New York Hall of Science

NOTICING TOOLS™ – FIVE iPAD APPS CREATED BY NEW YORK HALL OF SCIENCE – INSPIRE KIDS TO LEARN MATH AND SCIENCE

Apps Align with Next Generation Science Standards and Common Core Standards for Mathematics

A joint project of NYSCI's Digital Education Department and Local Projects

Now Available in the App Store

Queens, New York – The New York Hall of Science (NYSCI) has created a suite of five iPad apps that motivate students to learn fundamental math and science concepts and give teachers and parents a set of mobile resources that can inspire children's everyday explorations in the classroom, at home, on the playground, or just about anywhere else. Collectively known as *Noticing Tools*™, the five apps have been available in the App Store since August 17, 2015. NYSCI created *Noticing Tools*™ in collaboration with Local Projects, a media design firm for museums, brands and public spaces.

"The most effective way to use technology for education is to treat devices as tools for creativity rather than consumption," says Dr. Margaret Honey, president and CEO of NYSCI. "Leveraging an iPad's capabilities to capture data, photo and video, our *Noticing Tools* encourage kids to create their own experiments, record their results, interpret the data, and share what they've learned. We've seen that all types of learners find these apps irresistible because not only do they empower kids to be content creators, but also to share what they've learned with their teachers and peers."

The apps that make up the *Noticing Tools*™ suite embody NYSCI's Design, Make, Play approach to learning, which invites a broad array of learners to explore complex concepts in science, technology, engineering and math (STEM.) These are among the very same concepts that often discourage learners from pursuing STEM education and careers.

With the *Noticing Tools*™, users can measure distances, capture photos and videos for documentation, and create notations and narratives about all types of data. The apps, designed for students in upper elementary grades through high school, include:

· **Playground Physics** – Focuses on the science concepts of force, motion and energy. Using this app, students record ordinary play activities such as tossing a ball and then playback the recording in the *motion*, *energy* or *force* modes to discover and analyze the physics of that activity. The app and accompanying curriculum activities are aligned to the Next Generation Science Standards (NGSS).

· **ChoreoGraph** – Allows users to learn about rotation, translation and reflection. With this app, users create an animated character from photos and explore graphs and coordinate geometry to

choreograph dance moves for their character. The app and corresponding curriculum activities address Common Core Math Standards (CCSM).

· **Fraction Mash** – App users explore fractions while creating mashups of two or more photos, manipulating the size and number of pieces from each individual photo. The app and accompanying curriculum activities address Common Core Standards for Mathematics (CCSM).

· **Size Wise** – Users explore ratios and proportions while creating forced perspective photographs. The app encourages users to reason proportionally while creating images where something large appears small, or vice versa. The app and curriculum activities are aligned to the Common Core Standards for Mathematics (CCSM).

· **Volumize** – With this app, users can take two-dimensional photos and make them three-dimensional models. In the process, they'll explore the relationship between surface area and volume.

Aligned with the Next Generation Science Standards and the Common Core Standards for Mathematics, the open-ended apps and supporting resources offer a creative platform for students of any age to explore math and science through self-guided projects they find intrinsically motivating. Educators and parents will find the *Noticing Tools*™ useful for doing many types of activities and supporting lesson plans on a broad range of topics. The *Noticing Tools*™ website will also feature a gallery of user-created projects to demonstrate the vast potential of the apps.

"We chose these topics for the apps because they are the math and science concepts that are perennial stumbling blocks for students," says Douglas Moore, vice president of digital education strategy and business development for NYSCI. "*Noticing Tools* were created to give educators and parents an option for using technology strategically, taking advantage of an iPad's inherent capabilities to capture all types of content and leveraging students' natural inclination to use technologies as a tool for creativity."

NYSCI collaborated with Local Projects to develop the concepts and design technology of the *Noticing Tools*™ apps. "We're proud to have developed these experiences from the beginning with such incredible partners," says Jake Barton, principal and founder of Local Projects. "The idea that kids can capture each other playing games and derive math or physics in the moment is absolutely revolutionary. It's truly social media in that it requires kids to talk to each other, work together, collaborate and be creative. This is how we'll get our next generation to be engaged with science and math—one funny picture, video or post at a time."

Noticing Tools™ are available in the App Store for free.

NYSCI has developed lessons and usage tips for the apps that are designed for students both in and outside the classroom. These resources can be downloaded for free at noticing.nysci.org.

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The New York Hall of Science – The mission of the New York Hall of Science (NYSCI) is to nurture generations of passionate learners, critical thinkers and active citizens through an approach called Design, Make, Play. Design, Make, Play emphasizes open-ended exploration, imaginative learning and personal relevance, resulting in deep engagement and delight in science, technology, engineering and mathematics. NYSCI was founded at the 1964-65 World's Fair and has evolved into New York's center for interactive science serving a half million students, teachers and families each year. NYSCI is open Monday – Friday, 9:30 am – 5 pm and weekends, 10 am – 6 pm. General admission is $16 for adults and $13 for children (ages 2-17), college students with valid ID, and seniors (62+). For more information, visit nysci.org or call 718-699-0005. Follow NYSCI on Twitter and Instagram: @nysci, and on Facebook at: facebook.com/nysci.

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