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NOTES TO TEACHER

This Nest 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.

Start the lesson by asking students what they already know about bird nests, whether they have seen one before, where it was located, what it looked like, and what materials it was made of. Do a nature walk on which students search for and observe nests, as well as collect materials from nature for their own nests.

Afterwards, challenge your students to design and build a nest that can hold at least three eggs using only styrofoam and materials found in nature, such as sticks, twigs, and leaves.

You can also modify the task 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 Styrofoam or the materials you prefer. 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 nests meet the requirements. You can use real eggs, plastic eggs, or chocolate eggs. Give the students a chance to make improvements after testing. 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 nest building habits of birds. You can also watch videos of certain birds as they build their nests, such as a [hummingbird](#), a [weaver bird](#), and [bald eagles](#).

TECHNOLOGY: Use your iPad/tablet/computer to research or read about the types of birds that are typically found in your local area and find out why those species are found there.

ENGINEERING: Build another nest using only the materials you found from nature. Does the styrofoam make it easier to build a nest?

ART: Take pictures of different nests in your local area. Print these images and do a mini-exhibit in your classroom.

MATHEMATICS: Create a bar graph, line graph, or picture graph showing the type and amount of materials from nature your class used for the bird nests. Analyze which materials were most and least used.

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



POSSIBLE FINISHED PRODUCT



POSSIBLE FINISHED PRODUCT



POSSIBLE FINISHED PRODUCT



NEST STEM CHALLENGE

Design and build a nest that can hold at least three eggs using only styrofoam and materials found in nature, such as sticks, twigs, and leaves.



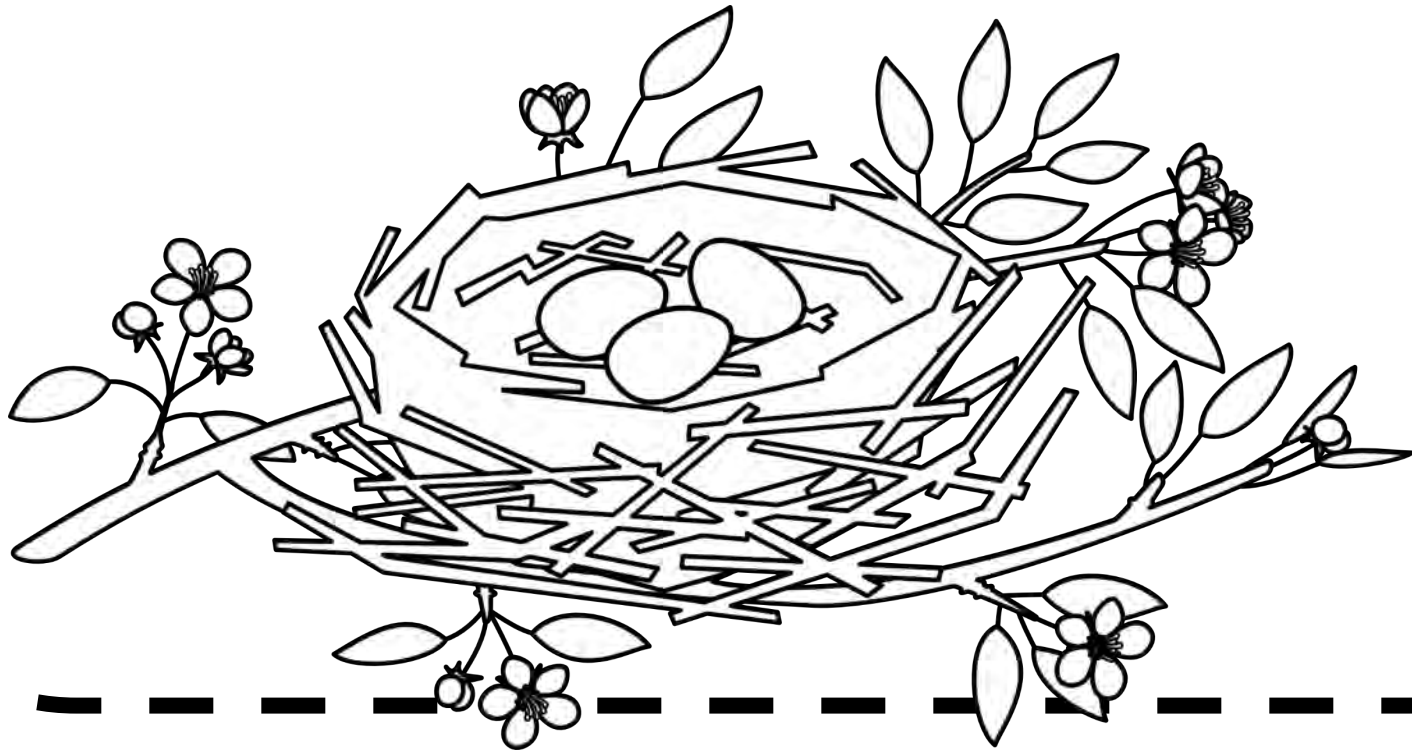
NEST STEM CHALLENGE

Design and build a nest that can hold at least three eggs using only the materials your teacher will provide.



NEST STEM CHALLENGE

Design and build a nest that can hold at least three eggs using only styrofoam and materials found in nature, such as sticks, twigs, and leaves.



NEST STEM CHALLENGE

Design and build a nest that can hold at least three eggs using only the materials your teacher will provide.



NEST STEM CHALLENGE

Design and build a nest.

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



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DESIGN	WHAT DOESN'T?
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NEST STEM VOCABULARY

Focus: _____

Word	Definition



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Focus: _____

Word	Definition



IDEAS FOR STE(A)M LINKS

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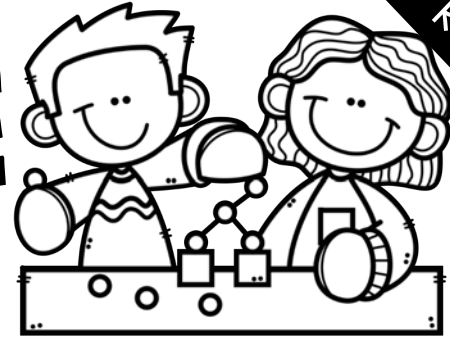
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Name: _____

Self-Assessment
Rubric

STEM CHALLENGE



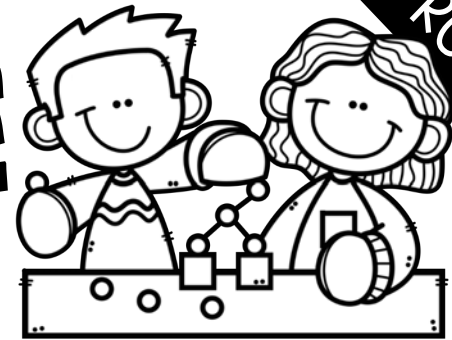
Task: _____

	WOW!	YES!	AHH	UH-OH
I followed all the instructions.				
I used my best effort and persevered throughout the challenge.				
I completed the planning and reflection sheet.				
I cooperated with my group mates and contributed fairly.				

Name: _____

Assessment
Rubric

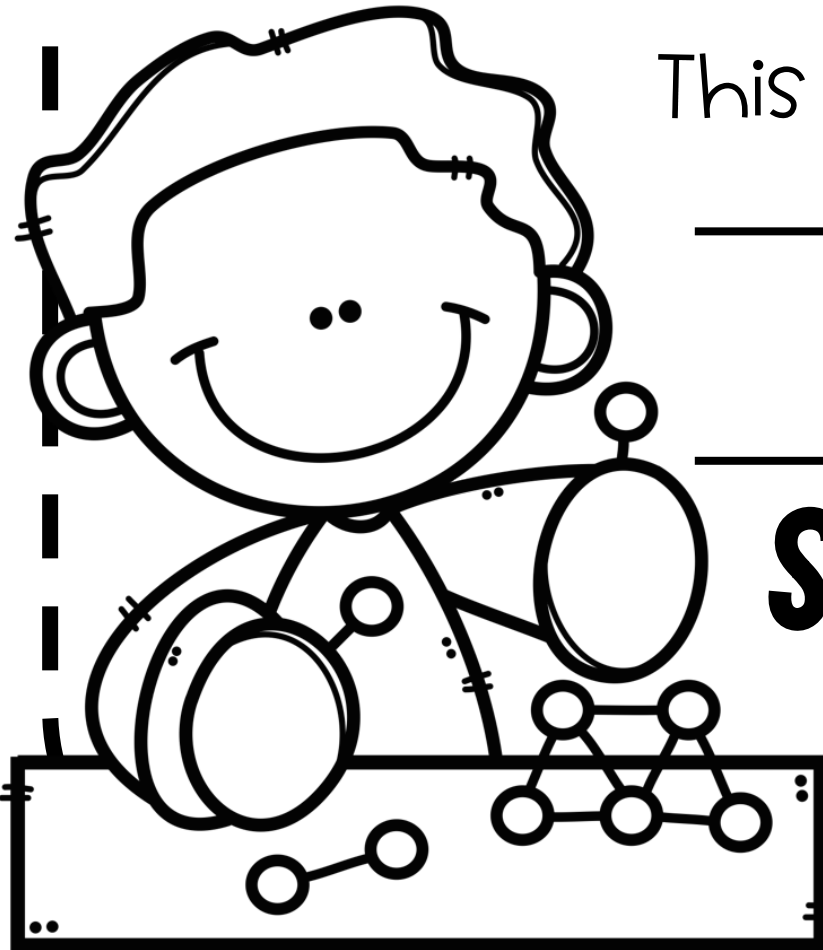
STEM CHALLENGE



Task: _____

	WOW!	YES!	AHH	UH-OH
I followed all the instructions.	4	3	2	1
I used my best effort and persevered throughout the challenge.	4	3	2	1
I completed the planning and reflection sheet.	4	3	2	1
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STUDENT: Shade in the face for each section for the score that you feel you have earned.	TOTAL POINTS:	COMMENTS:		
TEACHER: Circle the number in each section for the score that the student earned.	TOTAL POINTS:	COMMENTS:		

STAR BUILDER AWARD



This certificate is awarded to _____

for completing the _____

STEM CHALLENGE

FROM: _____

DATE: _____

STAR BUILDER AWARD



This certificate is awarded to _____

for completing the _____

STEM CHALLENGE

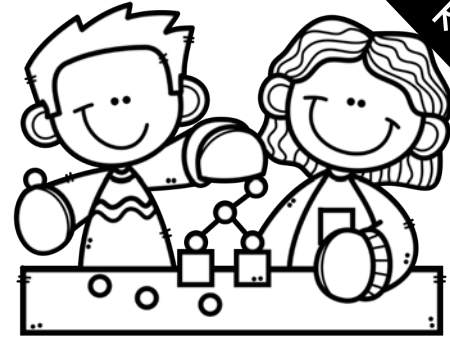
FROM: _____

DATE: _____

Name: _____

Self-Assessment
Rubric

STEAM CHALLENGE



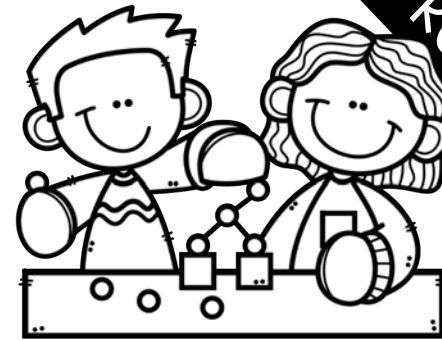
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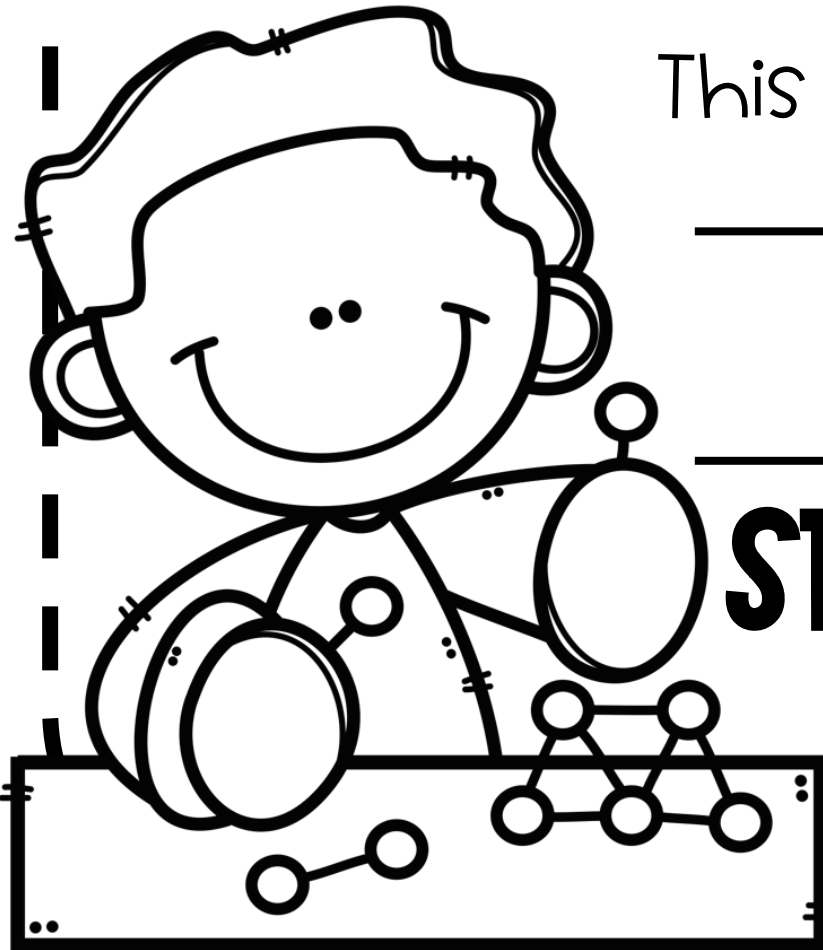
STEAM CHALLENGE



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WHAT YOU NEED TO GET STARTED:

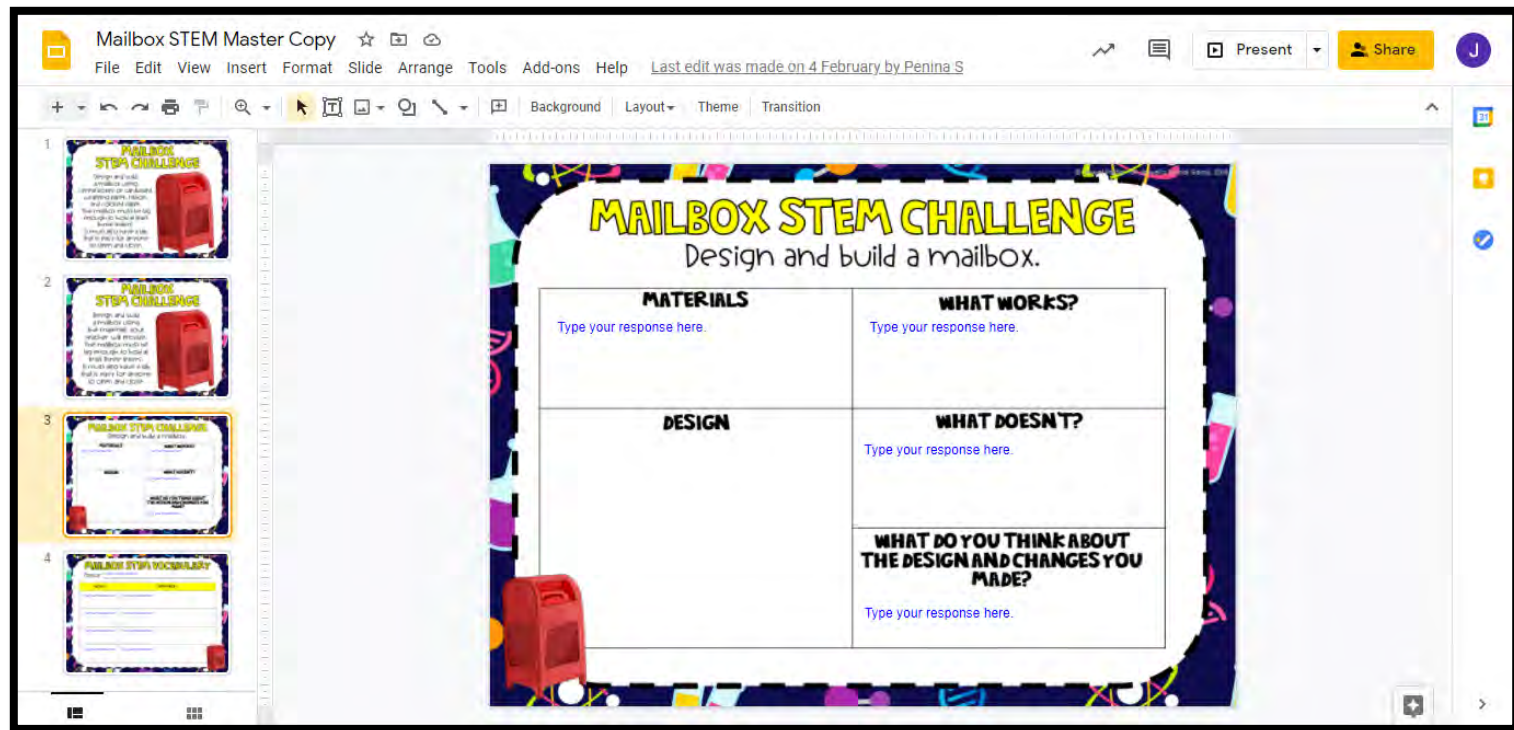
1. Download Link for this Google Slide Resource:

[SPRING BIRD'S NEST STEM CHALLENGE](#)

2. Access to the Internet and a Google Account.
(FREE)
3. Open the file on your own Google Drive and engage while in the edit mode.
4. Printer access to print out the finished product.
(OPTIONAL)

BEGIN YOUR GOOGLE SLIDES PROJECT:

If your students haven't created a free Google account, they will need to do that before beginning the project. Each student will need their own account if they will be working on their own digital project using Google Slides. Before they begin editing/filling in the digital project, it is **VERY** important to first save a copy of the file on their own Google Drive, and then edit the copy. **You do not want them to edit the original file.**



The slides are 8.5"x11". You can delete slides that you deem unnecessary. The slides have a text box for students to highlight over and begin writing their text (See photo of an example from the resource line). Your students can add their own text boxes and insert images, too.