

Student Name _____ Homeroom Teacher _____

NTI Day 12

Special Area -STEM Lab 3-5

You may access this lesson electronically from the following webpages:

Special Area - <http://cgesspecialarea.weebly.com/>

STEM Lab - <http://cgesstem.weebly.com/>

NGSS: 3-5-ETS1-2	Learning Target: I am designing a roof made from materials and laid in a pattern that will protect a house from rain.
Challenge:	<ul style="list-style-type: none">Design a roofing system for a house that can stop water from getting in the house.
Criteria/Constraints:	<ul style="list-style-type: none">Your roof should have 2 layers. The layers should be made of different materials. The material for the top layer of the roof must be cut in 2" X 2" squares and placed on the roof in a pattern. The roof should keep water from getting into the house.
Choose one way to show your design:	<ul style="list-style-type: none">Roof design may be a drawing of your idea added to the house drawing you made yesterdayColor the drawing - use two different colors for each layer of the roof, show the pattern you will lay the top layer of squaresLabel the materials you would use if you were going to make the roof with recycled materials from home - fabric scraps, plastic wrap, cereal box cardboard, foil, leaves, sticks, straws, paper towels, grass, newspaper, shells, plastic lids, paper clips, tape, etc. You do not have to choose the same materials you tested yesterday. <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none">Roof design may be a model of your idea made with recycled materials you have at home - fabric scraps, plastic wrap, cereal box cardboard, foil, leaves, sticks, straws, paper towels, grass, newspaper, shells, plastic lids, paper clips, tape, etc. You do not have to choose the same materials you tested yesterday.Add the roof to model house you made yesterdayTest the roof; spray or sprinkle $\frac{1}{2}$ cup of water on the houseObserve - Did the water run off the roof or go through the roof? Lift up the house and see if water is in or under the house.
Reflection:	<ul style="list-style-type: none">If you made a drawing, tell why you think the materials you chose and pattern you laid them in will keep water out of the houseIf you made a model, tell the results from testing. Explain how the materials you chose and pattern you laid them caused the results. If water got in your house what would you change to improve your design?You may record your answer on the back of this paper or on the google form on the STEM Lab webpage. Pictures of your drawing or model may be uploaded on the google form also.