

CONSTRUCTING GENIUS –



FROM BOXES TO BUILDINGS

LESSON OVERVIEW

Grade Levels: K-5

In the book, *Iggy Peck, Architect* by Andrea Beaty, Iggy discovers his talent and constructs something amazing. In this lesson participants will: learn about architecture, design their own blueprint drawings, and work together to build a collaborative city sculpture or community.

STANDARDS

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|--------------------|---|
| NGSS K-2-ETS1-2 | Use observations to describe patterns of survival needs for plants and animals (including humans). 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 3-5-ETS1-1 | Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. |
| NGSS 3-5-ETS1-2 | 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. |
| CCSS RI.2.1 | Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. |
| CCSS W.2.8 | Recall information from experiences or gather information from provided sources to answer a question. |
| CCSS RI.5.1 | Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. |
| CCSS RI.5.7 | Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. |
| CCSS RI.5.9 | Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. |
| CCSS W.5.9 | Draw evidence from literary or informational texts to support analysis, reflection, and research. |

OBJECTIVES

- Students will discuss how Iggy Peck analyzed a problem and then designed a solution using his knowledge of architecture.
- Students will learn about building types and their purposes within a community.
- Students will learn about blueprint drawings and will design a blueprint for a building they will create.
- Students will create a building using available materials and will display their buildings together in a collaborative sculpture or community format.

MATERIALS

- Sample blueprints (can be found online).
- Cardboard boxes of varying shapes and sizes such as cereal, shipping, or granola bar boxes.
- Masking tape, tape, glue or glue sticks
- Optional: Newsprint paper end rolls (unused remainder of newsprint on a roll that can be purchased at very low cost or donated by newspaper companies)- This can be used to wrap the boxes for decorating
- Colorful scraps of paper for windows, doors, and other features
- Other miscellaneous materials (i.e. sequins, pipe cleaners, pompoms, popsicle sticks or other material)
- Camera to take pics and send them to us

PROCEDURES

STEP 1: Read the book *Iggy Peck, Architect* by Andrea Beaty and then ask the following questions and have discussions.

- What was Iggy Peck's special interest?
- What does an architect do?
- Why did Iggy's teacher Miss Lila have a hard time with Iggy's love for buildings?
- What made Miss Lila change her mind about the importance of architecture?
- Iggy's passion was architecture. What is your passion and what might you need to study to help you live your dream?

STEP 2: Discuss different types of buildings and their purposes. Identify the types of buildings that are in your community and their main purpose.

STEP 3: Examine sample blueprints and discuss how they are used in building projects.

STEP 4: Have the students design blueprints for a building they would love to create. For those who are unsure of ideas, list what other students are already designing and discuss what other buildings would be needed in a community that are not yet being designed.

- STEP 5:** Have the students describe their blueprint drawings and how they could construct their building from the materials available.
- STEP 6:** Have the students build their creations.
- STEP 7:** Have the students display their buildings in either a stacked collaborative city sculpture or a neighborhood/community format.
- STEP 8:** Have the participants present their buildings, explain the purpose of the structure and its features, and how it benefits the community. Older students can cite information that helped them in the creation of their buildings.



RUBRIC

| | Target (3) | Meets (2) | Partially Meets (1) | Does Not Meet (0) |
|---|---|--|---|---|
| BUILDING DESIGN | Does a great job showing an understanding of design for a purpose. | Does an okay job with showing an understanding of designing for a purpose. | Tries but has great difficulty showing an understanding of the design process. | Does not show an understanding of design. |
| USE OF MATERIALS | Inventively chooses materials that are interesting and support the project's purpose. | Appropriately chooses materials to support the project's purpose. | Chooses materials but some work against the purpose of the project. | Does not choose appropriate materials. |
| COLLABORATION | Works well with others and discusses ideas in a fair, respectful, encouraging way and is considerate of the feelings of others. | Works okay with others and discusses ideas in a fair, respectful way, but may not have been encouraging. Considers the feelings of others. | Works with others, but did not contribute a fair share of work OR was discouraging and did not consider the feelings of everyone. | Did not work well with others and/or discusses ideas in an unfair, disrespectful way. |
| REQUIREMENTS | Meets all of the requirements for the project. | Meets most of the requirements for the project. | Meets some of the requirements for the project. | Does not meet the requirements for the project. |
| DEMONSTRATION OF KNOWLEDGE OF CONTENT IN DISCUSSIONS AND ACTIVITIES | Does a great job showing an understanding of the content covered in class. | Does an okay job with showing an understanding of the content covered in class. | Tries but has a difficult time showing an understanding of the content covered in class. | Does not show an understanding of the content covered in class. |
| Total | | | | /15 |