

PROBLEM SCAPE

THE VALUE OF XPERTS



SUMMARY

ProblemScape is a 3D adventure game for introductory algebra and is a problem-based learning environment that uses its narrative to spotlight real-world applications of math.

Highlights:

- Adventure in a 3D World
- Applications of Math
- Adaptive Feedback and Practice
- Research-backed Content
- Focus on Improving Self-efficacy and Metacognition
- Addresses Math Anxiety



THE GAME

ProblemScape is set in the 3D virtual world of Arithma. The player's avatar goes to Arithma looking for his sibling who went missing there and finds that none of the Arithmans can do math. The ones who can, the Xperts and Mathers, have all disappeared suddenly, and the mayor thinks they've been kidnapped by the PiRats!

The player goes on a quest to rescue his sibling and Xperts from the PiRats, helping the Arithmans with their problems along the way!

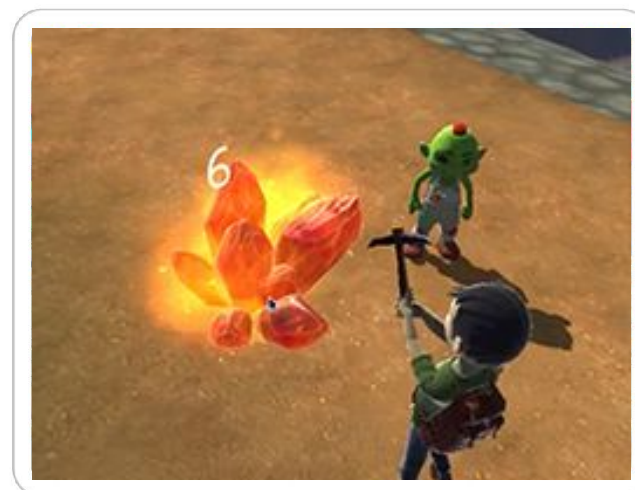
Even though the Xperts have vanished, they've left behind Xpert notebooks which provide the scaffolding for learning in the game with multimodal content that is deeply rooted in research.

THE GAME: NARRATIVE

The math is integrated in the storyline of **ProblemScape**, and many of the problems faced by the virtual characters mimic problems in real life and thus, put a spotlight on applications of algebra.

***Math anxiety** has been established as a factor in poor math performance.*

Being set in a world where the locals are scared of math, **ProblemScape** uses the narrative to quiz the students about their attitude towards math and attempts to increase their self-efficacy by including personalized positive feedback when students successfully finish an activity.



THE GAME: ELEMENTS TO ADD TO THE FUN

- Mine for gems
- Earn XP to unlock items
- Hatch cute pets that follow the player
- Have paintball fights
- Play challenge games

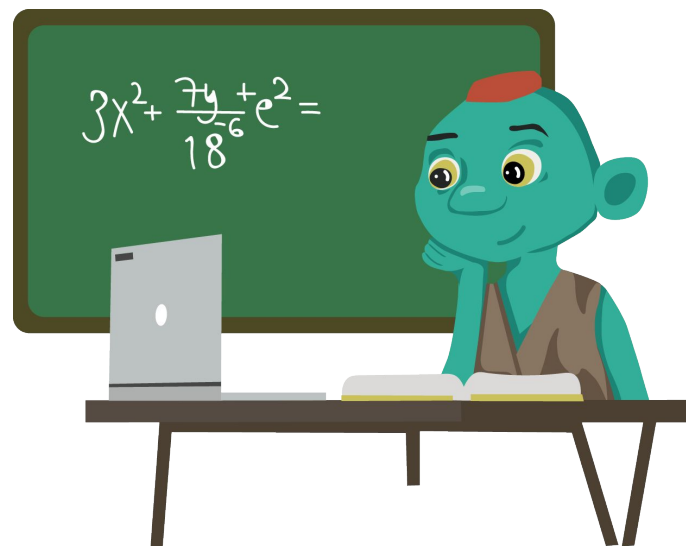


WHO IS PROBLEMSCAPE FOR?

ProblemScape is a problem-based learning environment designed to help every student learn - especially those who think that math is hard, boring, or irrelevant to their lives.

The introductory algebra course will be especially useful for:

- Students entering sixth grade to prepare them for rigorous coursework
- Students in sixth grade who would benefit from extension, deeper understanding, and/or a robust learning experience
- Students in higher grades who need extra help or intervention to catch up and review basic algebra concepts
- Students in independent and home schools looking for a challenging and fun math course
- Students going back to school needing a refresher on algebra



RESEARCH TO PRACTICE

“Our mission is to bring together relevant research in the learning and cognitive sciences and the latest technology to develop high-impact games that can help every student learn.”

A PREVIEW

Chapter 1: Mystery of the Missing Mayor



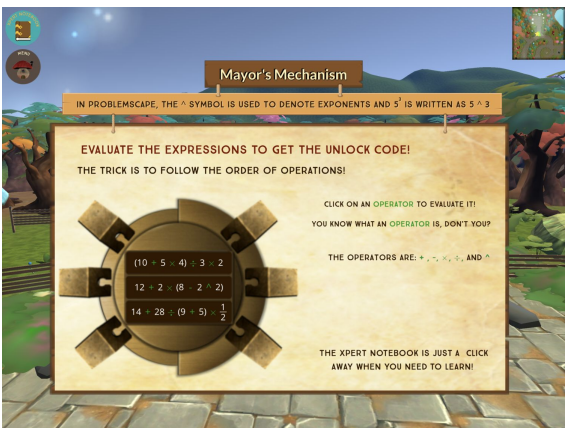
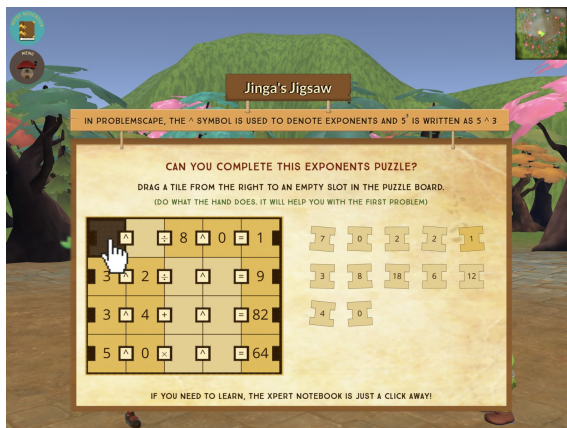
Chapter 1

Evaluate expressions using whole number exponents; use order of operations.

(CCSS.MATH.CONTENT.6.EE.A.1)
(CCSS.MATH.CONTENT.6.EE.A.2.C)

WHERE IS THE MAYOR OF ARITHMA?

The adventure starts with the player going to the nation of Arithma in search of their sibling. They need to talk to the mayor to get more information, but the mayor is not easy to find. First, the player has to play a game of paintball and solve a jigsaw puzzle for Jinga, an Arithman. Jinga will become the player’s assistant and take them to the mayor’s house. Can they unlock the mayor’s gate?



COURSE PACING GUIDE FOR CHAPTER 1

Chapter 1: Mystery of the Missing Mayor

Day 1: Warm Up

- Sign in, learn game mechanics, meet the Arithmans, team up with Jinga
- Play a friendly game of paintball and start earning XP
- Buy a sniffer egg from the XP shop, hatch it to get a sniffer to follow you

Day 2: Learn to Evaluate Exponents

- Use the Xpert Notebook to learn to evaluate exponents
- Help Jinga with an exponent puzzle

Day 3: Learn the Order of Operations

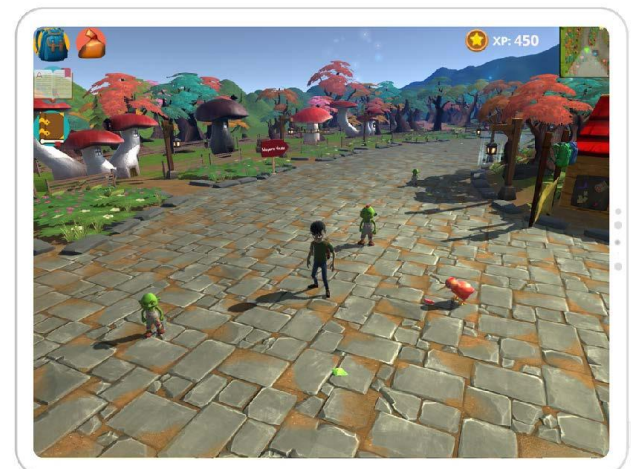
- Watch the video on why there is an order of operations and get a fun hat
- Use the Xpert notebook to practice evaluating expressions
- Open a number lock using the order of operations

Day 4: Teach the Order of Operations

- Teach Jinga to evaluate expressions using the order of operations

Day 5: Practice Metacognition

- Finish a cumulative chapter review to unlock the next chapter
- Win a potion for evolving your sniffer





THANK YOU

Want to learn more about ProblemScape? Sign up at
roundedlearning.com and try the first chapter for
free!