

MSP2

Middle School Portal 2
Math & Science Pathways

Virtual Learning Experiences: Access to the NSDL for Middle School Youth

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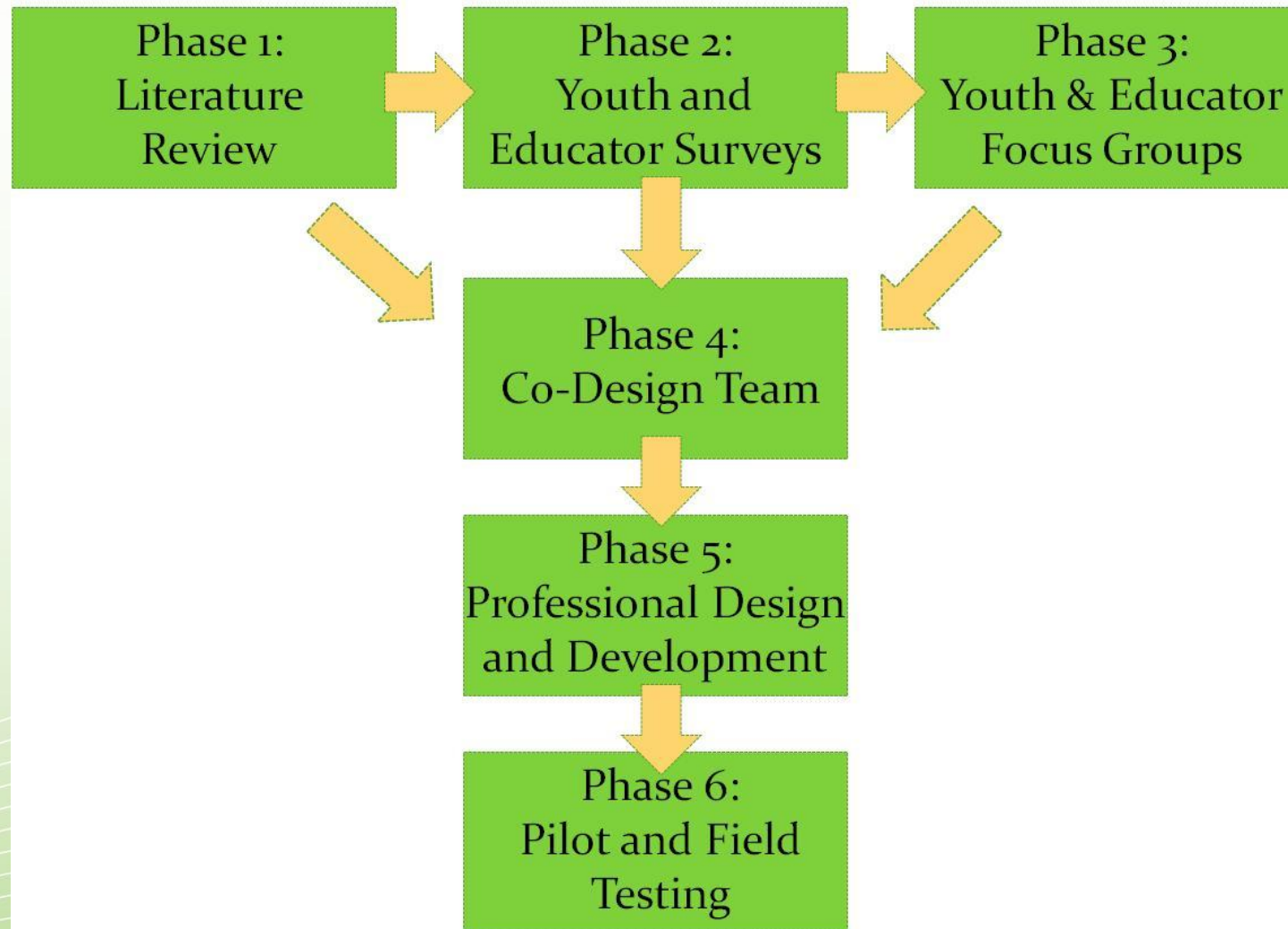
Overview

- Education Development Center, Inc.
- NSDL Projects
 - Gender & Science Digital Library (gsdl.org)
 - Effective Access Research Project
 - The FunWorks (thefunworks.org)
 - Middle School Portal 2: Math and Science Pathways (msteacher2.org)
 - Youth Virtual Learning Experiences (smartr.edc.org)
 - NSDL Youth Resources Project

MSP2: Virtual Learning Experiences

- Part of the MSP2 Pathway Project (SMARTR)
- SMARTR's goals for youth:
 - Develop increased STEM content knowledge
 - Increase their ability to explore, discover, problem solve, think critically about STEM
 - Increase their awareness of the educational pathways that lead to STEM careers.
 - Increased awareness of new technological literacies and use technology in a productive and responsible manner.

Youth-Centered Design Methodology



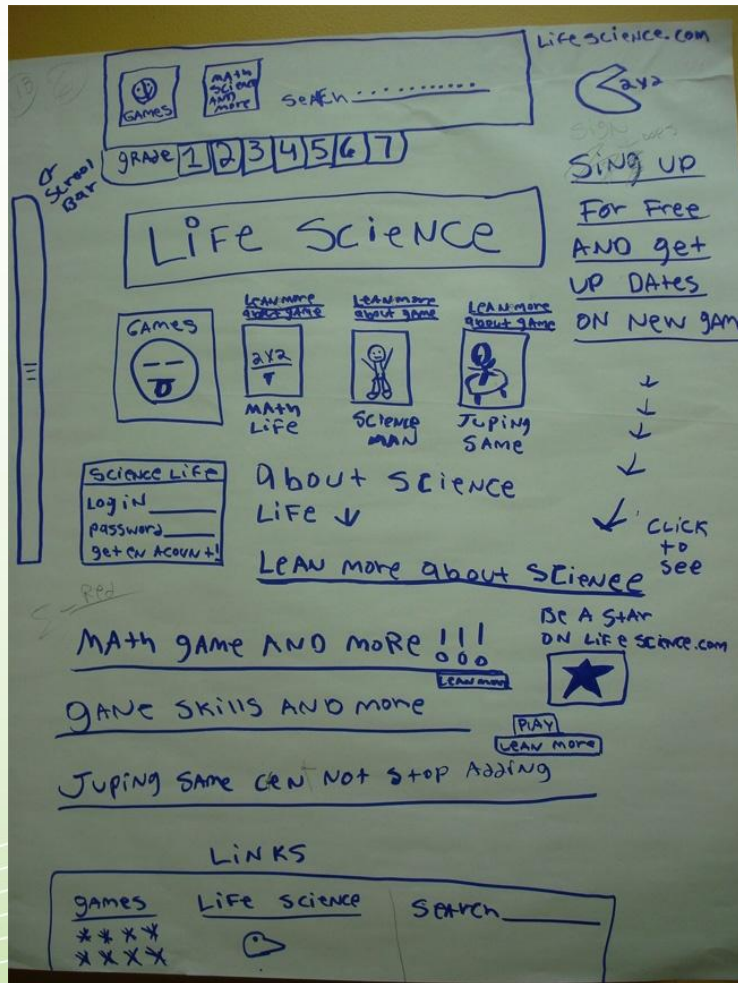
Survey and Focus Group Analysis

- Use online/resources in science class (vs. math class)—youth would like to see more technology incorporated into their classes
- Most youth are online consumers and some are online producers, find value in both consuming content and creating it
- Mastery of basic computer functions (report writing, Internet searches)
- Approximately 25% of the sample used online social networking sites at least once a day

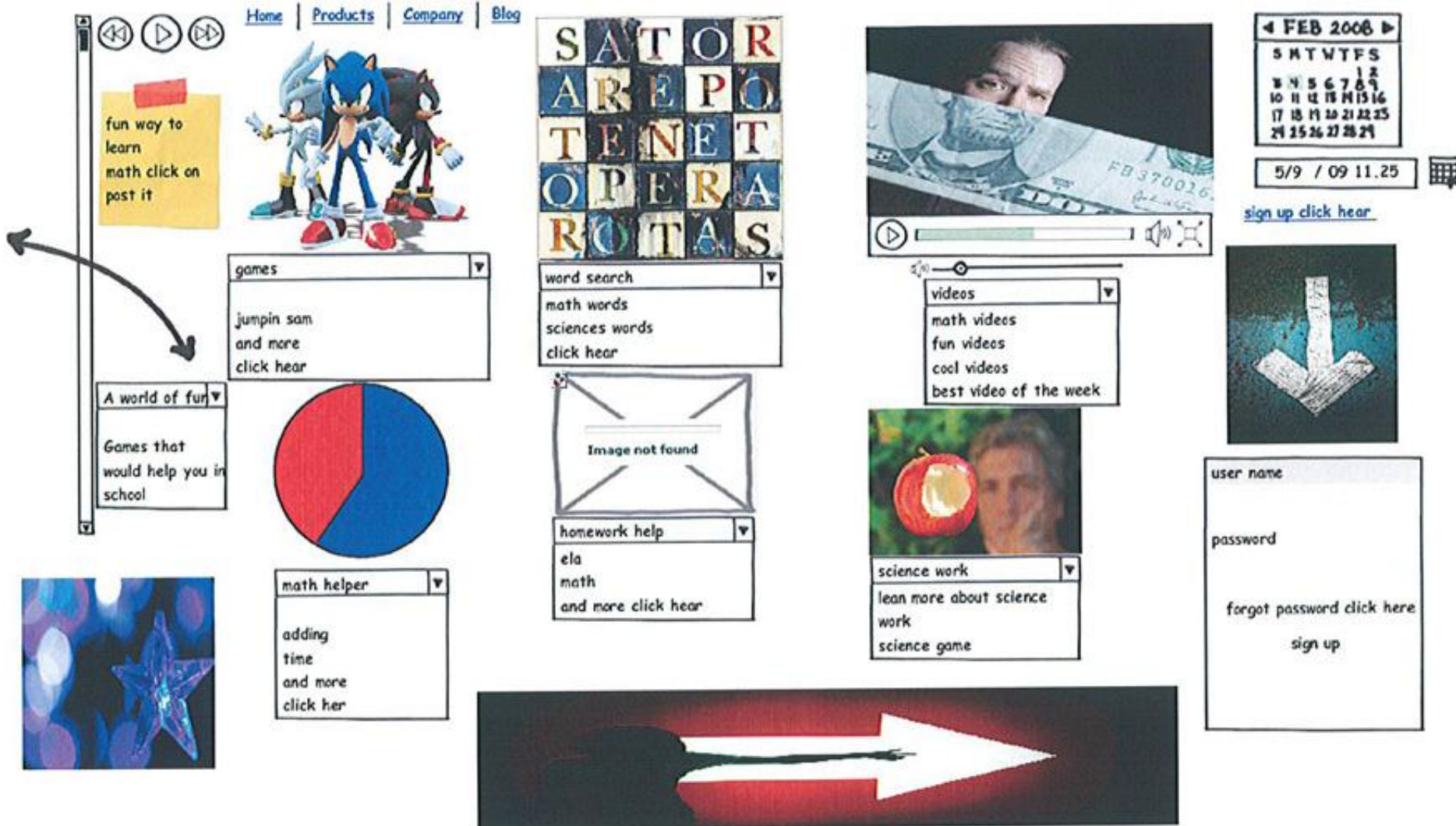
Survey and Focus Group Analysis

- Science topics of interest include life science and chemistry; math topics of interest include arithmetic & fractions
- Identify trustworthy sites through adult recommendations, site URL stem, .org url
- Prefer multiple methods of finding these things, dislike when too many/too few options are presented to them
- Direct answers, limited text, videos, and interactivity
- Dislike ads, not enough original information, childish look and feel

Youth Co-Design Team



Youth Co-Design Team



End Product: SMARTR

smarttr*
VIRTUAL LEARNING EXPERIENCES

Search GO

home science math about us

Welcome!
Welcome to SMARTR! The only math and science site around created by youth just like you! Here you will find some amazing math and science games and activities. Search by topic (e.g., Weather) or subject (e.g., Math). Site back, relax and EXPLORE!

Science & Math News

THE WEEKLY SCOOP: Better living from scorpion venom

SCIENCE SNAPSHOTS: World's tiniest fridge

[more](#)

Student Opportunities
Find the latest opportunities for adventures, challenges, contests, and camps.

Teachers
Are you an educator working with middle-school aged youth? Visit our companion site the Middle School Portal now!

Crocodile Attack!

0:00 / 2:52

Ratios Probability Weather Earthquake Chemistry

Tech Tools
Need help snazzing up a homework assignment?
[Get tools!](#)

Chat Online
Coming soon.

Question
Send us your feedback, questions and comments.
[Ask us!](#)

End Product: SMARTR

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science
Earthquake Chemistry Weather

What is a skull?

Games
See all our Science games here.
▶ See all

Activities
See all our Science activities here.
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Simulations
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Careers
See all our Science career information here.
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End Product: SMARTR

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Math: Ratios

13
Improper Fraction
learningupgrade.com YouTube

0:00 / 1:34

Ratios, Fractions & Percentages

What are ratios and fractions and why do they matter?

A ratio is a comparison of two numbers. We generally separate the two numbers in the ratio with a colon (:). Suppose we want to write the ratio of 8 and 12. We can write this as 8:12 or as a fraction $\frac{8}{12}$. A proportion is an equation with a ratio on each side. It means that two ratios are equal. And a percentage is a way of expressing a number as a fraction of 100 (per cent meaning "per hundred"). It is often denoted using the percent sign, "%", or the abbreviation "pct". For example, 45% (read as "forty-five percent") is equal to $\frac{45}{100}$, or 0.45.

Why do they matter? Ratios, fractions and percents are used everywhere in life! For example, they are used to figure out how many eggs to cups flour are needed when you bake a cake or how many miles per gallon a car consumes. And video and computer game designers use ratios and proportions to design the graphics in their games.

View more videos about Ratios, Fractions & Percentages here:

- Calculating 'Mach' Numbers using Ratios and Fractions
- Using Ratios and Proportions in Building Construction

Games

Try one of these games!

- Fraction Splat
- Decimals Cruncher
- Fraction Frenzy
- %-Fraction Matching

Simulation

Check out a simulation!

- Binary to decimal
- Mission magnetite

Activities

Try an activity!

- Look at some of these "How Tos"

Careers

Learn about cool careers!

- Video game designer

Contexts for Use

- In school
 - Related to important science/math topics
 - For use with existing STEM curricular content or MSP2 Resource Guides
- Out-of-school time
 - Supplement STEM activities in existing programs
- Anytime/Anywhere learning
 - Can be used by youth on their own in any setting
 - Related activities on the site include – tech tools for kids, games, science news for kids RSS feed, etc.

Thank you!

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