PLASMA GAMES



Hunter Moore

Plasma Games CEO



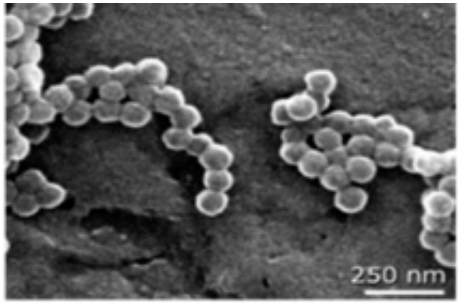
PLASMA GAMES



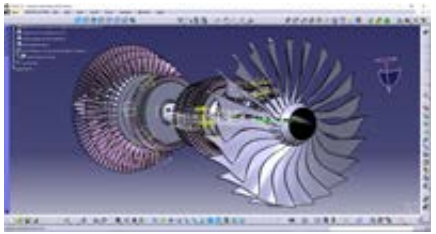
Pratt & Whitney
A United Technologies Company



Sandia National Laboratories



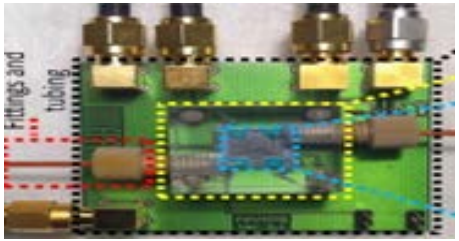
IBM



BOEING

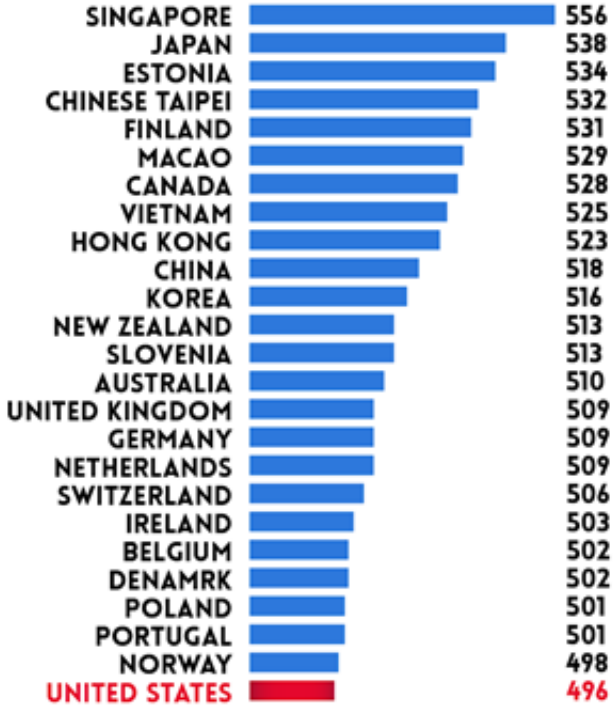


GT



PLASMA GAMES

International Science Rankings



2015 PISA SCIENCE SCORES

The United States ranks

25TH

in the world

PLASMA GAMES

Biggest Economic Impact

High Paying High Quality Jobs

Growing Industries

Difficult to Offshore

Chemistry Related Jobs

High Growth

Chemistry is integral to agriculture, energy, pharmaceuticals, IT, manufacturing, cosmetics… and everything else you can touch.



Here to Stay

Chemistry-based jobs are hard to automate, offshore and outsource (unlike comp. sci.), thus they promote long term economic growth.



Chemistry - Bonus

Regional Prosperity

Chemical corporations also create jobs for wielders, plumbers, electricians, HVAC, and many other high paying skilled labor professions



Rural Bonus

Chemistry based corporations require lots of land which is an asset of rural communities.



Chemistry Workforce Pipeline

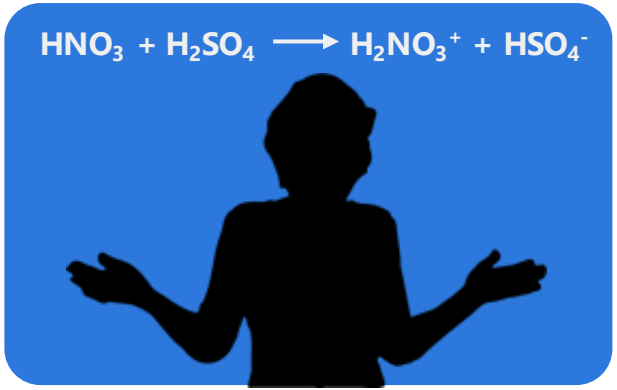
Demand >> Supply

The top five highest paying college majors are *all chemistry-based*.



Least Qualified Teachers

Less than 60% majored in chemistry.



Least Favorite Subject

Less than 1% of students say Chemistry is their favorite subject.



PLASMA GAMES

Biggest Challenges for Teachers

ENGAGEMENT

CONTEXT

TIME

Plasma Games



WINNER
BEST LEARNING GAME
IN THE WORLD

PLASMA GAMES

Plasma Games




2/2
1/7
0/0
Defeat the Aliens
Mo
21 °C
874 °C
2,623 °C
35 kg
E
7.46 MJ
Activate


2/2
2/7
0/0
Defeat the Aliens
Mo
2,431 ℃
2,998 ℃
2,623 ℃
35 kg
E
19.64 MJ
Activate

Sci-Ops: Global Defense



PLASMA GAMES

Sci-Ops: Global Defense



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Sci-Ops: Global Defense



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Sci-Ops: Global Defense



PLASMA GAMES

Sci-Ops: Global Defense



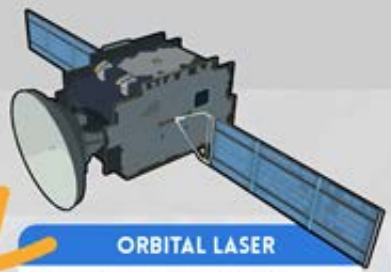
PLASMA GAMES

Real World Applications

STEM TOPICS COVERED IN GEAR

SCI-OPS: GLOBAL DEFENSE
EPISODE 1





METALLIC ARMOR

- Matter
- Units of Measure
- Atomic structure
- Bonds
- Heating curves
- Cooling curves
- States of matter
- Phase changes
- Transition metals
- Periodic tables & trends

GAS LASER

- Atomic Structures
- Bohr Model of the atom
- Noble Gases
- Ions
- Electromagnetic waves
- Wave/particle duality
- Periodic table & trends
- Energy conversion & transfer

+ REAL SCIENCE & TECHNOLOGY

- Roles of science & technology in society
- Grand challenges facing humanity
- Differences between:
- Research
- Design
- Engineering
- Manufacturing
- Testing
- Quality & Reliability
- Supply Chain Tradeoffs & balancing risks

+ IN-DEMAND CAREERS

- Personal, story-driven examples of real careers working with the in-demand STEM fields critical to the US economy.
- Exploration of the education and training it takes to get into these careers, and the salaries and perks that make the careers amazing!

ORBITAL LASER

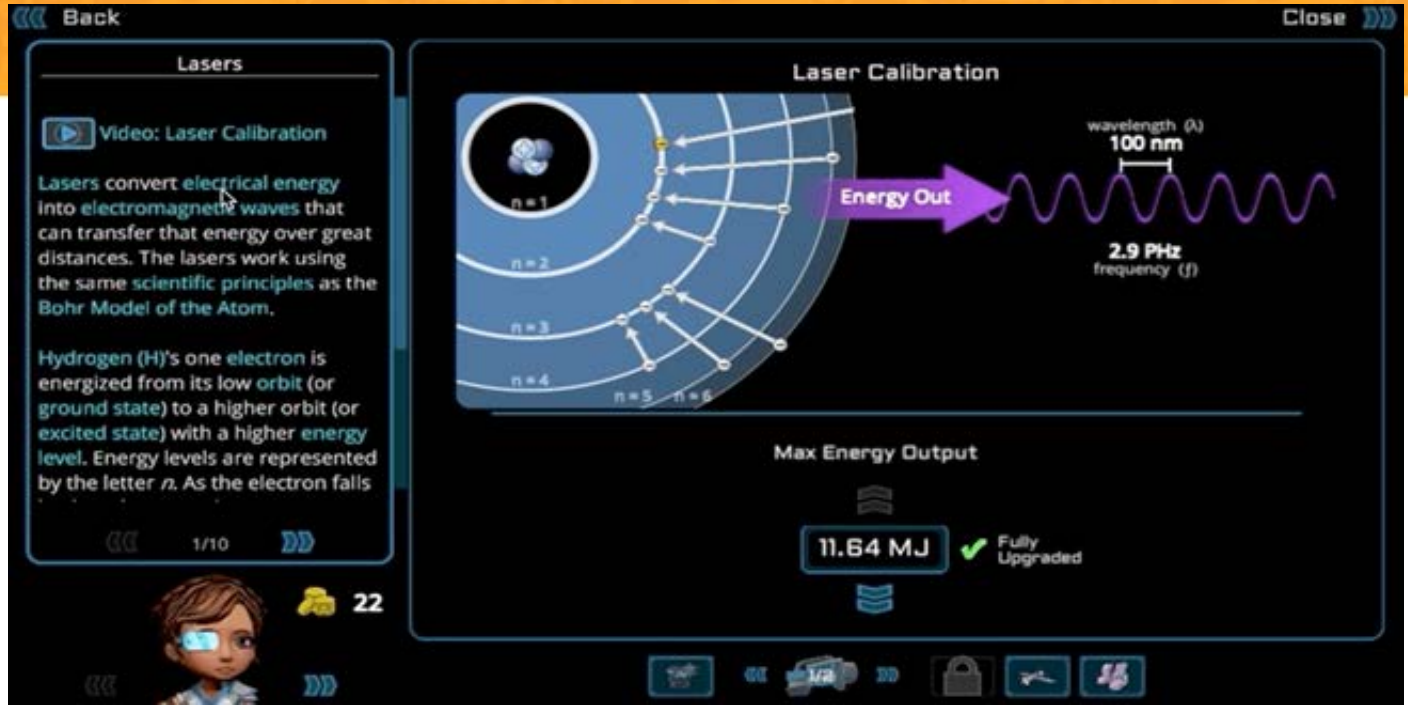
- Electromagnetic waves & interaction with gases
- Telecommunications & digital devices
- Metalloids
- Semiconductors
- Intro to electronics

EMAG BURST GADGET

- Moles
- Conversions (moles to particles, moles to volume, moles to mass)
- Atomic weight
- Molecular weight
- Dalton's Atomic Theory
- Brief into to Stoichiometry
- Balancing equations
- Solubility

COMPRESSED GAS BOOTS

- Ideal gas law
- Pressure
- Temperature
- Energy conversion & Transfer
- Kinetic energy
- Open & close systems
- Calorimetry



· INTELLIGENT TEXT · CLICKABLE DEFINITIONS · ENGAGING VIDEOS

PLASMA GAMES



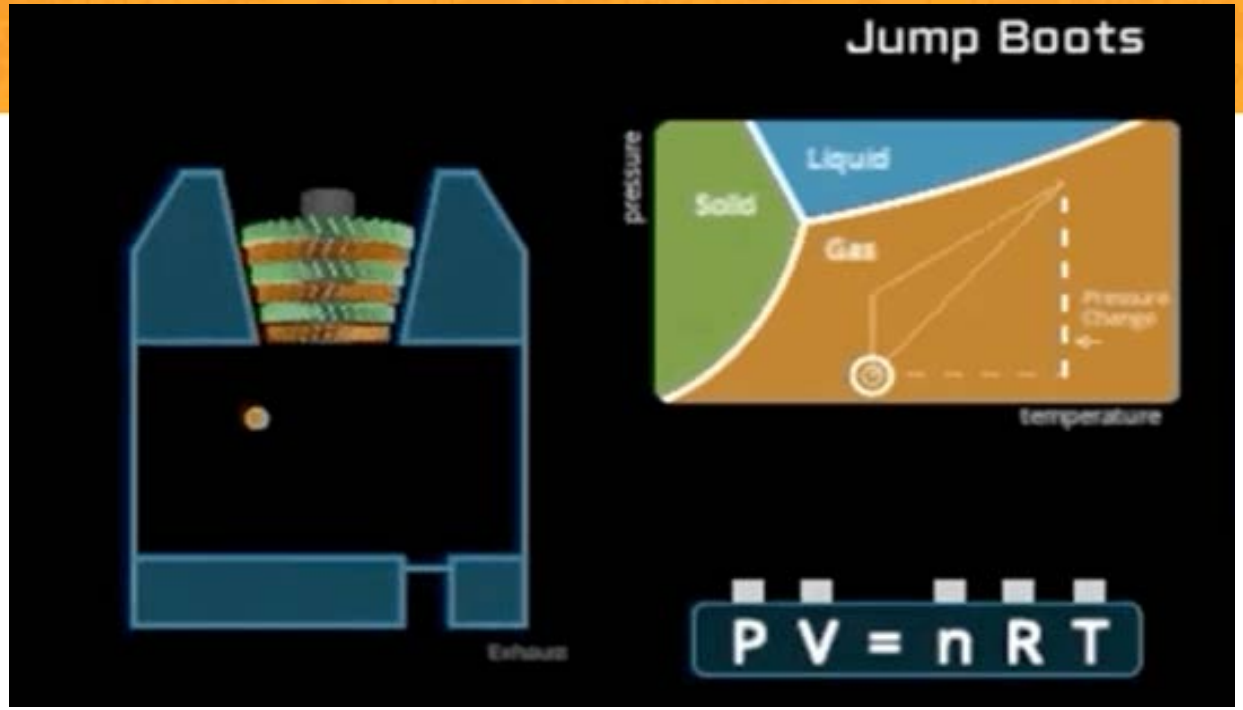
SCIENCE STANDARDS APPLIED TO REAL WORLD TECHNOLOGIES

PLASMA GAMES



ENGINEERING AND DESIGN TRADEOFFS

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DYNAMIC EQUATIONS AND GRAPHS

PLASMA GAMES

STEM Careers

Back

Close

0

RESET



Nikole Williams

Nikole's plans for high school were derailed by the Hive. On the plus side, she has a lot more time to experiment with the design of her lasers.



Mechanical Engineer

+1 Jump Range

Research and Development Team



Back

Close



Dr. Ankita Joshi

+100% Laser Energy



Research Partner

Tech | Experience | Inspiration

Education:

Southern Methodist University
BS, Physics

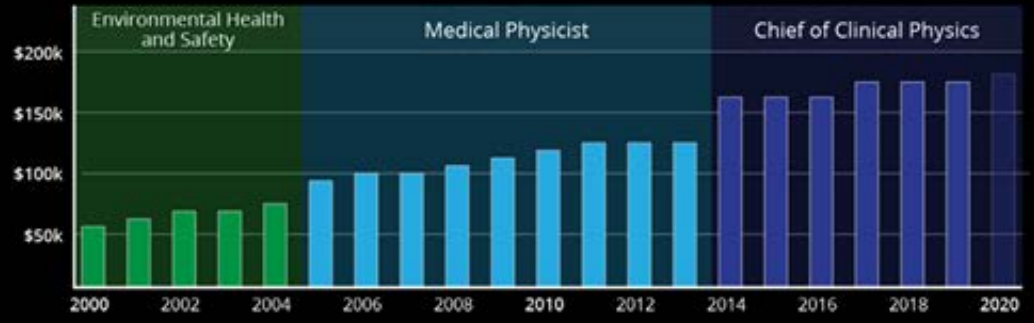
University of North Carolina, Chapel Hill
MS, Biological and Medical Physics

Experience:

H. Lee Moffitt Cancer Center
and Research Institute
Environmental Health & Safety Specialist

The University of North Carolina
Cancer Care Center at Rockingham
Medical Physicist

Miami Cancer Institute
Chief of Clinical Physics





Dr. Ankita Joshi

+100% Laser Energy

Research Partner

Tech | Experience | Inspiration

Double Laser Energy

Our Lasers work by using electricity to amplify the potential energy in a gas medium and then releasing it as a focused, narrow beam.

When partnering with Dr. Joshi, we use her **OverCharge** technology to install a capacitor into your laser's electrical firing system. Discharging this capacitor will increase the voltage across the gas and greatly increase the amount of energy released as a laser beam.

There is only enough energy stored in the capacitor to activate this ability once per level.





OverCharge capacitor increases energy output potential.

Back

Close



Dr. Ankita Joshi

+100% Laser Energy

Research Partner

Tech | Experience | Inspiration

Ankita likes taking things apart, seeing how they work, and then *improving* them. As a teenager, Dr. Joshi lost her sister to cancer and made the decision to pursue scientific research as a way to help others in similar, difficult situations. Now, she studies and works with lasers, using them to improve fiber-optic technologies that allow researchers to see minuscule variances in soft tissue, thus allowing for early cancer detection.

In her free time, Ankita enjoys science projects outside her field of expertise. As president of the Green Hills robotics club, Dr. Joshi works with other scientists to create out-of-the-box prototypes and volunteers as a judge for local Science Fair competitions.



Fiber Optic Wire.



Robotics competitions show STEM concepts in action.

NCSU RESEARCH RESULTS

71 TEACHERS, +3,000 STUDENTS, AND 12 DISTRICTS

MOTIVATING



+3-7% OF STUDENTS IMPROVED THEIR SELF-EFFICACY AND UTILITY IN CHEMISTRY & STEM

ENGAGING



72% OF STUDENTS LIKED THE GAME AND WANT IT IN THEIR CLASS

EFFECTIVE



+19% INCREASE IN CORRECT ANSWERS TO END-OF-COURSE (EOC) QUESTIONS AFTER 20-30 MINUTES OF GAMEPLAY

100% OF ALL TEACHERS IN THE STUDY EXPRESSED AN INTEREST IN CONTINUING TO USE SCI-OPS!

PLASMA GAMES

PLASMA GAMES

"Sci-Ops is going to pull in those kids who never thought they had an interest or ability in Chemistry. **This is an area of need in our schools that can directly impact our communities for the future."**

Dr. Donna Cotton, Chief Academic Officer in Wilkes County, NC

"**There is no game like Sci-Ops** as it fuses education and entertainment in a fun, unique gaming experience."

Dr. Brian Hunnell, Assistant Superintendent in Cleveland County, NC

"I consider Plasma Games as a very supportive resource in teaching and my students consider it as **an ingenious way of learning.**"

Elena Voicilia, Science Teacher in Rockingham County, NC

"The game will inspire students to pursue STEM college majors and careers."

Debbie Jennings, Career Technical Education Director in Burke County, NC

"This product changes life trajectories towards fulfilling STEM careers. Legislators, please fund this program for our students!"

Jessie Maglio, Science Teacher in Wake County

"**The growth they've shown simply by using it...is huge.** That is evidenced by data collected during last year's pilot study and research effort."

James Brown, Science Teacher in Harnett County, NC

"Plasma Games helps my students' consider STEM careers interesting, important and necessary for 21st century learners."

Enid Perez, Science Teacher in Guilford County, NC

"Students will **RUN** to class to play this game."

Renee Crandol, Science Teacher in Edgecombe County, NC

"**Motivation and participation is higher in my students because of Plasma Games.**"

Grace Yusckat, Science Teacher in Cumberland County, NC

"**Plasma Games' level of meaningful content does not exist in other games.**"

Heather Dietzler, Chief Academic Officer In Carteret County, NC

"Plasma Games provides STEM learning in a gaming environment **to increase student learning and retention.**"

William Gay, Science Teacher in Union County, NC

"**The mastery mindset Plasma Games encourages is contagious in the classroom.**"

Georganna Davis, Science Teacher, Franklin County, NC



"Plasma Games motivates them to a higher learning level, enables student to practice critical thinking skills, promotes meaningful learning, and increases focus."

Sandra Storch, Science Teacher in Rockingham County, NC

"Sci-Ops will pique the interest in students…. This will **inspire students to pursue STEM** degrees in college."

Kelly DeLong, Director of K-12 Math and Science in Richmond, County, NC

"I was extremely impressed with the pairing of high-level graphic design while merging rigorous content. **The seamless integration of gaming strategy along with practical chemistry concepts is outstanding.**"

Ellis Ayers, Executive Director Academic Services in Avery County, NC

"We would greatly appreciate the support of our Legislators to help give our students access to Plasma Games."

Jenna Regan, Secondary Curriculum Director in Person County, NC

"**Until Plasma Games, I have not had any true exposure to digital resources that I thought were appropriate for the teaching of chemistry concepts.** The ones I have seen have not been worth the time or effort needed to be able to use them effectively."

Kelly Loop, Science Teacher in Ashe County, NC

"My students when they come to my class, **the jobs they only know are servers in the restaurants or grocery stores** and what they want is just leave school when they reach their legal age to work. **I have seen an increase of students aiming to finish a college degree or a university degree."**

Jonas Almerino, Science Teacher in Wayne County, NC

"I introduced Plasma Games to my honors chemistry students and now **they BEG to play every time we have a spare moment."**

Rebecca Cooper, HS Science Teacher in Wilkes County, NC

"Plasma Games is an excellent resource!"

Thomas Brown, HS Science Teacher in Watauga County, NC

"Plasma Games can pique the kids' interest in a STEM career when they didn't realize it existed before."

Chris Conway, Instructional Coach in Union County, NC

"It is more in a gaming format versus other types of resources we have tried. We know **students respond better to games rather than learning tools.**"

Stephanie Horton, Director of Curriculum & Instruction in Bertie County, NC

"Plasma Games is more self-contained / more relevant than other resources while actually being a game."

Nick Hendley, Science Teacher in Granville County, NC

"Plasma Games will revolutionize educational gaming if their products retain the quality and detail of their Chemistry game. **I have never seen a more inclusive, impressive, or engaging teaching tool!**"

David Madorin, Cabarrus County, Chemistry Teacher

"**My students need this type of learning** as they have grown up amidst computer gaming and find it makes learning fun."

Scott Evans, Science Teacher in Watauga County, NC

"**Our Legislators need to pursue funding to offer this learning resource** for the students of Caldwell County Schools as well as others across the state."

Keith Hindman, Middle School Director in Caldwell County, NC

"I believe this is the direction our lessons need to take in order to engage students, keep interest high, and keep students thinking critically about science content."

Dr. Toni Witherow, Math and Science Director in Richmond County, NC

"I have not seen a more engaging program. **I've had several students ask me about STEM and chemistry careers after playing the game.** The interest definitely grew."

Brian Rada, Science Teacher in Wayne County, NC

"Plasma Games are colorful and engaging to students, invites a competitive spirit that helps **motivate each student on an individual basis**, and provides a level of difficulty that challenges students to work independently outside of class."

Jeff Moore, Science Teacher in Rockingham County, NC

"This has turned out to be a wonderful platform to inspire students in chemistry. **I have found that both high-ability students and lower-ability students have enthusiasm for the game and the science involved.** I highly recommend as a supplement to any science curriculum. "

Adrienne Evans, Science Teacher in Columbus County, NC

"Plasma games increases **student engagement in learning science**. The integrated gamification and competition support multiple opportunities for students to build background knowledge and/or review previous content. "

Dottie Hayes, Instructional Facilitator in Caldwell County, NC

"This looks like an actual video game, which will pull students in. It is awesome that the **content is embedded and critical thinking must take place in order to be successful**. This is not just a memorize and throw back quiz set up."

Neva Winters, Science Department Chair in Mitchell County Schools

"I think that this will be a **fantastic** program model that we would love to scale for many, many classrooms beyond our science classroom."

Donnell Cannon, Principal in Edgecombe County, NC



"I love that this game includes real scientists in North Carolina with interesting jobs. This has the potential to inspire students to pursue a STEM career that they may otherwise not realize is possible."

Christina Pennington, Curriculum Coordinator in Ashe County, NC

"I try to motivate my students to learn complex concepts that many of them feel they can't do. After playing Plasma Games, many of them feel like they can even continue their science education with a more in-depth chemistry course. **The game is empowering**."

James Gardner, Science Teacher in Guilford County, NC

"**Students will definitely be more engaged in learning.**"

Derek Lapiska, Chemistry Teacher in New Hanover County, NC

"My students love Plasma Games because: (1) it doesn't feel like they are learning while they are (2) It keeps them thinking and engaged (3) **provides relevance to curriculum and real world applications**. "

Kimberly Mawhiney, Science Teacher in Currituck County, NC

"Plasma Games will be a very valuable resource in improving and promoting STEM programs."

Chad Brooks, Science Teacher in Cherokee County, NC

"My students have begun to consider new career paths after being exposed to them in the game. Questions about what classes should they take, etc."

Wendy Takah, HS Science Teacher, in Rowan County, NC.

"It's **more interactive than our other virtual instruction materials**."

Kathy Glasheen, Instructional Coach in Union County, NC

"Plasma games will provide my teachers tools to support their work in **building & diversifying the STEM workforce.**"

Kristina Rogers, Sr. Administrator Secondary Science in Wake County, NC

"It has opened their eyes to a different approach to learning, and how a career in science could be fun."

Christy Hall, Science Teacher in Alexander County, NC

"**North Carolina students need access to Sci-Ops** to increase their learning in chemistry. The software makes learning tangible and fun. **Funding from the legislation will equalize the opportunities across the state** so all students will have equitable resources."

Christy Arrowood, Instructional Coach Science in Burke County, NC

"My students are **more interested in STEM** and STEM careers after using Plasma Games"

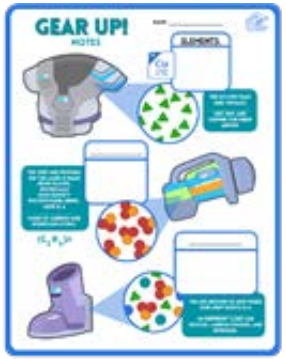
Michelle Parrish, Science Teacher in Harnett County, NC

Teacher Materials

Pacing Guides



Guided Notes



Reading Passages



Card Sorts



Interactive Activities



Digital Comics



STEM Career Spotlights



Graphic Organizers



Teacher-Led & Student-Led Activities



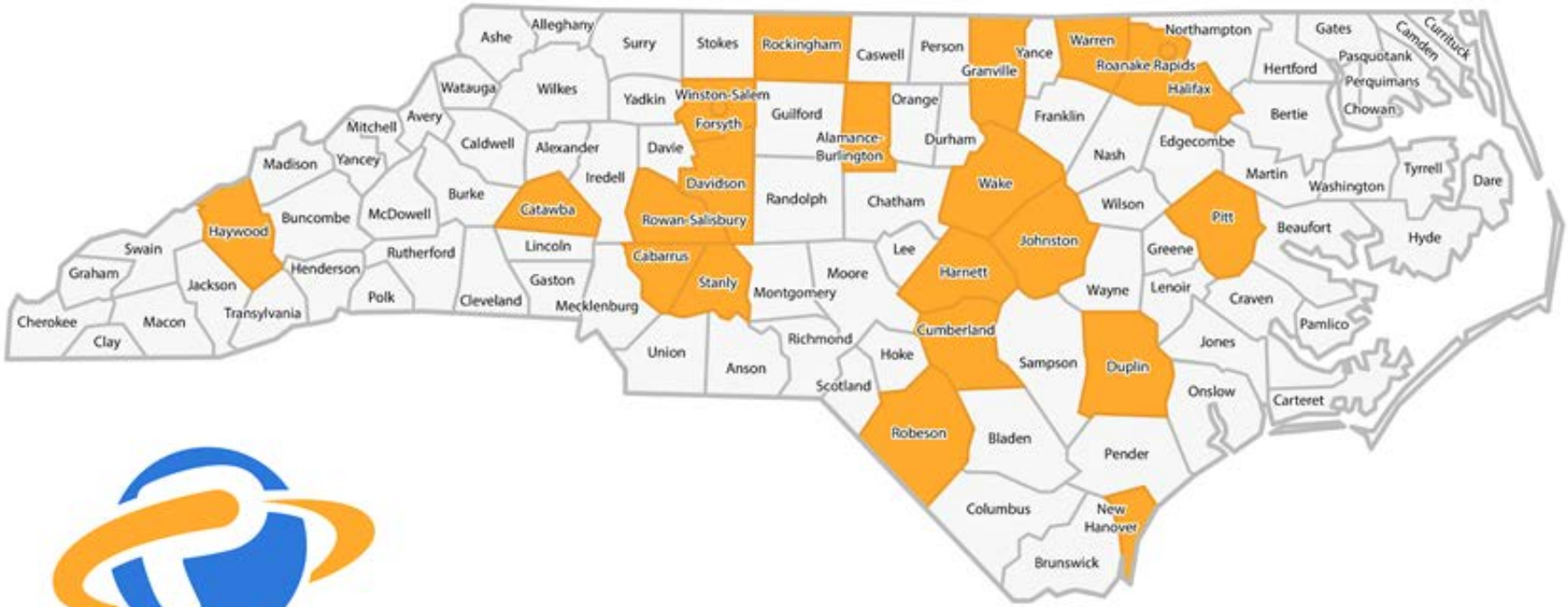
Manuals



...and more!

PLASMA GAMES

NORTH CAROLINA PILOT



PLASMA GAMES

Plasma's Future Plans



+ Expansion to Physics, Biology, Computer Science

PLASMA GAMES

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Thank You!



Hunter Moore, CEO hunter@plasma.games 252-721-3294