Positive Physics, Chemistry, Physical Science, Biology, Environmental Science & Engineering

GRADE LEVELS:
8-12

Educational Setting:
This program is best implemented in situations where the same students meet for the full implementation, rather than drop in and out for a lesson or two.

Award Provides:
- Training sessions
- One-year teacher subscription to online platform
- All student subscriptions to online platform for academic year 24-25
- $100 stipend for attendance of required workshop
- On-going support

Additional Cost(s) to Awardee in 2024-2025:
- No additional cost necessary.

Approximate Sustainability Cost After Award Period:

$299/Teacher/Year (includes unlimited student subscriptions)

2024-2025 STEM Scale-Up Program Summary:
Positive Physics, Chemistry+ (website: positivephysics.org) is an engaging lesson and problem bank for Middle & High School Science. The site was built by teachers in diverse classrooms and designed to be accessible to students on any level from middle school to AP.

> 5000+ Interactive questions & video lessons designed to replace a textbook.
> Immediate feedback & automatic grading.
> Randomization to prevent copying.
> Nurturing environment to build student confidence.
> Response customer service (contact jack@positivephysics.org with any questions).
> 1 Minute Intro Video

Reviews from Last Year's Iowa Awardees:

"My chemistry, physics, and physical science students LOVE using positivephysics.org!"
- Launa Buxton (East HS, Waterloo)

"Positive Physics is one of the best online programs I've used in my many years of teaching. It is easy to use and tailor to my personal needs and preferences. Students are very engaged in the lessons and practice!"
- Liz Moritz (Midland HS, Midland)

"This resource has been an amazing addition to my classroom this year! The assignments allow students to discuss strategies instead of sharing answers because numbers are randomized so that no two students will have the same answer."
- Anna Pauley (Atlantic High School, Atlantic)

"The site is fantastic. It is great for new learning and for review. I had a student today that told me she felt really good after completing the lesson on velocity graphing from yesterday because she was struggling, and she now understands the concept. She said it feels good to go from struggling to understanding. Jack is also personally very responsive to any question and welcomes feedback."
- Brad Horton (Kennedy High School, Cedar Rapids)

Requirements to Implement the Program:
1.) Educator(s) must participate in one, one-hour workshop (Teacher will receive $100 attendance stipend)
2.) Educator(s) must participate in the STEM Council Scale-Up Educator Survey.

Website:
https://www.positivephysics.org/

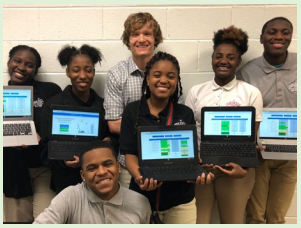
Videos:
https://www.youtube.com/embed/9bhDEkuJsyI?autoplay=1

Social Media:
N/A

Informational Webinar(s):

Wed, Jan 24 at 3:30pm (Register Here)

Wed, Feb 21 at 3:30pm (Register Here)



Happy Physics & Chemistry Students

Iowa Standards Alignment:

Positive Physics and Chemistry is designed to cover all topics covered in the following courses:

Physics (including AP)
Chemistry (including AP)
Biology (including AP)
Environmental Science (including AP)
Physical Science
Engineering

In addition, each unit begins with an inquiry activity that is based on the NGSS/Iowa standards. Three inquiry activities with strong curricular ties are described below and full NGSS alignment can be found on the site.

HS-PS2-1: Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration. [See Unit 5 Inquiry]

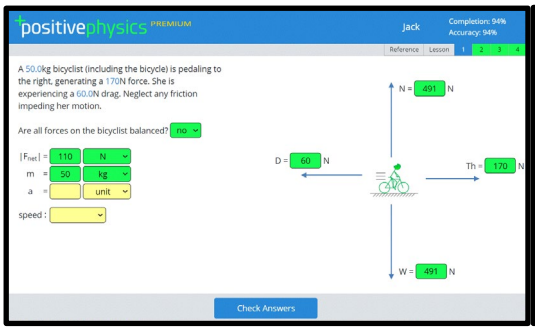
HS-PS2-2: Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system. [See Unit 14 Inquiry]

HS-PS3: Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects). [See Unit 13 Inquiry].

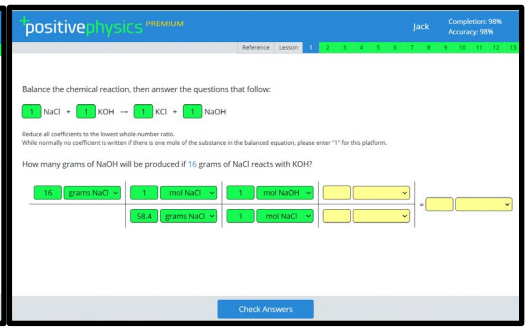
Professional Development:

Duration: One hour
Date(s): Various in July & August, please see: https://calendly.com/jreplinger/iowa
Location: Virtual through Zoom

Photos:



Physics Example Question



Chemistry Example Question

STEM Scale-Up Program Application Link: www.IowaSTEM.org/Scale-Up-Application