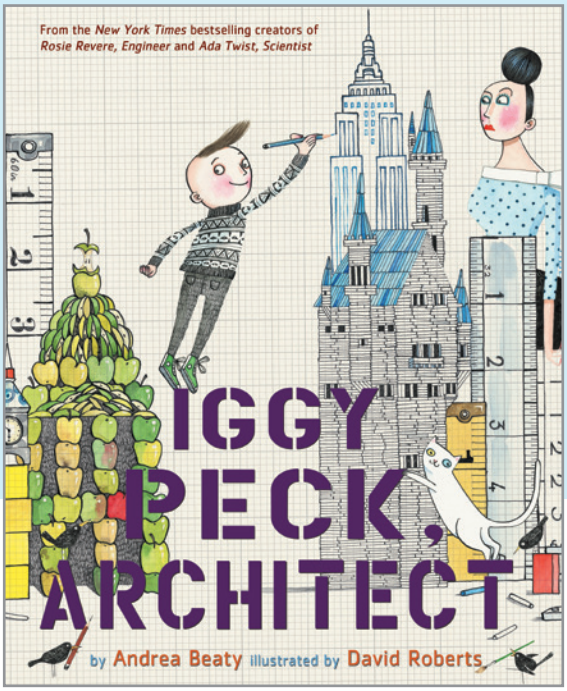
IGGY PECK, ARCHITECT

by Andrea Beaty illustrated by David Roberts



ABOUT THE BOOK

Iggy is an imaginative boy with a passion for building amazing structures out of everyday objects. ***Iggy Peck, Architect***, from the powerhouse team Andrea Beaty and David Roberts, is a celebration of STEM, perseverance, and passion. Like his classmates, inventor Rosie and scientist Ada, Iggy is a child who learns with his hands, mind, and heart turned on. At age two Iggy builds a tower out of diapers and then quickly moves on to peach chapels and pancake arches, incorporating the resources of his world into his love of architecture.

There is nothing that can stop Iggy from building—that is, except his teacher Miss Lila Greer. An unfortunate incident inside the elevator of a skyscraper has left Miss Greer with an unreasonable hatred for "building-lovers." But when Iggy's classmates are left stranded by a broken trestle on a school outing, it is up to Iggy to bring them all together, pooling their individual talents and resources into one amazing solution.

Iggy Peck, Architect highlights the joy of following your passion, as well as the resourceful nature of children. Iggy's clever repurposing of everyday objects, materials, and foods exemplifies the innovative mind frame of the maker movement that's exploding in education. Iggy's imagination and ingenuity are celebrated as valuable skills for success to improve not only the world of one little boy, but his larger community as well.

About the Author and Illustrator

Andrea Beaty and David Roberts are the creators of ***Ada Twist, Scientist***; ***Rosie Revere, Engineer***; and ***Happy Birthday, Madame Chapeau***, among other award-winning children's books. Out-of-this-world ***Rosie Revere, Engineer*** is currently orbiting Earth aboard the International Space Station as part of the Story Time from Space program, storytimefromspace.com. Beaty lives just outside of Chicago. Visit her online at andreabeaty.com and on Twitter: @AndreaBeaty. Roberts lives in London.

VOCABULARY

These vocabulary words can be found throughout the book (in the order they are listed). Use these words as a starting point for a vocabulary study with ***Iggy Peck, Architect***. Research shows that reading and discussing new words within the context of reading is one of the most effective ways to learn vocabulary.

Sphinx	***Arch***	***Lecture***	***Wreck***	***Burbling***
Temples	***Gothic***	***Fright***	***Haze***	***Hatching***
Gleam	***Romanesque***	***Troupe***	***Trestle***	***Suspension***

FUN ACROSS THE CURRICULUM

ACTIVITIES: Use these activities to extend student learning with *Iggy Peck, Architect*

BUILD ON YOUR IMAGINATION

Architects decide the size, shape, and materials of a structure. They select sturdy materials that will withstand weather, weight and time. Discuss and determine whether each building material Iggy used was sturdy. Have students explain why, and then identify alternate building materials around your home that would be sturdier for each structure listed in the table below.

STRUCTURE	IGGY'S MATERIALS	YES OR NO? WHY?	A BETTER BUILDING MATERIAL?
tower	diapers	_____	_____
Sphinx	dirt clods (mud)	_____	_____
church or chapel	peaches or apples	_____	_____
arch	pancakes	_____	_____
castle	chalk	_____	_____

NAILED IT!

Architects use special tools. Have students match each tool in the first column to what it's used for in the second column.

TOOL	USE
1. tape measure	**a.** a plan for a structure
2. drafting table	**b.** a device that is shaped like a half circle and that is used for drawing and measuring angles
3. slide ruler	**c.** a writing tool with graphite and an eraser
4. compass	**d.** a tool that consists of a pen or pencil attached to a pointed stick and that is used for drawing circles
5. protractor	**e.** a kind of multipurpose desk that can be used for any kind of drawing, writing, or impromptu sketching on a large sheet of paper
6. pencil	**f.** Similar in name and appearance to a standard ruler, but used to calculate
7. blueprint	**g.** a long, thin piece of plastic, cloth, or metal that is marked with units of length (such as inches or centimeters) and that is used for measuring things

Discuss and design a new tool for an architect or improve upon an existing tool. What is its purpose? What is it made from? How would an architect use it?

UNDER CONSTRUCTION

At the end of the book, Iggy points out some of the most famous historical structures located around the world. Have students work in small groups to research one of these structures:

A. The Parthenon (c. 450–424 B.C.)

B. Neuschwanstein castle (built 1868-86)

C. Coliseum (c. 72–82 A.D.)

D. Leaning Tower of Pisa (built 1173-1372)

E. St. Paul's Cathedral (c. 1675–1710)

F. Pyramid of Giza (c. 2550–2470 B.C.)

G. Stonehenge (c. 2000 B.C.)

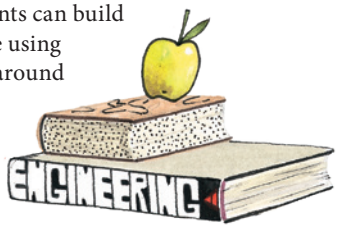
H. Empire State Building (built 1931)

I. Sydney Opera House (built 1957–1973)

Students will then present their findings in a collaborative Google Slide presentation to the entire class. Students should make sure to answer these questions in their presentations:

- When was the structure built?
- Where is it located?
- Who was the architect?
- What materials were used?
- What style was used?
- Identify three ways in which this structure improved life or changed the world.

For bonus credit, students can build a model of their structure using recycled elements found around the home or classroom



DESIGN & SKETCH LIKE AN ARCHITECT

As a class, define each of the following terms. Then, ask students to sketch an example of each. Encourage students to be innovative with their designs.

- **Trestle**
- **Footbridge**
- **Cable**
- **Brace**
- **Tower**
- **Arch**

RIVETING SHAPES

Students explore the properties of 3-D shapes in a hands-on building project with 3-D blocks, i.e., spheres, cubes, triangular pyramids, rectangular pyramids. The objective is for students to determine which shapes are stackable and which are not and then to assemble them to build an architectural structure, e.g., tower, arc, or bridge. An alternative to this activity would be a "Jenga"-style game in which students take turns adding blocks to an existing structure without toppling it.

HI-TECH BUILDER: Technology Tools for Budding Architects

With a free online Tinkercad account (tinkercad.com), students can drag and drop shapes to design their own towers, arches, and bridges.

Students sketch a design for a tower, arch, or bridge and then doodle it with a 3Doodler Start (3doodlerstart.com). Begin with basic shapes and weld them together with warm plastic to create 3-D structures.

HAMMER TIME: Creative Construction Challenges

Students use recycled materials and/or craft supplies to build a model of a structure that exists or does not exist in the world. What is its purpose? How is it used? Who uses it? Here's a list of building materials, some of which may already be found right inside your classroom: popsicle sticks, matchsticks, playing cards, pipe cleaners, straws, pencils, KEVA planks, *cardboard, Strawbees, Rigamajig, LEGOS, K'NEX, Magna-Tiles. Have students reflect on which materials were best for construction and why.

*Cardboard Challenge: A yearly event in which students build with cardboard and share around the world. Learn more at cardboardchallenge.com

DISCUSSION QUESTIONS: Use these questions as whole-class discussions, reading check-ins, or writing prompts with *Iggy Peck, Architect*

Iggy builds chapels from peaches and apples. Estimate how many apples it would take to build a chapel as tall as your school. How could you build an apple tower without the apples falling over?

Iggy's teacher is not a "building-lover." How would you convince Miss Lila Greer that it is important for students to spend time building?

Identify reasons why it would be good to work in a group when designing a building? When constructing a building?

What is an important lesson that Miss Greer learns from Iggy and the class?

Write a poem about a famous architect that describes the architect and his/her structure.

COMMON CORE STANDARDS

Here are a few examples of English Language Arts Common Core Anchor Standards that can be met by extending ***Iggy Peck Architect***, with the above discussion questions/activities.

CCSS.ELA-LITERACY.CCRA.R.1
Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

CCSS.ELA-LITERACY.CCRA.R.2
Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

CCSS.ELA-LITERACY.CCRA.R.3
Analyze how and why individuals, events, or ideas develop and interact over the course of a text.

CCSS.ELA-LITERACY.CCRA.R.4
Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

CCSS.ELA-LITERACY.CCRA.R.5
Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.

CCSS.ELA-LITERACY.CCRA.W.7
Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

CCSS.ELA-LITERACY.CCRA.W.9
Draw evidence from literary or informational texts to support analysis, reflection, and research.

NEXT GENERATION SCIENCE STANDARDS

Here are Next Generation Science Standards Topics from grade Kindergarten–Middle School that can be met by extending ***Iggy Peck, Architect*** with the above discussion questions/activities.

K-2-ETS1-1 Engineering Design
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.

K-2-ETS1-2 Engineering Design
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.

K-2-ETS1-3 Engineering Design
Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

3-5-ETS1-1 Engineering Design
Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2 Engineering Design
Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

3-5-ETS1-3 Engineering Design
Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

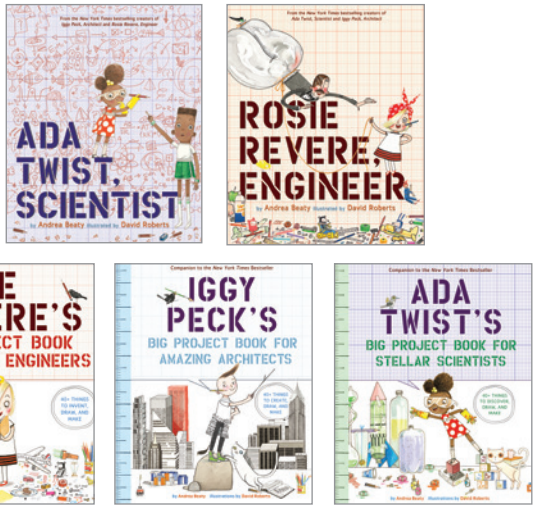
MS-ETS1-1 Engineering Design
Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

MS-ETS1-2 Engineering Design
Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

MS-ETS1-3 Engineering Design
Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

MS-ETS1-4 Engineering Design
Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

ALSO AVAILABLE



This educator's guide was written by Julia Dweck,
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