





## 21<sup>st</sup> Century STEM is STEAM

Current STEM teaching (Science + Technology + Engineering + Math) supports students with necessary skills to prepare them for the career challenges and 20<sup>th</sup> century literacies designed to contribute scientists, mathematicians, engineers and technologists to the world's innovative economy. In the 21<sup>st</sup> century spirit of generous sharing and collaborative practices, design as an active practice learns from the world, engages the world and aims to improve the world. **STEAM by Design** introduces a multifaceted approach to 21<sup>st</sup> century education that transforms discreet subject introduction to trans disciplinary project based motivational learning with place based citizen engagement.

***“NEXT.cc hits the 21<sup>st</sup> Century learning sweet spot! It is brilliant scaffolding for design-based learning. NEXT.cc delivers content in context embedded in templates and tools. It is at the right level between abstract concept and concrete instantiation. It builds both subject matter mastery and meta-cognitive skills. It reifies domain knowledge transparently as generative engagement. Seamlessly, it inculcates habits of attentive observation, heuristic discovery and self-reflection. It speaks epistemological authority with a light, non-pedantic voice.***

It frames design broadly as best expressed by Herbert A. Simon, pioneer of computer science and artificial intelligence:

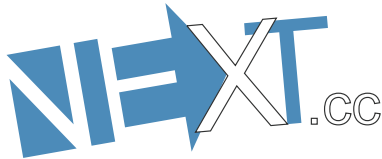
*“Everyone designs who devises courses of action aimed at changing existing situations into preferred ones.”*

**Beyond all that, NEXT.cc is intrinsically motivating - which is the fancy term for FUN!”**

Arnold Wasserman [www.arnoldwasserman.com](http://www.arnoldwasserman.com), [arnold@collectiveinvention.com](mailto:arnold@collectiveinvention.com), [arnold@ideafactory.com](mailto:arnold@ideafactory.com)

## STEAM by Design

**STEAM by DESIGN** connects art, architecture, engineering and construction as dynamic creative processes and drivers of 21<sup>st</sup> century innovation. Connecting young people to the very places that they live and learn through the mind of the architect and engineer, NEXT.cc looks at how culture, society, technology and the environment shape design responses. Accessing architecture through tools, languages, discovery and design, participants draw, paint, write, sketch, animate, model online inside and become architectural investigators outside. Journeys link with virtual field trips, global institutions, museum collections, and global art, design and architecture practices. Participants research relationships between objects, people and space and brainstorm ideas to solve problems. Environmentally assessing homes and schools, construction is seen as part of larger energy, water, air and material systems. Students analyze sites, develop programs, experience the iterative design process and design making. They propose streets, bridges, buildings, cities and landscapes. Empowered to collaborate, create and communicate, students become active participants, place makers and urban stewards of the built and natural environment.



**NEXT.cc is an eco web that develops ethical imagination and environmental stewardship.**

...it introduces what design is, what design does, and why design is important

...it offers activities across nine scales - nano, pattern, object, space, architecture, neighborhood, urban, region, world

**NEXT.cc reaches young people, their teachers and families with meaningful learning experiences that create positive influence on lives.**

...journeys connect the classroom with the world; integrating virtual field trips, museums, institutions, and contemporary practices. Its informal learning is being accessed in 87 countries and 37 states

...workshops have reached over 5,000 teachers and 25,000 students

### mission

**nurture** imagination

**inspire** wonder of the built and natural world

**promote** stewardship of the environment

**enable** eco literacy and digital fluency through place based design projects

**connect** classrooms in an eco-web community

### history

NEXT.cc is a collaborative effort by principals, teachers, architects, artists and college art, art education, design and architecture students (MIT, Harvard, NYIT, CCAC, Parsons, SAIC, UWM).

Founded as an educational non-profit in 2007, NEXT.cc researches and creates transdisciplinary journeys that engage local ideas with global practices. Participants move from the computer into the community and learn about themselves, their neighbors, and their friends as they engage history and culture of place and explore sustainable design possibilities. NEXT.cc delivers eco literacy and digital fluency changing STEM (Science, Technology, Engineering and Math) teaching to STEAM (Science, Technology, Environment, Engineering, Art and Math).

### awards

National Environmental Education Green STEM Innovator 2012  
Union of International Architects Architecture + Children Golden Cubes 2011  
Wisconsin Arts Board Creative Communities Grant 2011  
USGBC Excellence in Green Building Education Award 2009  
SAIC Presidential Urban Engagement Award 2009  
American Architectural Foundation Merit Award 2009  
National Endowment for the Arts Design Education Award 2008  
American Architectural Foundation Merit Award 2006



# about: NEXT.cc

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NEXT.cc introduces what design is, what design does, and why design is important. It offers activities across nine scales – nano, pattern, object, space, architecture, neighborhood, urban, region, and world.

NEXT.cc's journeys introduce activities online, in the classroom, in the community and globally. NEXT.cc journeys and activities are supported with links to virtual field trips, museum interactives, and contemporary architecture, art, science & design practices.

## how to: NEXT.cc

1. Go to [www.NEXT.cc](http://www.NEXT.cc)

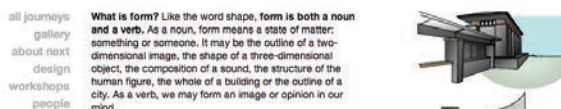


2. Select a journey



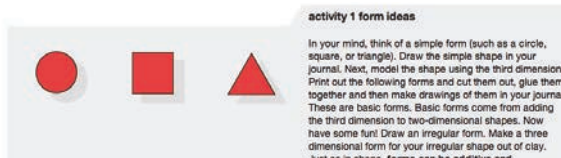
Choose from 200+ journeys. At the top of the page, you may also select to view journeys that relate to specific topics.

3. Introduction to Journey



To begin your journey, become familiar with background and terms associated with the journey.

5. Activities



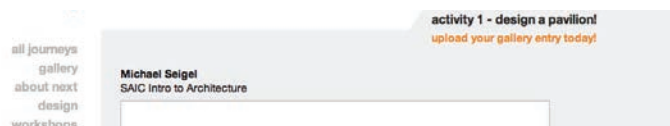
Observe, write, sketch, model, make, imagine, and create... in your community!

4. Explore



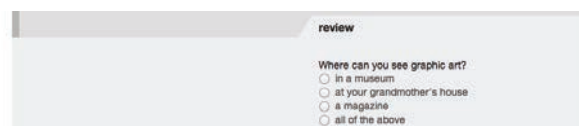
Check the Explore links to learn from contemporary art, science and design practices.

6. Submit to Gallery



After you complete the activities, submit your work to the Gallery!

7. Review



Review what you learned!

8. Relate and Repeat



See related journeys and continue exploring natural and built systems, objects, media and environments.

9. Show your teacher

Share with friends. Like us on Facebook. Watch our videos on YouTube.

10. Tell us if you're using it

<lkeane@next.cc>

# NEXT.cc

## Complete List of Journeys

*listed alphabetically*

Tools	Language	Discovery	Design	NEXT.cc Copyright 2015
2d Geometry	3d Geometry	21st Century Classroom	Aeronautics*	
Air	Adobe	7 Natural Wonders	Airplane Design*	
Alphabet	Animals*	Acoustics	Animation	
Collaboration	Area	Air Quality	Aquaponics	
Collage*	Artificial Light	Architectonics	Architecture	
Color	Art Nouveau	Architectre&Music	Architecture & Fashion	
Composition	Beams	Bauhaus	Bike Lanes	
Decoration*	Biomimicry	Bicycles	Bridge Design	
Design Thinking	Birds	Bio Fuel*	Business Card	
Detail Dreams	Books	Biomes	Bus Stop Design	
Diagramming	Categories	Bridges	Car Design*	
Film & Video* Font	Ceramics	Building as Bodies	Cartoons	
Food	Chairs	Building Types	Cereal Box	
Form	City*	Coral Reefs	Chair Design	
Frames*	Classical Architecture*	Design Process	Clocks*	
Imagination	Climate	De Stijl	Design Making	
Information*	Clouds	Digital Modeling	Eating Local	
Journal	Columns	Earth	Fashion Design	
Land	Design Research	Electricity	Furniture Design	
Line	Drawing Types	Evolution*	Game Design	
Listening	Energy	Farmers Markets*	Graphic Novel	
Maps	Ergonomics	Forests	Great Lakes	
Matter	Experience Design	Fractals	Green Cities	
Measure	Facade Elements	Germes	Green Home	
Media	Family Tree	Green Building	Green Roofs	
Mind Mapping	Figure Ground	Green Dollhouse*	House of the Future*	
Modeling Money	Fish	Green Materials	Industrial Design	
Nanotechnology	Folding	Green Schools	Information Architecture	
Natural Light, Numbers	Food Culture	Growing Food	Interiority	
*Organization	Glass	Iron*	Jewelry*	
Painting	Grass	Lakes*	Kites	
Paper	Grid	Landfills	Landscape	
Pattern*	Habitats*	Mass Transit	Light Design*	
Perspective	Housing Styles	Mobiles	Logo Design	
Photography	Insects	Modern Architecture	Magazines	
Placemaking	Interactivity	Oceans	Monile Meal	
Plants	Isometric	Origami	Murals*	
Play	Materials	Outdoor Classrooms	Playscapes	
Questions	Metrics	Paper Airplanes	Poster Design	
Rhythm	Music	Paper Engineering	Rain Gardens	
Scale	Nature Patterns	Pavilions	Rain Water Harvesting	
Senses	Neighborhood	Place Experience	Murals*	
Shading	Object Description	Plastic	Package Design*	
Shape	Optics	Prairie	Pop Ups	
Shelter	Place Exploration	Prairie Architecture	Poster Design	
Site Analysis	Pocket Parks	Public Space	Rain Gardens	
Sketching	Poems	Rain**	Rainwater Harvesting	
Soil	Precipitation	Recycling	Rebuild*	
Space*	Proportion	Rivers	River Walks*	
Speech	Rocks	Self Portrait	Robots*	
Symbols	Sculpture	Site Programming	Shoe Design	
Time	Sound	Sketchbook	Signs*	
Visual Notes	Story Telling*	Smart Grid	Skyscrapers	
Walking	Streets	Solar Energy	Soundscapes	
Water	Structure	Solar System	Space Planning*	
Waves	Symmetry	Sound Mapping	Stage Set Design	
Wayfinding	Systems Thinking	Stairs	Suburbia	
Weave	Temperature*	Textiles	Sunglasses	
Well Being Words	Tree Identification	Texture	Tessellations	
Word Webs	Trompe L'oeil	Topography	Tiny House**	
Writing	Vernacular	Truss	Tessellations	
	Walls	Vermiculture	Toy Design	
	Water Quality	Vertical Farming	Urban Agriculture	
	Watershed	Wall Sections	Urban Design	
	Weather	Water Conservation	Vegetable Gardens	
	Windows	Wind	Water Taxis	
		Wood	Wind Power	
			Work Stations ZOOMS	



## What people are saying about NEXT.cc

*I just wanted to let you know that after 2 or 3 years of being on your list of pilot teachers, I am finally using the site in my classroom. My kids LOVE it. They are 12-14 yrs. old and are finding so many great journeys to go on. We are using it as a way to teach independent projects in a more guided way before they leap off in designing their own journeys. I have never seen a group of 7th and 8th grade students so engaged for an hour working independently on their computers... wow.*

Victoria Rydberg, RIVER CROSSING 7-8, Teacher of the Year 2009, WI DPI Environmental Education Consultant

*I wanted to let you know I think your web site is amazing and such a wonderful resource.*

Katie Netti, K-8 Visual Arts Teacher, Chicago, IL

*Design thinking has taught us and our students new skills that traditional schools do not focus on. As a teacher I am more focused on the design process (are they brainstorming? are they coming up with solutions? how will you defend their answers? what are they going to build/mold/design?) as compared to many teachers who are focused on content deliverables (do they know which battles were key in the Civil War? Do they understand photosynthesis?). Students themselves are able to think for themselves and think OUTSIDE THE BOX! We started our school with many students thinking that display/trifold boards and key notes were "projects," but now they are coming up with much more innovative ideas such as writing a diary as if a girl from the holocaust, designing an all green home -everything from blue prints, to samples of materials, to an actual model, an i phone application, a story about different animals for preschoolers, etc. They are realizing that they can use their talents and embed them into their education.*

Ashley Hiser, LaCrosse Design Institute, LaCrosse, WI

*I looked over your work on NEXT and I offer my congratulations on a great project.*

Bruce MAU, DESIGN WITHOUT BOUNDARIES, MASSIVE CHANGE

*NEXT.cc is a brilliant concept encouraging our students to be active in their communities as architects and educators. It introduces environmental issues and inspires design and education as ethical practices.*

Sean S. Miller Director of Education Earth Day Network

*Your presentation was great and the NEXT.cc web site is fabulous. What a great gift to the rest of us.*

Richard D. O'Connor Ph.D., Executive Director, Oregon Building Congress

*Thanks very much for an awesome workshop! You inspired me to collaborate to start a new architecture curriculum for this year including the whole school of nearly 1600 4th and 5th graders.*

Craig Hammett

*I find NEXT.cc to be a powerful, intuitive and disarmingly engaging learning platform for students. We have deployed NEXT.cc at SUPAR, and it has been a great vehicle for supporting student directed exploration and discovery. As a project based high school, we value learning opportunities that engage our students in ways that require them to take leadership for their learning, NEXT.cc supports our pedagogical objectives very well. The modular nature of the NEXT.cc platform allows for the scaffolding of knowledge building, thus rewarding students by promoting their increased level of content competency while encouraging them by giving them opportunities to demonstrate their increased capacity to apply what they know. That said, NEXT.cc is a robust learning platform that could be applied in various education settings where creativity, global thinking and student-center learning is valued.*

Dr. Kirk E. Harris, Faculty, UWM School of Architecture and Urban Planning  
& Founder, School for Urban Planning and Architecture

*I just opened the NEXT.cc book, it looks fabulous.*

Cathy Mott, Curator of Education, Muskegon Art Museum