NOTES TO TEACHER

This **Bird Feeder STEM Challenge** is perfect for this season! It's a fun, creative, and engaging way to get your students designing and building during this time of year.

Challenge your students to design and build a bird feeder that can be refilled easily and can dispense bird seeds on its own. You can use plastic bottles, plastic plates, cardboard, wooden clothespins, and string to engineer this bird feeder. You can modify the task too and include any other materials you would like students to use. You can do this individually or in groups (I prefer groups of 3-4). Give students the materials mentioned, as well as some tape. For older students, they can use a glue gun **if allowed in your school** (for a more durable bird feeder). You can show the students the images of the possible finished product I included or make the task open ended and let them come up with their own designs.

Let students present and test their work. Check if the bird feeders meet the requirements by filling them with bird food. Have students give feedback to each other as well. Give them a chance to make improvements. Place the bird feeders in a spot in the school where they can attract birds. Have students share their reflections afterwards. Students can use the included **vocabulary**, and **planning and reflection sheets** to guide their learning. Please see **Ideas for STE(A)M Links** for discussion and extension activities that you can do.

Have fun! ☺

IDEAS FOR STE(A)M LINKS

SCIENCE: Discuss the life cycle of a bird (embryo > hatching > nesting > young bird > adult bird).

TECHNOLOGY: Use your iPad/tablet/computer to look at different designs of bird feeders for birds in your area.

ENGINEERING: Build another bird feeder using different materials, such as a milk carton, craft sticks, and plastic spoons. Which bird feeder meets the requirements better?

ART: Paint your bird feeder. Use primary colors.

MATHEMATICS: Visit your bird feeder at a specific time every day. Create a graph showing the different types and number of birds that come and visit your bird feeder. Collect data for a week. Present your graph to the rest of the class.

NEXT GENERATION SCIENCE STANDARDS

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.

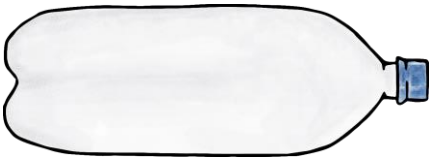
K-2-ETS1-2
Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

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.

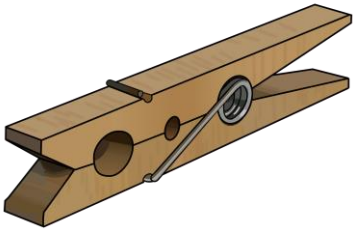
3-5-ETS1-2
Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem.

3-5-ETS1-3
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.

SUGGESTED MATERIALS

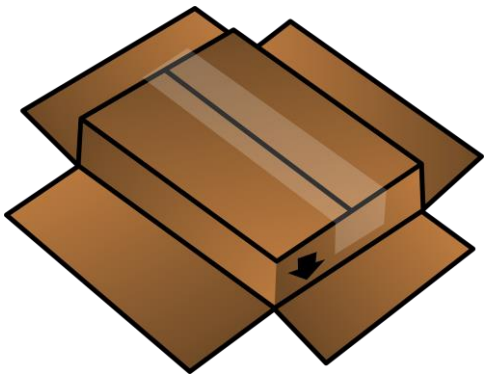


plastic bottle



wooden clothespins

plastic plate



cardboard

string

POSSIBLE FINISHED PRODUCT

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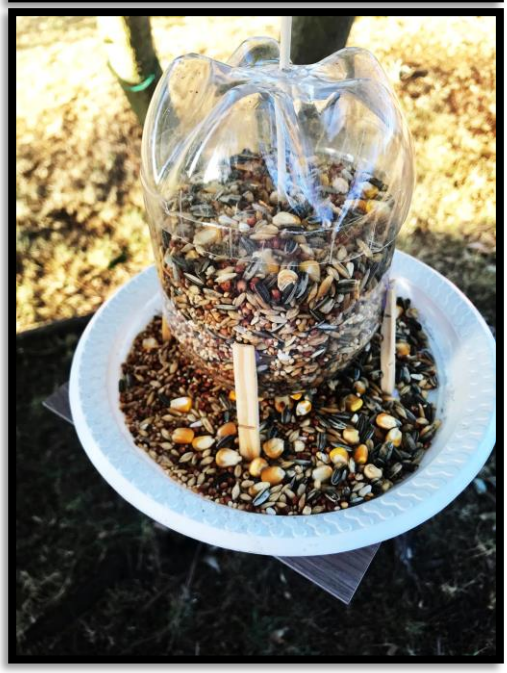

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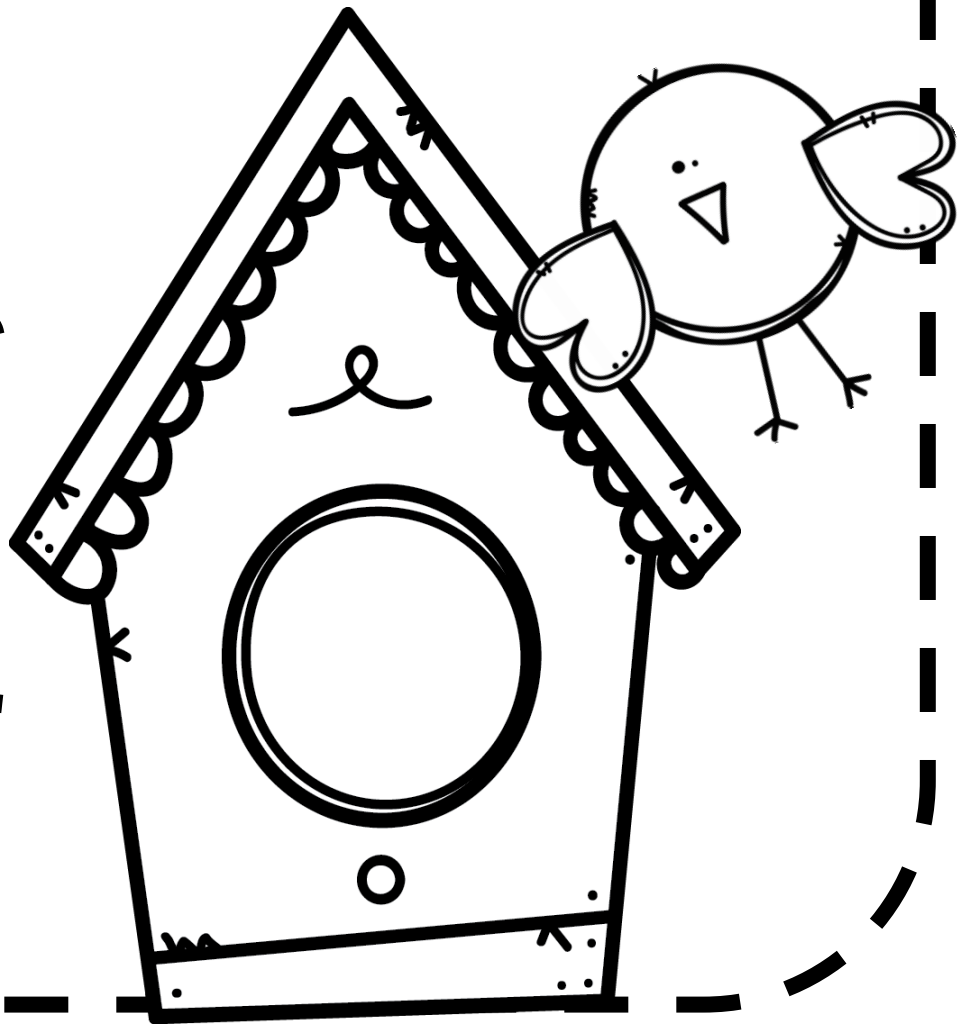

BIRD FEEDER STEM CHALLENGE

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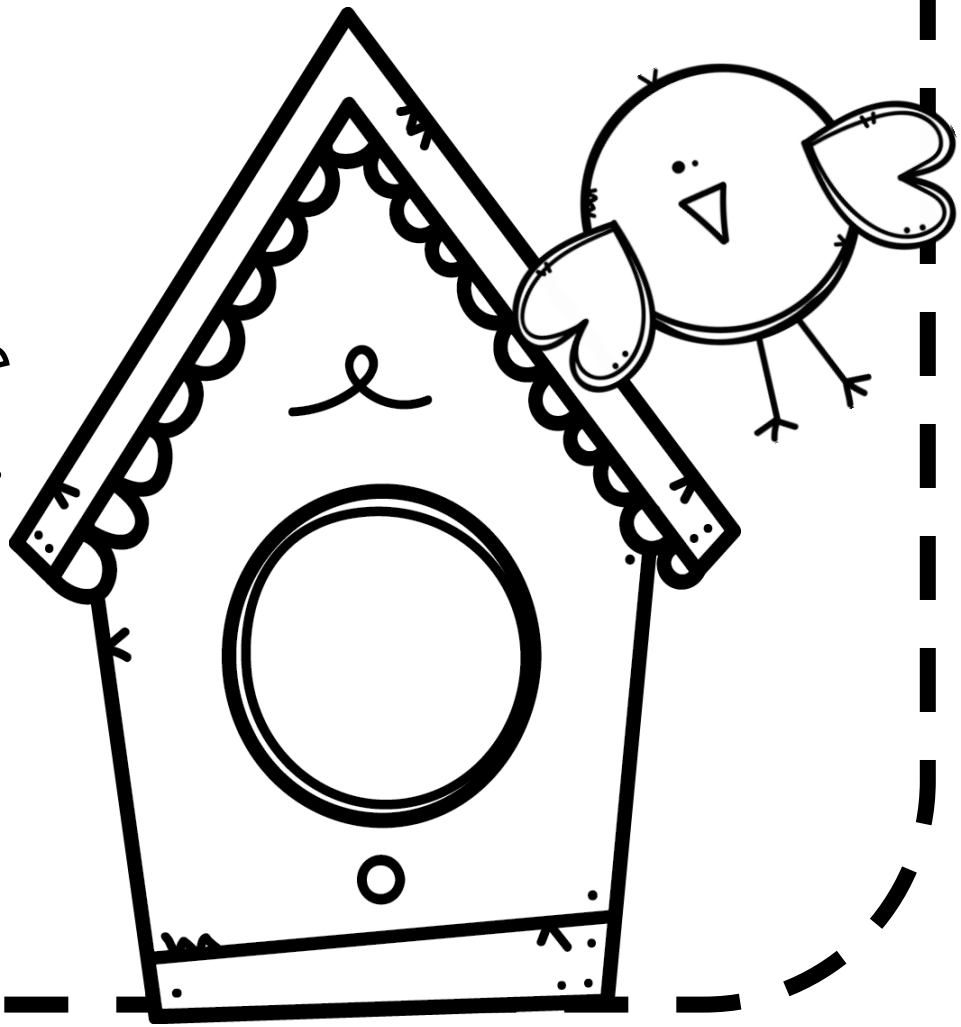
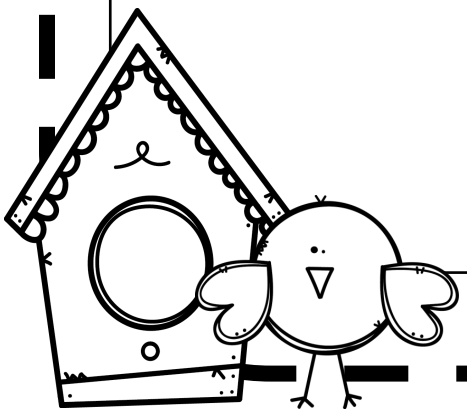


BIRD FEEDER STEM CHALLENGE

Design and build a Bird Feeder.

MATERIALS	WHAT WORKS?
DESIGN	WHAT DOESN'T?
	WHAT DO YOU THINK ABOUT THE DESIGN AND CHANGES YOU MADE?



BIRD FEEDER STEM VOCABULARY

Focus: _____

Word	Definition