

THE BOX

Project Overview

What is the genius of a cardboard box? A cardboard box often contains something of value until it's opened and devalued. Then the box is often discarded. However, when people move, they often have to be creative in the new house until the furniture arrives and is unpacked, so they use boxes for tables and chairs. Boxes can be quite strong and reused often if taken care of. The beauty of a box is the limitless nature of it. We want students to be creative and see past the obvious to other possibilities. "Think outside the box."

Students will...

Immerse themselves into the world of engineering.



Tinker with cardboard and other recycled materials.

Find and solve problems in literature using design thinking (i.e., Novel Engineering).

Work in small groups to design and create a cardboard arcade by following the design thinking process.

Write personal narratives about a time they played a game.

Write fictional narratives about when the arcade comes to life. (e.g., Toy Story).

Write How-To-Play instructions.

Work with experts in the field to receive and provide critique.

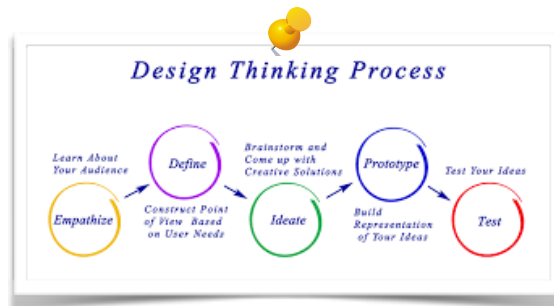
This project will jumpstart the new school year by getting the students engaged in a fun, hands-on project that includes creative play and major design principles. It was inspired by Caine's Arcade. Students will engage in important work that builds a strong sense of community, utilizes the design thinking process to critique and solve problems, uses literature to deepen understandings, communicates ideas through speaking and writing, and integrates math, science, literacy and engineering concepts and skills.



Why is play important?

What makes a strong community?

How can we, as engineers, design and build something to strengthen and support our community?





2018 Important Dates

Field Work: Fleet Science Center

Thursday, Sept 6

Back To School Night

Tuesday, Sept 11

Field Work: Chuck E. Cheese

Week of Sept 24

Global Cardboard Challenge

Saturday, Oct 6

Student-Led Conferences

Oct 9-12

Exhibition

Thursday, Dec 6

Learning Goals/ Standards

Reading Standards for Literature

RL.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

RL.2.2 Recount stories and determine their central message, lesson or moral.

RL.2.3 Describe how characters in a story respond to major events or challenges.

RL.2.5 Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action.

Writing Standards

W.2.3 Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure.

W.2.4 With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose.

W.2.5 With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.

Math Standards

2.3 Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools.

2.4 Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Measurement and Data

Measure and estimate lengths in standard units.

2.MD.1 Measure the length of an object by selecting and using appropriate tools.

2.MD.4 Measure to determine how much longer one object is than another.

2.MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories.

Social Emotional Skills

1. Empathy.
2. Appreciating how one's behavior is affecting others.
3. Resolving disagreements without conflict.
4. Taking another's perspective.
5. Honesty.

New Generation Science Standards

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.

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.

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.