



# THE SCIENCE OF SUPERPOWERS

Grades: 1-3



**Students:** 30

**Contact Hours:** 12+ hours

*This program includes 12 days of activities, each designed to last about one hour. Use one lesson a day, clump them together into larger blocks or break them apart to be worked in one at a time throughout the course of a school year.*

**Recommended Settings:**

- Summer camps
- Elementary school classrooms looking for hands-on STEM experiences
- After-school programs

**Pricing Options:**

- Complete Program: \$775<sup>00</sup>
- Refill kit: \$95<sup>00</sup>
- Curriculum Printed Copy: \$295<sup>00</sup> \*
- Curriculum Digital Download: \$129<sup>00</sup> \*\*

**Curriculum Topics:**

- Day 1 - The Origin Story
- Day 2 - The Man of Steel
- Day 3 - The Amazonian Princess
- Day 4 - The Caped Crusader
- Day 5 - The Web-Slinger
- Day 6 - Super Senses
- Day 7 - The Star-Spangled Avenger
- Day 8 - Forces of Nature
- Day 9 - Superhero Training Camp
- Day 10 - The Prince of Puzzles
- Day 11 - The Ace of Knives
- Day 12 - Superhero Hall of Fame

**Assessment:**

Formative or summative assessment in the Check for Understanding section at the end of each lesson.

**Training Available:**

Professional development webinar training is available. Talk to a PCS STEAM Program Specialist for more information.

**Materials:**

*The Science of Superpowers* comes with an Instructor Guide, a full set of printed student pages, a digital curriculum download and all the supplies needed for 12 days of activities:

- Ball Pump: 1
- Balloons: 50
- BrickLAB classic BrickPacks: 4
- Cloth tape measure: 2
- Colored pencils (12 pk): 5
- Dry erase markers: 15
- Dry erase pockets: 15
- Headbands: 3
- Magnets: 16
- Masking tape (60 yards): 1
- Mesh bag for cleaning bricks: 1
- Paper clips: 200
- Pencil sharpeners: 5
- Post-it-Notes (100 ct): 1
- Scissors: 1
- SloMo bump balls (4"): 6
- Storage tub: 1
- String (475 ft): 1
- Toothbrush: 8
- Wheel, Tire and Axle Set (450+ parts): 1
- Yarn (256 yrd skein): 1

*\* Print curriculum includes 1 Instructor Guide and a full set of printed student pages.*

*\*\* Digital curriculum downloads come with the Instructor Guide only, which includes master copies of all student pages.*

**Logistics & Storage:**

Each kit is shipped in a sturdy tub that can be reused to store materials during camp and throughout the year.

The page pockets included in the kit are designed to eliminate the need for new sets of copies for each group of students. As they write with dry erase markers on the heavy-duty plastic, the original copy stays untouched underneath, ready for the next group as soon as the pocket is wiped clean.

**Shipping Availability:**

Contact a PCS STEAM Program Specialist for shipping options.

# Alignments & Standards

## Habits of Mind

- Applying Past Knowledge to New Situations
- Creating, Innovating, and IMagining
- Listening with Understanding and Empathy
- Finding Humor
- Gathering Data through All Senses
- Listening with Understanding and Empathy
- Managing Impulsivity
- Questioning and Posing Problems
- Persisting
- Remaining Open to Continuous Learning
- Responding with Wonderment and Awe
- Striving for Accuracy
- Taking Responsible Risks
- Thinking about Thinking
- Thinking and Communicating with Clarity and Precision
- Thinking Flexibly
- Thinking Interdependently

## 21st Century Skills

- Communication and Collaboration
- Creativity and Innovation
- Critical Thinking and Problem Solving
- Flexibility and Adaptability
- Information, Media, and Technology Literacy
- Initiative and Self-Direction
- Leadership and Responsibility
- Productivity and Accountability
- Social and Cross-Cultural Skills

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## Common Core State Standards for Mathematics

- CCSS.MATH.CONTENT.K.CC.B.5. Count to tell the number of objects.
- CCSS.MATH.CONTENT.1.NBT.C.4. Use place value understanding and properties of operations to add and subtract.
- CCSS.MATH.CONTENT.1.MD.A.1. & CCSS.MATH.CONTENT.1.MD.A.2 Measure lengths indirectly and by iterating length units.
- CCSS.MATH.CONTENT.2.OA.A.1. Represent and solve problems involving addition and subtraction.
- CCSS.MATH.CONTENT.2.MD.A.1. Measure and estimate lengths in standard units.

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## Next Generation Science Standards\*

- NGSS 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
- NGSS 2-PS1-3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.
- NGSS 3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.
- NGSS 3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.
- NGSS 3-PS2-3. Ask questions to determine the cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.
- NGSS 3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets
- NGSS K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- NGSS K-2-ETS1-2. Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- NGSS K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

\*NGSS is a registered trademark of Achieve. Neither Achieve nor the lead states and partners that developed the Next Generation Science Standards were involved in the production of this product, and do not endorse it.

## International Society for Technology in Education (ISTE) Standards for Students

- ISTE-S.3.d Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.
- ISTE-S.4.a Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
- ISTE-S.4.c Students develop, test and refine prototypes as part of a cyclical design process.
- ISTE-S.5.a.c Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.
- ISTE-S.6.b Students create original works or responsibly repurpose or remix digital resources into new creations.
- ISTE-S.7.c Students contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

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