

Bringing the Cyber Classroom to Life

WITH HANDS-ON,
GAMIFIED LEARNING

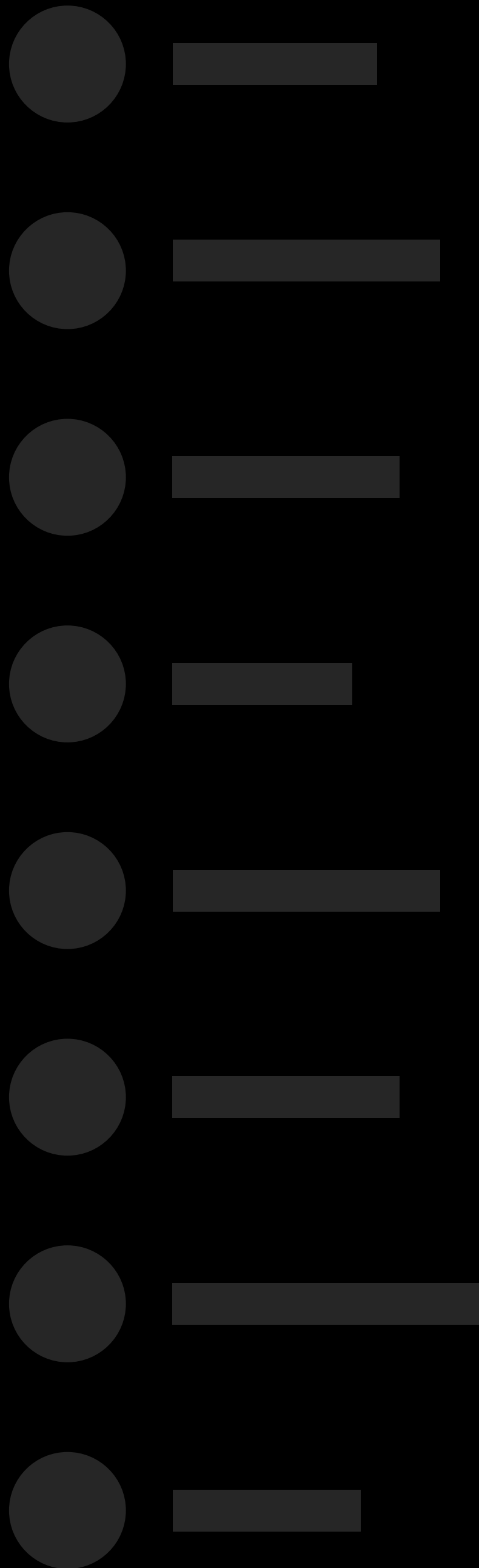


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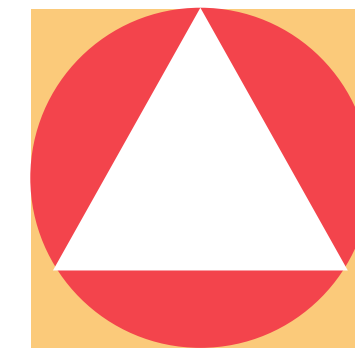
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What

YOU'LL LEARN

Readers will:

- Understand traditional cyber learning methods and pitfalls
- Learn teacher's pain points with passive-learning methods
- Discover how to implement new ways to teach cyber subjects using gamification
- Share opportunities to enhance cyber curriculum development for student learning benefit



TRADITIONAL Teaching Methods

- **LECTURES** - occurs in situations where students learn primarily from the instructor (the “sage-on-the-stage”).
- **FACE TO FACE** - interactions that occur in a physical location, such as on a college campus.
- **PRESENTATIONS** - students are shown resources from the instructor and are asked to notate important information.
- **MEMORIZATION** - abstract studying, not hands-on/applied. Committing answers to memory.



PITFALLS OF TRADITIONAL Teaching Methods

- **Minimal opportunity to assess student comprehension** – testing is the main way for professors to assess comprehension of learning materials. Tests are few and far between, and results can be skewed due to things like nervous test takers and students who just memorize answers rather than actually taking in information.
- **Students are less involved in the learning experience** – passive learning, such as lectures and presentations, do not allow students to apply learned information to hands-on scenarios, making it abstract and difficult to comprehend at times.
- **May seem boring or unrelatable to students** – students do not understand how the information being taught applies to them, how they will use it in the real-world, or why they need to learn it in the first place.

Pain Points

FOR CYBER PROFESSORS

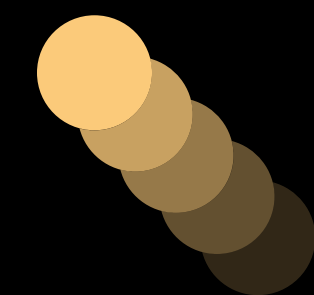
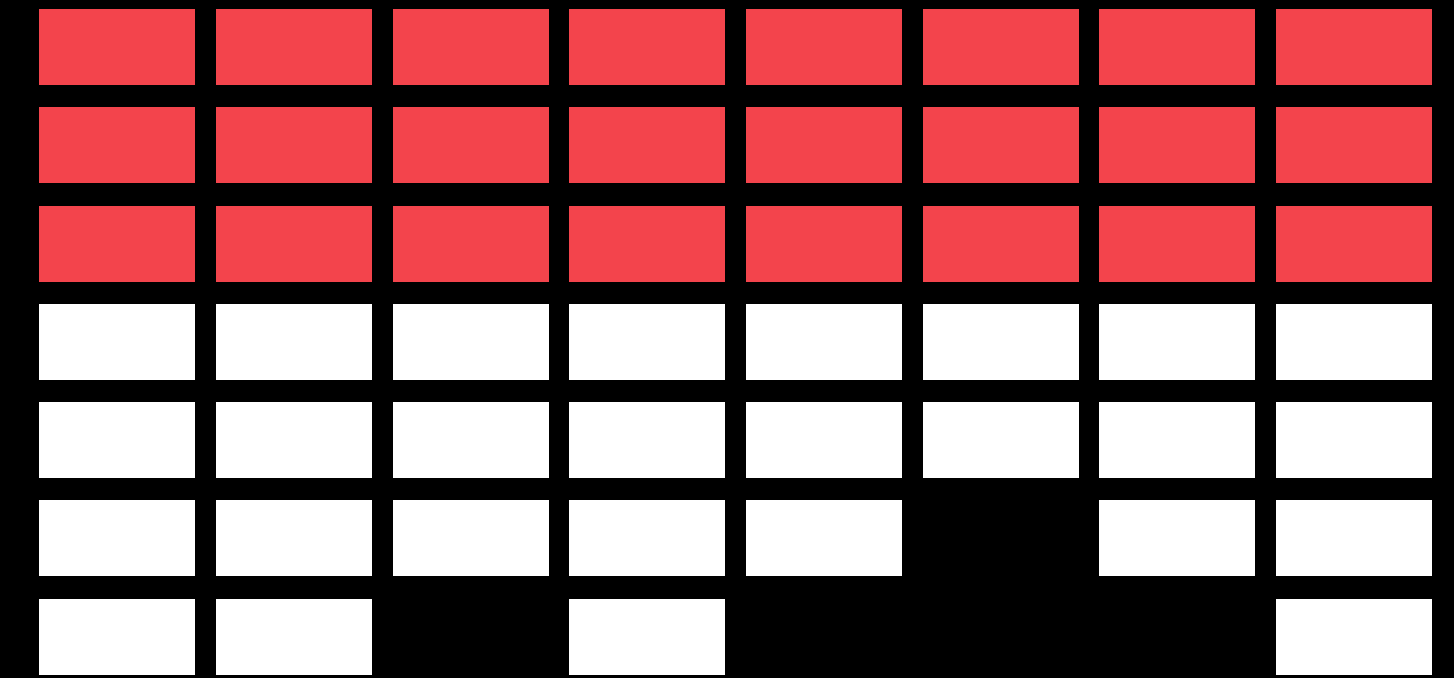
- Keeping students engaged
- Maintaining high course registration numbers
- Meeting learning objectives against evolving industry requirements
- Pacing with technology and workforce developments
- Sustaining curriculum relevancy amidst dynamic industry changes
- Developing “fresh” curriculum topics year-over-year
- Assessing student performance and learner information retention

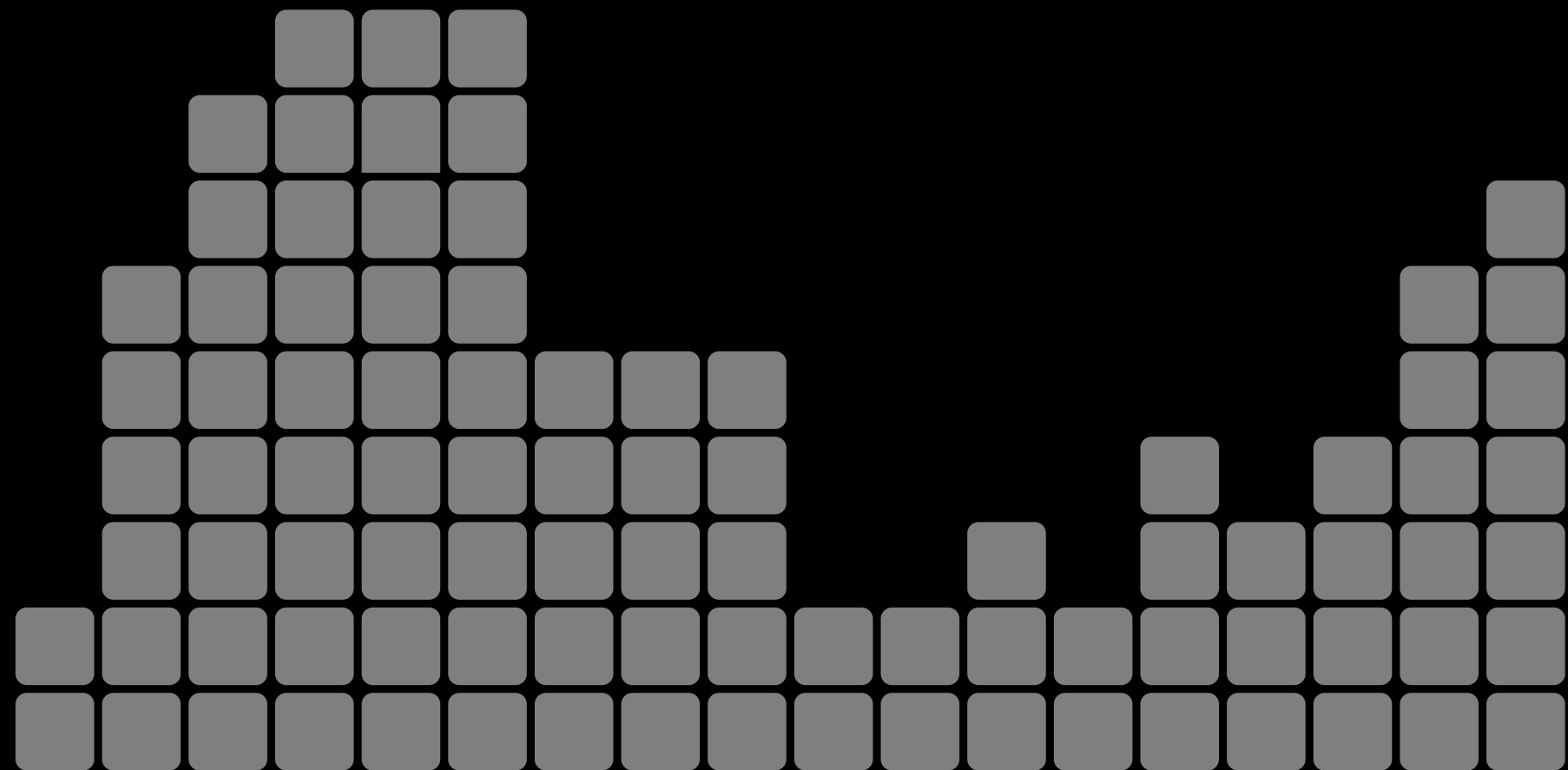
TEACHING CYBER WITH A Modern Approach

Given the implications of traditional teaching methods and outcomes, professors have the opportunity, given modern technology, to immerse students in realistic training that compliments theoretical paradigms of cyber curriculum.

Today's learners grew up with video games and are adept to learning with gamified elements. In fact, a whopping 97% of kids play computer and video games¹, making gamification a smart way to keep students engaged in the classroom.

¹ <https://blog.ryan-jenkins.com/2013/03/04/12-startling-gamification-stats>





THE ADVANTAGES OF Active, Gamified Learning

- Aids in cognitive development in adolescents²
- Almost 80% of learners say that they would be more productive if their course curriculum activities were more game-like³
- Active learning through hands-on interaction and repetition increases knowledge retention rates to 75%⁴
- Affords students with different learning styles accessibility in the classroom⁵

² <https://review42.com/gamification-statistics>

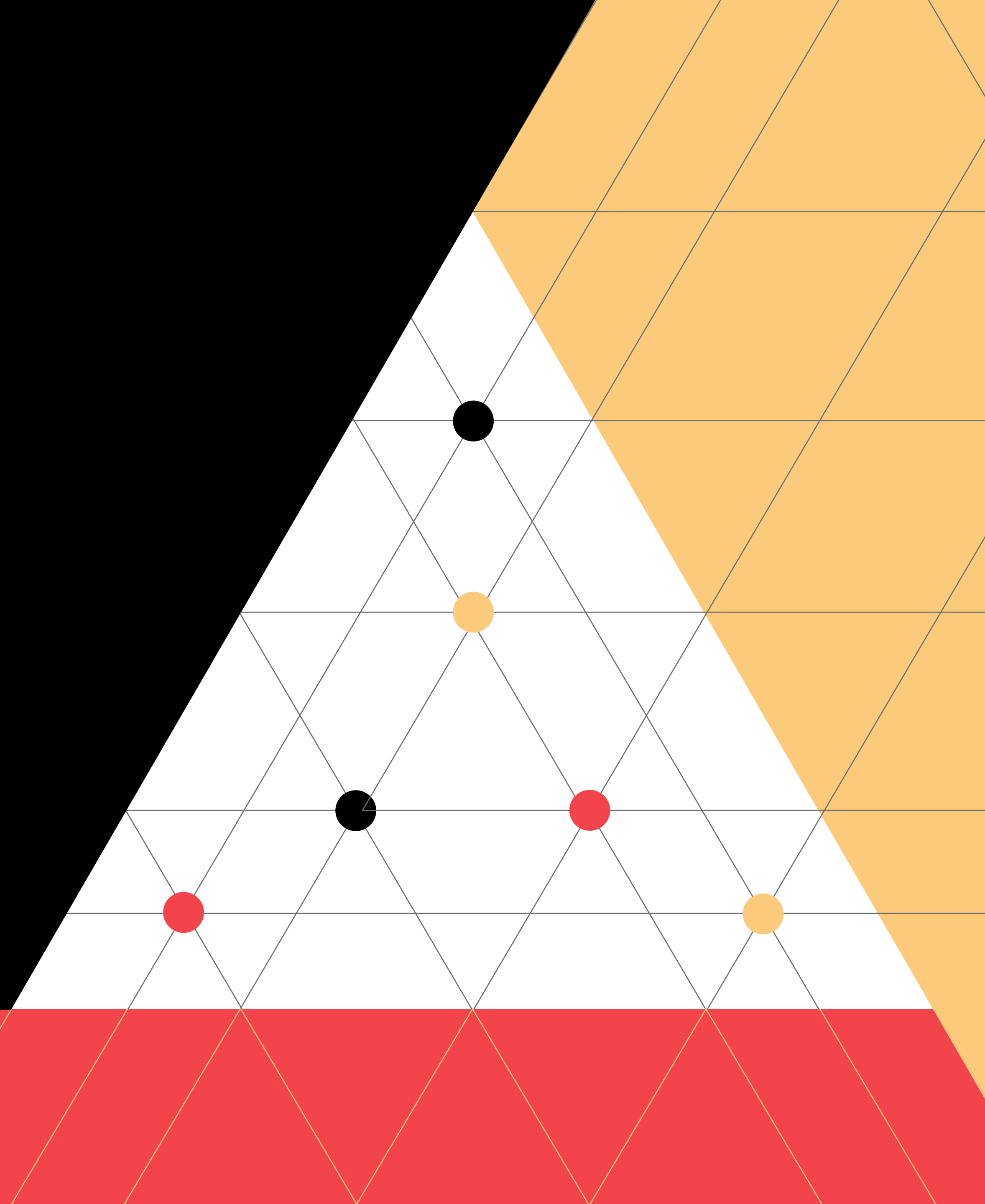
³ <https://www.talentlms.com/blog/gamification-survey-results/>

⁴ <https://thebossmagazine.com/gamified-learning-cyber-training/>

⁵ <https://muse.jhu.edu/article/389587>

WHAT IS A Cyber Range?

- A cyber range is one platform upon which gamified elements can be incorporated into the cyber learning process.
- A closed, virtualized network that allows students to practice network defense in a safe environment.
- With the “flip of a virtual switch” environments can be reset for continual student practice of cyber skills, coding, and programming activities.





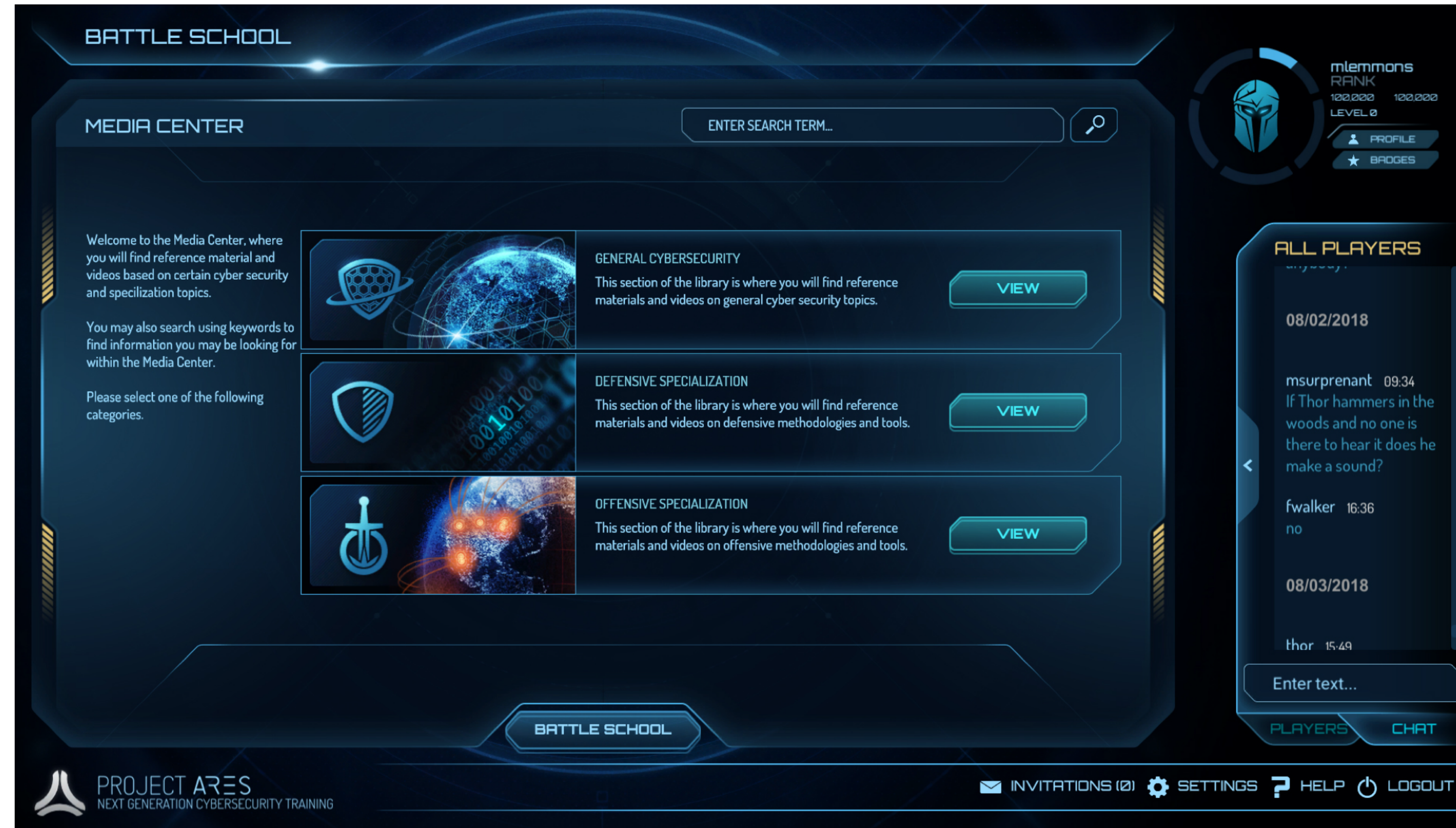
THE BENEFITS OF Learning On A Cyber Range?

- It offers active, realistic emulations of cyber systems and devices allowing users to practice against real-world threats.
- Allows cyber learners to apply text-book learning to building skills in real-time.
- Enables cybersecurity students to emulate a scenario where a vulnerability compromised a system.

1 What Can Project Ares

BRING TO THE CLASSROOM?

Performance-based learning and assessment – students are able to perform learning-based tasks to demonstrate knowledge and skills. Teachers are able to adapt their own methods according to student performance.



What Can Project Ares

BRING TO THE CLASSROOM?

Simulated environment where teams can work together to improve teamwork – Project Ares can be used on an individual or team level. Playing missions with others improves student's abilities to work together.



What Can Project Ares

BRING TO THE CLASSROOM?

Real-time progress feedback for students and instructors alike – students and professors can jump into the platform at any time to gauge how far the student has progressed, what they've learned, areas needing improvement, etc.

OPERATION GOATHERD | MISSION M1E DISABLE BOTNET SESSION 8956

MISSION ORDERS

SITUATION
MISSION
EXECUTION
SUSTAINMENT
CSC
ROE
REFERENCES

REFERENCES

A. GENERAL:
URL: Certified Ethical Hacking

B. BOTNETS:
URL: Linux Bible

C. LINUX COMMAND LINE:
URL: Linux Bible

D. WINDOWS SERVICE/PROCESSES:
URL: Name uncover meaning Windows files processes

MISSION PROGRESS

You have viewed the Mission Orders. Proceed to Mission Control and take a short qualification quiz.

OKAY

PREVIOUS | NEXT

MISSION CONTROL

PROJECT ARES
NEXT GENERATION CYBERSECURITY TRAINING

SETTINGS | HELP | LOGOUT

Team mlemmons

08/24/2018

athena 12:26
Welcome to your mission. I am Athena, your in-game advisor. I will join you when your mission desktop is ready.

athena 12:26
I am now available to answer your questions. Message me by typing "@athena" followed by your query.

Enter text...

PLAYERS | CHAT

4 What Can Project Ares

BRING TO THE CLASSROOM?

Simulates on-the-job experience to prepare students for the real world – Project Ares missions are based on real-world cyber scenarios, meaning students can apply what they learn on the platform to future jobs.



What Can Project Ares

BRING TO THE
CLASSROOM?

A safe environment where new ideas can be tested and teams or individuals can work to solve complex cyber problems – since Project Ares is launched via cyber range, it is a safe network where students can solve real-world cyber problems without risk.



Schedule

A DEMO

Show your students the power of gamified range training with Project Ares. Our award-winning, hands-on cyber learning platform will support and augment your cyber curriculum and is sure to prepare learners with the real-world skills they need to feel empowered. Whether students are being introduced to cyber for the first time as a viable career option, or looking to land their cyber dream job post-graduation, Project Ares helps students foster appreciation for and interest in today's cyber security practices to benefit businesses.

[Schedule a demo](#) today to see what Project Ares can do for your learning curriculum and student engagement!

SCHEDULE A DEMO