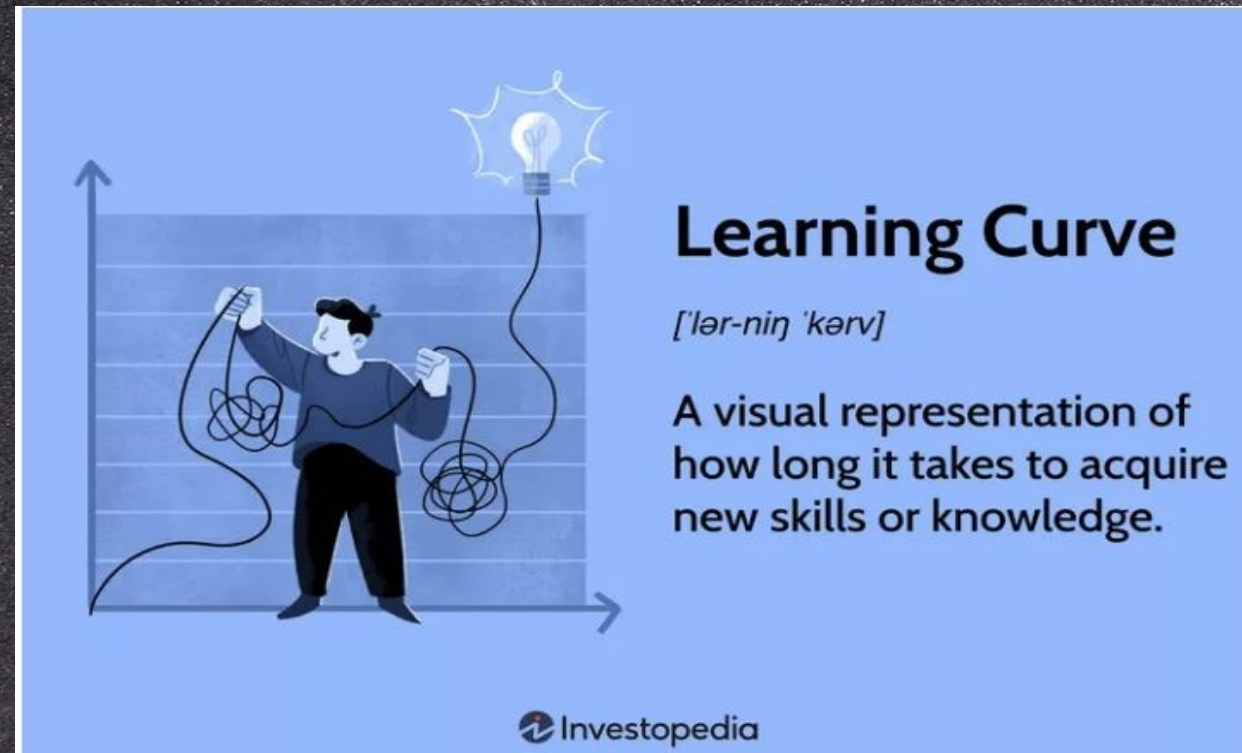
PROBLEMS

- Multi-level didn't work well.
- Labels didn't specify parts.
- Originally ordered keyed locks & couldn't get more with same key.
- Small pieces did go missing.
- Hanging clothing-type rack unbalanced and not enough space.

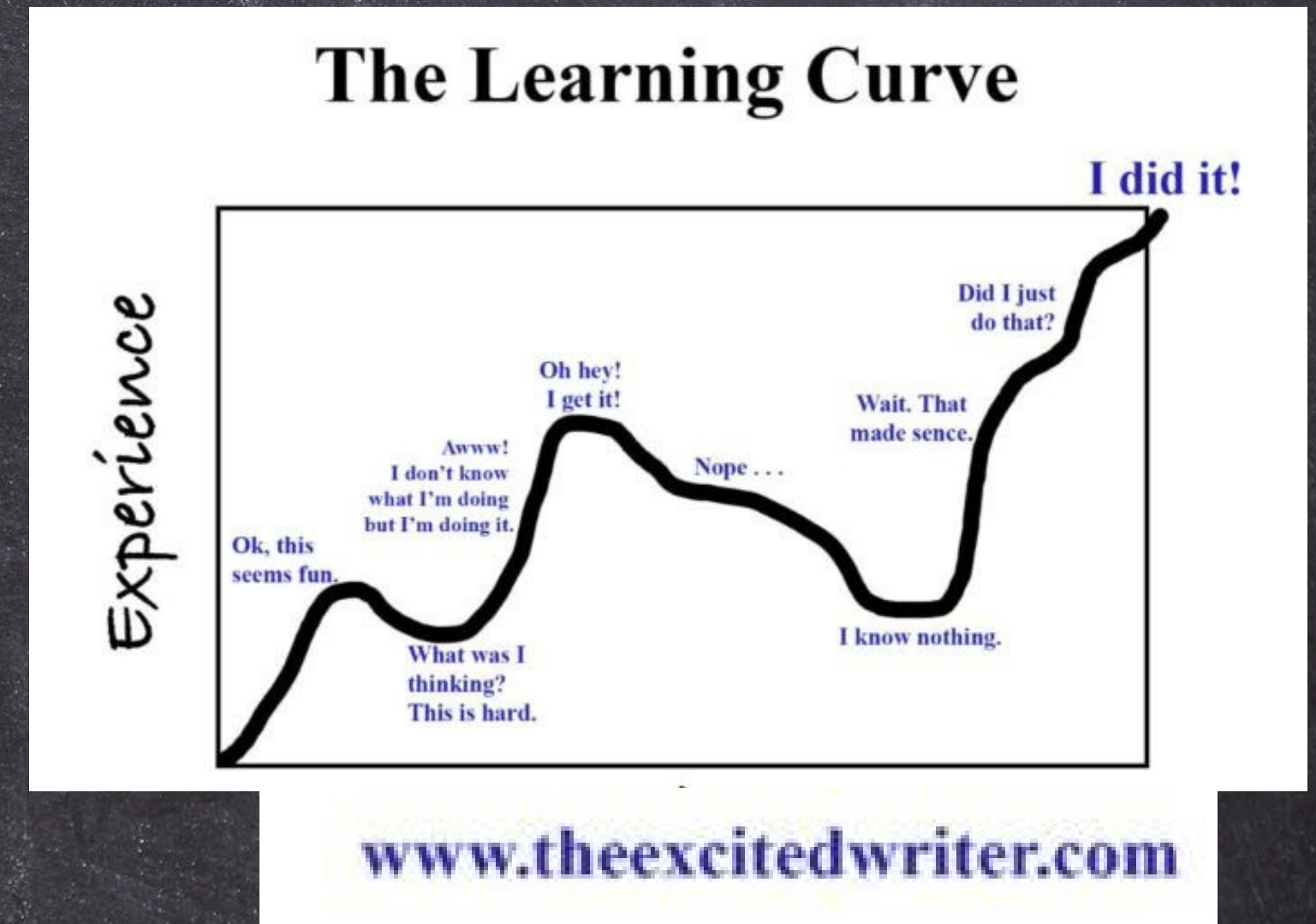
SOLUTIONS

- Three levels of kits. Distinguish by color coding.
- Small tag outside with general listing but itemized list inside.
- Change to TSA locks – all one code.
- Buy extra of items most likely to need replaced or plan to substitute with new item.
- Six kits moved to Santikos carts and shelf space made for STEAM, story, and early literacy kits.

LEARNING CURVE






- Think through process before starting - ex: changes made to bags.
- Definitely ask parents, teachers, homeschoolers, etc. about topics they would like to see and use.
- Be sure you are checking age appropriateness of all materials - books, games, puzzles, etc.
- Pieces of kits will go missing. Determine up front your policy on replacement.
- Ask again – parents, teachers, homeschoolers, and kids: what works and what doesn't.





THE FUTURE: MORE & BETTER KITS

- Unlimited potential
 - Build kits to meet partners' needs
 - Continue to gear kits to a variety of ages
 - Expand to other types of kits - senior memory kits.
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THANK YOU VERY MUCH!