# Non-screen activities you can do at home

Pobble

25 ideas!

What can you do when there's no school and you're stuck at home? Here are 25 fun ideas to choose from.

1 **How many different words can you make from the letters in this sentence, below?** Grab a pencil and paper and write a list!

"Learning from home is fun"

2 **Thank a community hero.** Think of someone that helps you in some way and write a short letter to thank them.

Thanks!

3 **Get building!** You could build a Lego model, a tower of playing cards or something else!

4 **Can you create your own secret code?** You could use letters, numbers, pictures or something else! Can you get someone else to try and crack it?

5 **Start a nature diary.** Look out of the window each day and keep note of what you see. Birds, flowers, changes in the weather, what else?

6 **Hold a photo session.** Use a camera or a mobile phone to take some snaps. What will you photograph? Your pets or toys perhaps?

7 **Build a reading den.** Find somewhere cosy, snuggle up and read your favourite book!

8 **Use an old sock to create a puppet.** Can you put on a puppet show for someone?

9 **Make a list of all the electrical items in each room of your home.** Can you come up with any ideas to use less electricity?

10 **Design and make a homemade board game** and play it with your family.

11 **Do something kind for someone.** Can you pay them a compliment, make them something or help them with a task?

12 **Can you create a story bag?** Find a bag and collect items to go in it that relate to a well known story. If you can't find an item, you could draw a picture to include.

13 **List making!** Write a list of things that make you happy, things you're grateful for or things you are good at.

14 **Design and make an obstacle course at home or in the garden.** How fast can you complete it?

15 **Can you invent something new?** Perhaps a gadget or something to help people? Draw a picture or write a description.

16 **Keep moving!** Make up a dance routine to your favourite song.

17 **Write a play script.** Can you act it out to other people?

18 **Read out loud to someone.** Remember to read with expression.

19 **Write a song or rap about your favourite subject.**

20 **Get sketching!** Find a photograph or picture of a person, place or object and sketch it.

21 **Junk modelling!** Collect and recycle materials such as yoghurt pots, toilet rolls and boxes and see what you can create with them.

22 **Draw a map of your local area** and highlight interesting landmarks.

23 **Write a postcard to your teacher.** Can you tell them what you like most about their class?

24 **Draw a view.** Look out of your window and draw what you see.

25 **Get reading!** What would you most like to learn about? Can you find out more about it in books? Can you find a new hobby?

# LEGO® CHALLENGE CALENDAR

## 31 Days of Fun Ideas for Any Month!

| | | | | | | |
|---|---|---|---|---|---|---|
| Day 1<br>Build Your Name or Initials | Day 2<br>Build a Person with Moving Legs and Arms | Day 3<br>Build a Catapult | Day 4<br>Build a Robot | Day 5<br>Build a House that Opens | Day 6<br>Build a Boat that Floats | Day 7<br>Build a 100 Brick Tower |
| Day 8<br>Build a Box with a Lid | Day 9<br>Build a Small World Scene | Day 10<br>Write a Comic Strip for a Minifigure | Day 11<br>Build a Model of Your Room | Day 12<br>Build a Simple Machine | Day 13<br>Build a Bridge that Can Hold Something Heavy | Day 14<br>Build a Favorite Character |
| Day 15<br>Make a Mosaic Using Flat Pieces on Baseplate | Day 16<br>Draw a Design Make it with LEGO Bricks | Day 17<br>Build Something to go with A Favorite Book | Day 18<br>Build a Swimming Pool for a Minifigure | Day 19<br>Build with Eyes Closed for 5 Minutes | Day 20<br>Build a Pyramid | Day 21<br>Build a Marble Run |
| Day 22<br>Draw a Play Mat And A LEGO | Day 23<br>Learn Paper Football and Build a Goal | Day 24<br>Have a Minifigure Building Race | Day 25<br>Build a Marble Maze | Day 26<br>Try to Sink a Minifigure | Day 27<br>Build a Zip Line | Day 28<br>Make Your Own LEGO Skittles Game |
| Day 29<br>Build a Parachute for a Minifigure | Day 30<br>Build a Car Attach a Marker and Draw | Day 31<br>Ask for a Bin of Soapy Water Wash LEGO! | | | | |

LITTLE BINS FOR LITTLE HANDS


BUILD A ROBOT
BUILD WITH 1 COLOR
BUILD SOMETHING FUNNY
BUILD A PARK
BUILD A CAR
BUILD A MAZE
BUILD A RAINBOW
BUILD A CASTLE
BUILD 50 BRICK TOWER
BUILD AN ANIMAL
BUILD A BRIDGE
BUILD A PLANE
BUILD A GAME
BUILD A PYRAMID
BUILD A HOUSE
BUILD YOUR NAME

# cheap & easy crafts

# day 1 play recipes

## materials:

- Flour
- Oil
- Cornstarch
- Salt
- Food Coloring
- Cream of Tartar (optional)
- Water
- Mixing bowls
- Tray
- Measuring spoons

## activity ideas:

**cloud dough pretend play:** Set up an ice cream shop. Use ice cream cones and scoops with the cloud dough.

**play dough color mixing:** Make a playdough color wheel. Mix up a batch of playdough in each of the primary colors. Combine different ratios of each to create secondary colors.

**make oobleck dance:** If you have a speaker available, lay it on its side and place plastic wrap over the speaker cone. Place oobleck on the plastic wrap. Connect your speaker to a smart phone and play a low frequency test tone on YouTube. The oobleck should "dance."

## cloud dough recipe

**basic ratio:** 8 to 1: Flour to Oil

**ingredients:**

- **Flour**
- **Oil** baby oil or canola oil

**instructions:**

- Add 2 cups flour to a bowl.
- Add ¼ cup of oil. Stir to combine.
- Knead the dough with your hands to fully mix.

**note:** To color cloud dough you must use oil based candy food coloring or crushed chalk.

**variation:** Sprinkle in cocoa powder to add color and scent!

## play dough recipe

**ingredients:**

- **1 Cup Water**
- **1 Cup Flour**
- **1/2 Cup Salt**
- **1 Tbsp oil**
- **1 Tbsp Cream of Tartar** recommended for longevity
- **Food coloring**

**instructions:**

- Add all ingredients to a large saucepan and stir to combine.
- Heat saucepan over medium heat stirring constantly.
- After about 3–5 minutes the playdough should start to form a solid mass.
- Remove the pan from heat, place the dough into a large bowl and let cool.

## oobleck recipe

**basic ratio:**
2 to 1: cornstarch to water

**ingredients:**

- **2 Cups Cornstarch**
- **1 Cup Water**
- **Food coloring**

**instructions:**

- Pour 2 cups cornstarch into a bowl.
- Add 1 cup of water and stir to combine.
- If adding food coloring to your oobleck do it at the mixing stage.

When mixed you should be able to press it into a ball in your hand; when you release the pressure the ball should "melt" back into a liquid.

# cheap & easy crafts

# day 2 reactions

## materials:

- Lemons
- Baking Soda
- Food Coloring
- Vinegar
- Milk
- Dish soap
- Q-tips
- Shallow plate
- Jar
- Tray
- Craft Stick
- Cup & Spoons

## extension ideas:

**lemon volcanoes:** Turn this into a science experiment and test different citrus fruits to see which produces the best reaction.

**magic milk:** Gently dip watercolor paper in the milk to capture the reaction and produce marbled paper.

**wizard's brew:** Make it change colors! Add a tablespoon of vinegar mixed with one color of food coloring every so often. Make sure to dump the colored vinegar into the center of the brew.

## lemon volcanoes

**ingredients:**

- Lemons
- Baking Soda
- Food Coloring
- Craft Stick
- Dish soap
- Tray & Spoons

**instructions:**

- Slice the bottom off the lemon and slice out the core.
- Use a craft stick to mush the center of the lemon.
- Place a few drops of food coloring in the lemon.
- Add a good squeeze of dish soap to the lemon.
- Add a spoonful of baking soda to the lemon.
- Take the craft stick and stir the lemon juice and baking soda to create a reaction.

## magic milk

**ingredients:**

- Almond Milk or Cow's Milk
- Dish soap
- Q-tips
- Food coloring
- Shallow plate or wide bowls

**instructions:**

- Fill a plate or bowl with a shallow layer of milk.
- Add a few drops of food coloring.
- Dip the end of a q-tip in dish soap, then dip the q-tip into the milk. The color will burst.
- Repeat until the colors begin to mix and become brown. Empty your plate/ bowl and try again.

## wizard's brew

**ingredients:**

- Baking Soda
- Food coloring
- Dish soap
- Vinegar
- Jar & Tray

**instructions:**

- Fill the jar halfway with vinegar.
- Add a few drops of food coloring.
- Squeeze in some dish soap and stir.
- Add in a heaping teaspoon of baking soda, stir again, and watch the foaming begin.

To keep the reaction going continue adding baking soda and vinegar when it starts to slow.

cheap & easy crafts

# day 3 exploring color

## materials:

- White Glue
- Food Coloring
- Cornstarch
- Corn Syrup
- Pudding Mix
- Toothpicks
- Plastic lids
- Hole Punch
- String
- Paper towels
- Pipettes
- Jars
- Cup & Spoons

## project tips:

**cosmic suncatchers:** As the colors settle they will continue to expand and create a dyed psychedelic effect. The suncatcher will need a few days to fully dry. You will know it's ready when the edges start to peel off the lid.

**homemade paint:** Pudding paint is a great finger paint. Syrup paint remains semi-sticky even when fully dry.

**tie dye towels:** If you don't have pipettes, simply dip the folded towels in shallow bowls of food coloring mixed with water.

## cosmic suncatchers

**materials:**

- White Glue
- Food Coloring
- Toothpicks
- Plastic lids
- Hole Punch
- String

**instructions:**

- Pour glue into plastic lid to cover bottom of lid.
- Add drops of food coloring to the glue.
- Swirl the colors around in the glue using a toothpick. Stop swirling before the colors get too combined.
- Let dry for one to three days.
- Peel the suncatcher off the lid, punch a hole through the top, add a string, and hang in a sunny window.

## corn syrup paint

- Pour corn syrup into a small dish.
- Add a couple drops of food coloring.
- Mix to combine.

## cornstarch paint

- Mix 2 parts cornstarch and 3 parts vinegar in a shallow bowl.
- Add food coloring to make the hue you desire.

## pudding paint

- Make pudding according to package directions.
- Separate the pudding into separate containers.
- Add a couple drops of food coloring to each container.

## tie dye towels

**materials:**

- **Paper towels** *Use super absorbent towels*
- Food Coloring
- Pipettes
- Water
- Jars

**instructions:**

- Fold a paper towel as small as you can.
- Drop food coloring on one side of the folded towel with pipettes.
- Turn over the folded towel and drop food coloring on the other side.
- Open up the paper towel to reveal the design.

cheap & easy crafts

# day 4 that's salty

## materials:

- Salt
- Food coloring
- Pipettes
- Recycled plastic lids
- Glue
- Epsom Salt
- Glass Jars
- Bowl
- Measuring cup
- Spoon
- Pebble or sand
- Ice Blocks
- Squeeze Bottles
- Salt shakers
- Large Tub

## project tips:

**salty rainbows:**
This is a process art project that focuses on the experience of making rather than the outcome of the final project.

**epsom salt crystals:**
Crystals need something to grow on and an impurity in the water like grain of sand will help ensure they have a place to grow.

**ice sculptures:** The icy salt water will be VERY COLD. Monitor the project so small children don't leave their hands in the water and get frostbite!

## salty rainbows

**materials:**
- Salt
- Food Coloring in primary colors
- Water
- Pipettes
- Recycled Plastic Lids
- Glue

**instructions:**
- For each color, mix 1 Tbsp of water with 5-6 drops of food coloring.
- Sprinkle a thick layer of salt in your plastic lids and shake to spread evenly.
- Use your eye droppers to drip paint into the salt. Watch secondary colors appear when the primary colors mix.

## epsom salt crystals

**materials:**
- Epsom Salt
- Clean Glass jars
- Food Coloring
- Hot Tap Water
- Measuring Cup
- Spoon
- Pebble or Sand

**instructions:**
- Add 1 cup each of Epsom salt and very hot tap water to your jar.
- Stir for 1-2 minutes to dissolve the salt.
- Drop in a pebble or a few grains of sand.
- Place the jar in the back of your refrigerator overnight.
- The next day pour out the extra liquid to reveal crystals.

## ice sculptures

**materials:**
- Ice Blocks
- Squeeze Bottles
- Warm water
- Salt
- Food coloring
- Salt shakers
- Large Tub

**instructions:**
- Place the blocks of ice in a water table or large tray.
- Fill the squeeze bottles with warm water, drop in some food coloring if desired.
- Hand your child a squeeze bottle and/or salt shaker and tell them to try melting the ice blocks!

cheap & easy crafts

# day 5 science magic

## materials:

- Jars
- Tray
- Corn Syrup
- Oil
- Food Coloring
- Eggs
- Distilled White Vinegar
- Paper
- Washable Markers
- 6" Bamboo Skewer
- Paper Towels
- Cups
- Water

## project tips:

**layered liquids:** Leave a little room at the top of your bottle/jar. Add in a tab of Alka Seltzer. Watch it create bubbles and movement to create a "lava lamp."

**rubber eggs:** The egg will be bouncy and rubbery but it is still raw on the inside. Press it and bounce to test just how rubbery it is but beware, it will still break! Make sure you break at least one to see what the egg looks like inside!

**bleeding blossoms:** If you have a spray bottle, spray the flowers with a mist of water and watch the blossoms open!

## layered liquids

**materials:**

- Jars
- Tray
- Corn Syrup
- Water
- Food Coloring
- Oil

**instructions:**

- Place the jar in the middle of a tray.
- Pour 1/4 cup or so of corn syrup into the jar
- Add water into your jar along with add some drops of food coloring.
- Add about a 1/2 cup of oil to the jar.

## rubber eggs

**materials:**

- Eggs
- Clear cup or jar
- Distilled White Vinegar
- Food Coloring
- Bowl of water

**instructions:**

- Place a raw egg in a clear cup.
- Pour enough vinegar in the cup to submerge the egg.
- Add in a few drops of food coloring and stir gently.
- After about 3-5 days remove the egg from the vinegar and place it in a bowl of water. Gently rub away the shell to reveal the membrane that lies just below it.
- Bounce your egg carefully!

## bleeding blossoms

**materials:**

- Template
- Washable Markers
- 6" Bamboo Skewer
- Paper Towel
- Cup
- Water

**instructions:**

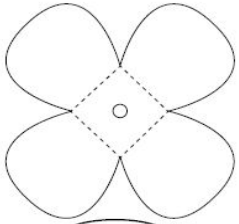
- Color and cut the blossoms.
- Wrap a paper towel around the skewer.
- Thread 2-3 blossoms on the skewer. The lowest blossom should touch the paper towel.
- Fold the blossoms to "close" the flower.
- Place the stem in a cup with 1" of water at the bottom.
- Leave the flower overnight.

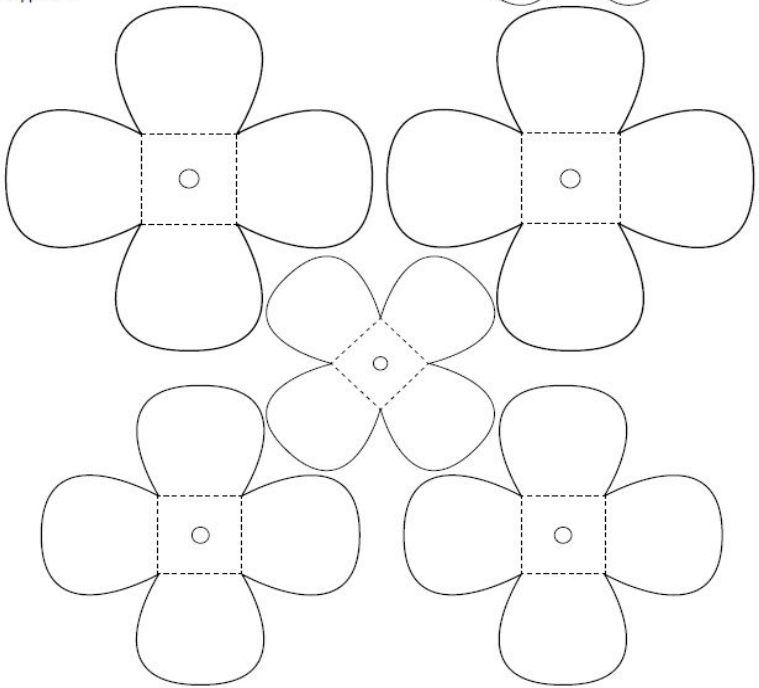
# Bleeding Blossoms Template



## Instructions

1. Color the blossoms with water soluble markers.
2. Cut out the blossoms.
3. Wrap a paper towel tightly around a 6" long skewer.
4. Thread 2-3 blossoms on the skewer with the lowest blossom touching the paper towel.
5. Place a wood bead at the end to hold everything in place.
6. Fold the blossoms at the dotted lines to "close" the flower.
7. Place the stem in a glass with about 1" of water at the bottom.
8. Gently spray the flower with water and watch the blossom open!
9. Leave the flower in the jar for several hours and watch what happens....





# 77 Simple STEM Activities for Families

- ✓ Take a walk in the backyard
- ☐ Go to a museum
- ☐ Buy something at a garage sale & take it apart
- ☐ Fix a broken toy (instead of throwing it away)
- ☐ Take a calculator to the grocery store & find the best prices
- ☐ Use a big cardboard box to create a rocketship
- ☐ Play a card game that involves numbers
- ☐ Play Connect 4
- ☐ Play Checkers
- ☐ Play Chess
- ☐ Get an old microscope & look at stuff
- ☐ Plant some seeds & record their growth
- ☐ Pop the hood & look at a car's engine
- ☐ Create your own board game
- ☐ Make the best LEGO car/building/ship ever
- ☐ Take pictures of nature & turn them into postcards
- ☐ Make slime or goo or oobleck
- ☐ Bake a cake or cookies from scratch
- ☐ Learn to recognize trees from their bark
- ☐ Learn to code games using Scratch
- ☐ Figure out how much paint is needed to paint a room
- ☐ Make a blueprint of your house
- ☐ Watch Mythbusters
- ☐ Make your own "Mythbusters"
- ☐ Create a stop-motion video using LEGOS or clay
- ☐ Read a biography of a scientist
- ☐ Watch an episode of How Its Made
- ☐ Use a magnifying glass to search the ground for bugs
- ☐ Use a magnifying glass to start a fire
- ☐ Read the news & look for numbers
- ☐ Read the news & look for science
- ☐ Interview a Senior Citizen about their experiences with STEM
- ☐ Learn to use a compass (either kind)
- ☐ Make art using leaves
- ☐ Fix a bike
- ☐ Ask a friend who owns a business for a tour
- ☐ Do a science simulation on www.phet.colorado.edu
- ☐ Create something using www.instructables.com
- ☐ Search YouTube for "King of Random" and try one of his projects
- ☐ Watch Big Hero 6
- ☐ Watch Swiss Family Robinson
- ☐ Put together a puzzle
- ☐ Make your own puzzle
- ☐ Invent something
- ☐ Make a "How-To" video
- ☐ Have a paper airplane competition
- ☐ Play Yahtzee
- ☐ Visit an antique shop
- ☐ Build a survival shelter in the woods
- ☐ Go camping
- ☐ Watch a sporting event and keep statistics
- ☐ Plant a garden
- ☐ Weed a garden & identify the weeds
- ☐ Go rock hunting
- ☐ Design & build mini boats to float down a river
- ☐ Visit a farm
- ☐ Start a business
- ☐ Build a solar oven & cook something
- ☐ Make a time-lapse video of something in nature
- ☐ Make a green screen video
- ☐ Play Monopoly
- ☐ Look at the stars
- ☐ Try origami
- ☐ Draw a picture using only circles, triangles, & rectangles
- ☐ Take pictures of all the shapes in your house
- ☐ Build something using popsicle sticks or pipe cleaners
- ☐ Count all the money in your change jar
- ☐ Learn to type
- ☐ Look for numbers while driving in the car
- ☐ Make a raft from empty water bottles & jugs
- ☐ Build something using pulleys
- ☐ Build something using gears
- ☐ Use a lever to lift something heavy
- ☐ Build an hourglass
- ☐ Weave something
- ☐ See who can cut out the most creative snowflake
- ☐ Build a Rube Goldberg Machine

Chris Woods @dailySTEM

# Earth Day STEM Challenge Supply List

- Acrylic paint
- Aluminum foil
- Baking soda
- Baggies
- Beads
- Cardboard
- Clothes pins
- Coffee filters
- Coins
- Cookie cutters
- Cornstarch
- Cotton balls
- Cotton swabs
- Craft paper
- Craft sticks
- Dryer hose
- Duct tape
- Easter grass
- Faux plants
- Feathers
- Felt
- Flat marbles
- Food coloring
- Funnel
- Gears
- Glitter (gold)
- Glitter glue
- Glow stars
- Glue
- Golf tees
- Hammer
- Hinges
- Leaves
- LEGO® bricks
- Lollipop sticks
- Magnets
- Marbles
- Measuring cups
- Nails
- Needle and thread
- Paint
- Paper
- Paper cups
- Paper clips
- Peeps
- Pencil
- Pipe cleaners
- Plastic containers
- Plastic cups
- Plastic pipes
- Plastic spoons
- Plastic wrap
- Pom-poms
- Raffia
- Ribbon
- Rubber Bands
- Seeds
- Scissors
- Shells
- Shredded paper
- Skewers
- Soil
- Sponges
- Springs
- Stapler
- Straws
- String
- Styrofoam balls
- Sugar cubes
- Tape
- Tape measure
- Tea lights
- Tin can
- Toilet paper rolls
- Toothpicks
- Twine
- Twist ties
- Washi Tape
- Water
- Whirly gig
- Wire
- Wooden planks
- Yarn
- Zip ties





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Please see the next slide for project ideas.

# Design & Build a Trash Grabber

Trash is everywhere, and it's not being picked up! Design and build a trash grabber to make picking up trash easier for everyone!

**Possible Supplies:**
Wooden planks, LEGO bricks, K'nex, toothpicks, balloons, skewers, glue, twist ties, zip ties, cardboard, twine, craft paper, foil, rubber bands, cotton swabs, fabric, paper rolls, craft sticks, dryer hose, plastic pipes, duct tape

# Design & Build a Birdhouse

The birds are hungry and waiting for food! Design and build a birdhouse out of recycled items only?
Bonus: Think of a clever way to make it squirrel proof.

**Possible Supplies:**
Wooden planks, LEGO bricks, K'nex, toothpicks, skewers, glue, twist ties, zip ties, stapler, cardboard, twine, nails, hammer, craft paper, rubber bands, cotton swabs, fabric, paper rolls, craft sticks, dryer hose, plastic pipes, duct tape

# Design a Wind Powered Vehicle

Find new ways for a car to move! Design and build a vehicle that is powered by the wind!

**Possible Supplies:**
straws, skewers, wood blocks, glue, aluminum foil, Washi tape, duct tape, toothpicks, rubber bands, twist ties, zip ties, plastic wrap, rubber bands, whirly gig, craft paper, tape. cardboard



# Design & Build a Recycling Bin

Not enough people recycle! Design and build a recycling bin that will encourage people to recycle more.

**Possible Supplies:**
Containers, cardboard, craft paper, springs, hinges, LEGO bricks, K'Nex, gears, pipes, duct tape, screws, screwdriver, foil, wooden planks

# Design & Build a Shopping Bag

No more plastic shopping bags allowed! Design and build a better shopping bag!

**Possible Supplies:**
Craft paper, cardboard, fabric, needle & thread, craft sticks, foil, yarn, balloons, rubber bands, raffia, ribbons, twine

# Design & Build a Mini Greenhouse

You need to grow plants but it's too cold outside! Design and build a mini greenhouse. Test it by planting a seed and see what happens!

**Possible Supplies:**
skewers, wood blocks, duct tape, glue, toothpicks, rubber bands, twist ties, zip ties, plastic wrap, rubber bands, craft paper, plastic cups, plastic containers, tape, cardboard, plastic baggies, soil, seeds,


Project ideas
on next slide...

## DESIGN & BUILD SOMETHING WIND-POWERED

**Possible Supplies:**
toothpicks, skewers, glue, twist ties, zip ties, gears, washers, cardboard, craft paper, foil, rubber bands, cotton swabs, paper rolls, craft sticks

## DESIGN & BUILD A BIRDHOUSE

**Possible Supplies:**
wood slats, twigs, glass marbles, glue, nails, hammer, skewers, twist ties, rubber bands, flowers, foil, Washi tape, duct tape,

## DESIGN & BUILD A NEST

**Possible Supplies:**
raffia, ribbon, twist ties, zip ties, twigs, toothpicks, cotton, feathers, pinecones, fabric, string, twine, leaves, grass

## DESIGN & BUILD A WHEELBARROW

**Possible Supplies:**
Wood slats, toothpicks, skewers, washers, foil, duct tape, gears, cardboard, craft paper, twist ties, zip ties, rubber bands, craft sticks

## DESIGN & BUILD A STRUCTURE TO KEEP OUT THE RAIN

**Possible Supplies:**
straws, skewers, wood blocks, aluminum foil, washi tape, duct tape, medical cloves, balloons, plastic wrap, glue, toothpicks, rubber bands, twist ties, zip ties

## DESIGN & BUILD A SHOVEL FOR SCOOPING DIRT INTO YOUR WHEELBARROW

**Possible Supplies:**
straws, skewers, wood blocks, aluminum foil, washi tape, duct tape, plastic wrap, glue, toothpicks, rubber bands, twist ties, zip ties, scissors



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# Egg Drop

You need to deliver an egg from your balcony to your friend on the ground. Construct a protective container that will keep your egg from breaking when it is dropped.

## Materials:

* Eggs (1-2 per group)
* Suggestions for container materials: egg cartons, Styrofoam bowls/cups, cardstock/construction paper, tissue paper, cotton balls, bubble wrap, plastic Easter basket "grass," Kleenex, etc.

# peep Nest

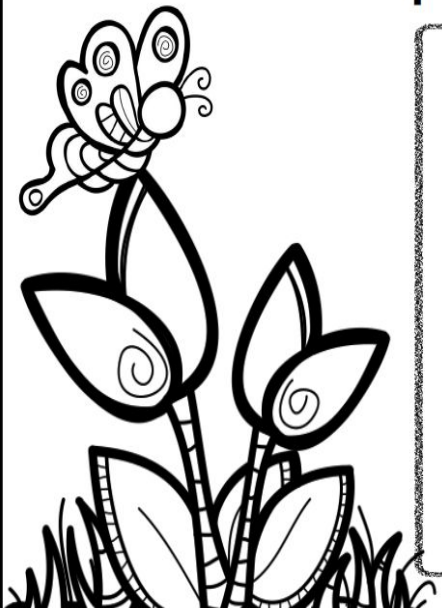
Your peep needs to be kept safe from predators on the ground. Construct a nest that will hold a peep. The nest must be at least 10 cubes high and placed over the open end of the cup.

## Materials:

* Sticks of 10 attached linking cubes
* Marshmallow Easter "peeps"
* For small nest: Dixie cups, toothpicks
* For large nest: medium-sized cups, pipe cleaners cut in half

# pollen collector

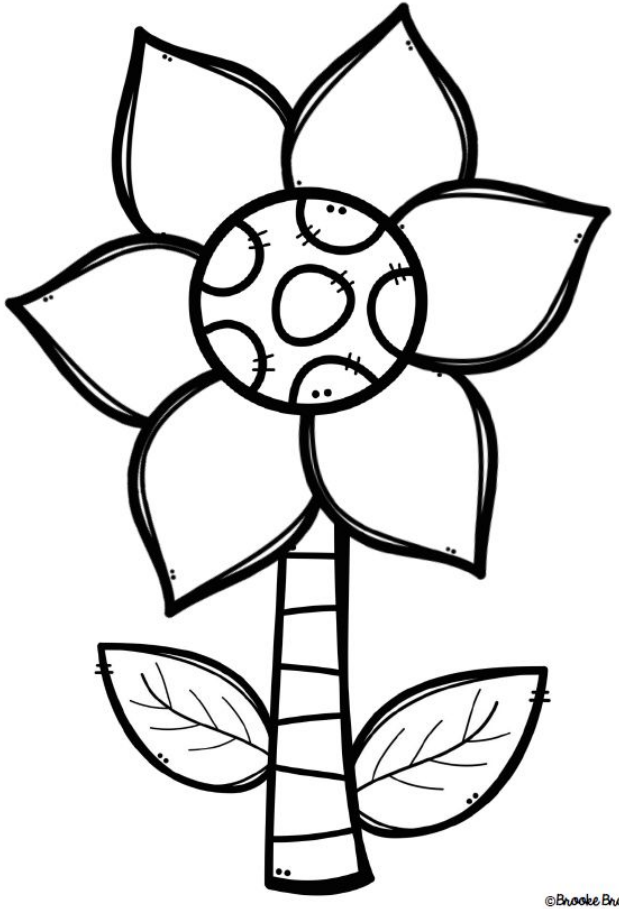
You need to pollinate your flowers. Construct a pollinator that will transfer the most pollen to the flower.



## Materials:

- Plastic spoons
- Large pom pom balls
- Cotton balls
- Rubber bands
- Colored drink mix such as Koolaid or lemonade
- Copies of flower template

pollen collector



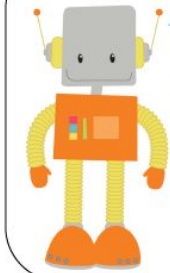

See the next slide for project ideas.

# Design & Build a Spacecraft

Design and build a spacecraft with a command module, service module, and lunar module. Research some examples of the three types. Make sure to give each one a name!

**Possible Supplies:**
Cardboard, plastic wrap, plastic cups, old knobs, nuts & bolts, foil, acrylic paint, paintbrushes, casters, astronaut action figure, timers,

# Design & Build a Robot



Design and build a robot to go out and explore the moon as well as gather samples. Think about what this robot will need to hold samples and move over uneven terrain. How will you control the robot?

**Possible Supplies:**
Cardboard, plastic wrap, plastic cups, old knobs, nuts & bolts, foil, acrylic paint, paintbrushes, casters, astronaut action figure
Dryer tubing, wire, knobs

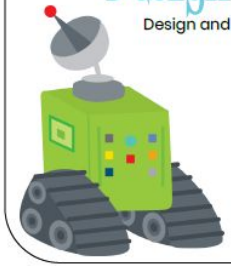
# Design a Space Station

Design a space station for extended stays on the moon. What features would provide comfort and good working conditions for the astronauts?

**Possible Supplies:**
dryer tubing, toilet paper rolls, straws, toothpicks, skewers, tape, duct tape, glue, cardboard, wheels, gears, K'nex, LEGO bricks, nuts & bolts, springs, foil, plastic cups, plastic spoons



# Design & Build a Moon Buggy



Design and build a moon buggy for traveling around the moon.

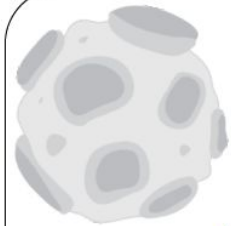
**Possible Supplies:**
cardboard, plastic wrap, plastic cups, old knobs, nuts & bolts, foil, acrylic paint, paintbrushes, casters, paper bags, action figures, glow in the dark stars, toy planets, timers, wires, metal tubing, paper tubing, bicycle tubing

# Design & Build a Flag

Design your own flag to leave on the moon!

**Possible Supplies:**
Skewers, straws, sticks, fabric, cardboard, paint, paintbrushes, glitter paint, clue, stapler, markers

# Craft a Moon Model



Craft a moon model complete with craters and other features you have learned about based on your research of the moon. Learn the names of several craters. How big are they? Can you measure one outside to better understand the size of it?

**Possible Supplies:**
Styrofoam balls, plastic or paper cups, plastic bowls and spoons, fabric, glue, glitter glue,

LittleBinsforLittleHands.com

See the next slide for project ideas.

# OCEANS CHALLENGE SUPPLY LIST

- Acrylic paint
- Aluminum foil
- Baking soda
- Baggies
- Beads
- Cardboard
- Clothes pins
- Coffee filters
- Coins
- Cookie cutters
- Cornstarch
- Cotton balls
- Cotton swabs
- Craft paper
- Craft sticks
- Doilies
- Dryer tubing
- Duct tape
- Fabric
- Faux plants
- Feathers
- Felt
- Flat marbles
- Foam board
- Food coloring
- Funnel
- Gears
- Gems
- Glitter glue
- Glow sticks
- Glue
- Golf tees
- Google eyes
- Gumdrops
- Jelly beans
- Leaves
- LEGO® bricks
- Lollipop sticks
- Magnets
- Marbles
- Measuring cups
- Needle and thread
- Nuts and bolts
- Paint
- Paper
- Paper cups
- Paper clips
- Pencil
- Pinecones
- Pipe cleaners
- Plastic spoons
- Pom-poms
- Raffia
- Ribbon
- Rubber Bands
- Sand
- Scissors
- Screws
- Shells
- Shredded paper
- Shovels & Pails
- Skewers
- Sponges
- Springs
- Stapler
- Straws
- Styrofoam balls
- Sugar cubes
- Tape
- Tape measure
- Tea lights
- Tin can
- Toilet paper rolls
- Toothpicks
- Twine
- Twist ties
- Washi Tape
- Water
- Water beads
- White vinegar
- Wire
- Wooden planks
- Yarn
- Zip ties

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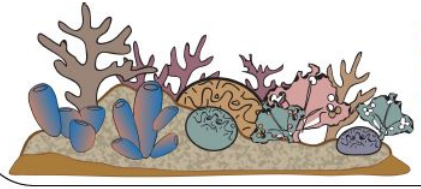
# BUILD A CORAL REEF

Build a coral reef with a variety of materials. Research different types of coral and learn how to protect coral reefs from dying.



**Possible Supplies:**
Foam board, sand, shells, straws, toothpicks, skewers, fabric, glue, cardboard, coffee filters, duct tape, gumdrops, jelly beans, sponges, Styrofoam balls

# DESIGN A BOAT

Design and build a boat to withstand an ocean storm!

**Possible Supplies:**
Wooden planks, LEGO bricks, K'nex, toothpicks, balloons, skewers, glue, twist ties, zip ties, cardboard, twine, craft paper, foil, rubber bands, cotton swabs, fabric, paper rolls, craft sticks, plastic baggies, nuts & bolts

# OIL SPILL CLEAN UP!

Oh no! A tanker is leaking crude oil! How would you clean up the polluted water?

**Possible Supplies:**
Cotton balls, cotton swabs, fabric, sand, plastic cups, straws, baggies, cardboard, cornstarch, baking soda, toilet paper rolls, shredded paper

# DESIGN A SAILBOAT

Design and build a sailboat and power it with your wind. Use a straw to power your boat. Race a friend.

**Supplies:**
Wooden planks, LEGO bricks, K'nex, toothpicks, balloons, skewers, glue, twist ties, zip ties, cardboard, twine, craft paper, foil, rubber bands, cotton swabs, fabric, paper rolls, craft sticks, plastic baggies, nuts & bolts, straws

# DESIGN A BEACH TRASH GRABBER

Design and build a beach trash grabber to make cleaning up easier for people.

**Possible Supplies:**
dryer tubing, toilet paper rolls, straws, toothpicks, skewers, tape, duct tape, glue, cardboard, wheels, gears, K'nex, LEGO bricks, nuts & bolts, springs

# DESIGN & BUILD A SANDCASTLE

Design and build the ultimate sand castle!

**Possible Supplies:**
sand, shovels and pails, cookie cutters, fabric, toothpicks, skewers, cardboard, craftsticks, measuring cups, lollipop sticks, rulers

# READY, AIM, FIRE!

**Challenge:**
Build a rubber band powered catapult that can launch a toy figure into a stationary target.

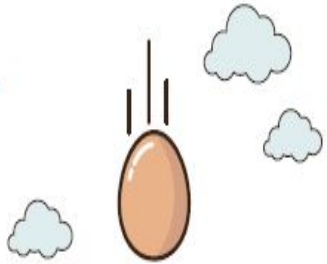
**Suggested Materials:**
masking tape, small cup, paddle pop sticks, string, toy figure, rubber bands



# FALLING FROM THE SKY

**Challenge:** Design and construct a parachute that will prevent a hard-boiled egg (or similar object) from breaking when dropped from a pre-determined height.

**Suggested Materials:**
paper, plastic bag, cellophane, cling wrap, styrofoam cups, plastic cups, masking tape, straws, bubble wrap, string



# AMAZING ARCHITECTURE!

**Challenge:**
Construct the tallest tower possible from spaghetti sticks and miniature marshmallows in 30 minutes.

**Materials:**
mini marshmallows, spaghetti sticks



# AIR RIDING!

**Challenge:**
Build and construct a hovercraft that can travel the length of your desk.

**Suggested Materials:**
cd, plastic straw, sponges, scissors, masking tape, rubber band, balloon

# JUMPING FUN!

Challenge: Build and create a mini trampoline and test its effectiveness by dropping a ping pong ball onto the surface!

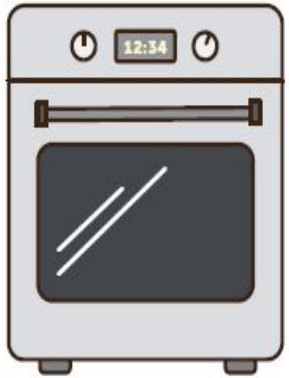
Suggested Materials:
colander, ping pong balls, rubber bands, toothpicks, paper clips, masking tape, plastic bowl, balloons



# USE SOLAR!

Challenge:
Design and build a solar oven that can make a piece of chocolate melt.

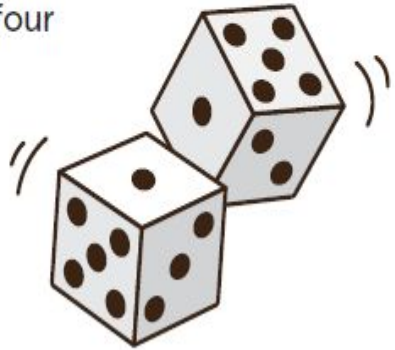
Suggested Materials:
shoe box, foil, straws, pipe cleaners, mirrors, small card board box



# BOARD GAME FUN

**Challenge:** Design and create a board game suitable for four players that focuses on number facts.

**Suggested Materials:**
buttons, cardboard, pens, masking tape, ruler, paper

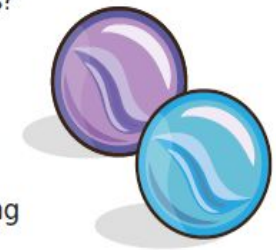




# MARBLE RACE

**Challenge:** Create your own marble run. Who can build the longest run in 30 mins?

**Materials:**
small paper cups, plastic cups, bulldog clip, paper clip, pencils, wooden spoon,wooden ruler, masking tape, coat hanger, string



# PENDULUM SWINGS

**Challenge:** Design and create a pendulum structure out of newspaper. Your pendulum must be able to hold four marbles.

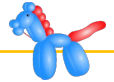
**Suggested Materials:**
large paddle pop sticks, masking tape, newspaper, small plastic cups, string

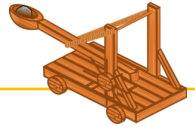


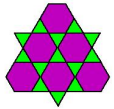
# BUILD A BRIDGE

**Challenge:** Build a bridge out of spaghetti that is strong enough to hold a can of food.

**Suggested Materials:**
spaghetti, masking tape, sticky tape, sticky tack

| MATH MONDAY | OUTDOOR TUESDAY | SCIENCE WEDNESDAY | ENGINEERING THURSDAY | FUN FRIDAY |
|---|---|---|---|---|
|  Play some basketball! Measure how many baskets you make out of 10. Calculate your percentage accuracy. | Use items you would throw away or recycle and make something useful. Name your product, set a price, and create a slogan.  | Scientist want to understand the world around us. Choose an object or something in nature. Ask 5 WHY or WHAT questions about this item.  | Engineers are trained to use the knowledge of science to improve the world. Do you notice anything that can be improved? Draw a new design. | Play a family game like Monopoly that uses critical thinking and math skills.  |
| Help your parents with grocery shopping. Determine the budget and select items without going over. Don't forget about tax!   | Go to the zoo and make observations about various animals' feet and ears. Make a chart for comparison.   | Search newspapers or the internet for an interesting story about science. Tell your family about it at dinner. | Use materials to protect a water balloon from popping. Go outside and test by throwing against a wall or tree.   | Draw out your ideal future city. Make a plan for zoning (residential areas, shopping areas, parks). What laws would you enact? What new technology would exist? |
| Help an adult with dinner. Can you measure the ingredients in the recipe? How would you double the recipe? Halve the recipe?  | Go on a nature walk. Discuss the vegetation and wildlife you see. Notice the different habitats for different animals in your neighborhood. | Place a small ball on top of a large ball and drop them together. Watch how energy is transferred!  | Design your own game or sport using household materials. Invite some friends to play! | Make a greeting card using 3-D popup art.  |
| You have won 1 million dollars! Make a chart of how you will spend your money. Use actual values by browsing newspapers, magazines, or the internet for prices.  | Go outside and take a picture of as many different birds, insects, and mammals as possible! How many types can you find?  |  Go outside. Place a Mentos candy into a Diet Coke plastic bottle. Run!  | Build a raft from aluminum foil. How many coins can it hold? Improve your design and try again.  | Let's get crafty! Make a piece of artwork using reflection and rotation symmetry. |

| MATH MONDAY | OUTDOOR TUESDAY | SCIENCE WEDNESDAY | ENGINEERING THURSDAY | FUN FRIDAY |
|---|---|---|---|---|
| Set-up a lemonade stand in front of your home. How much will you charge? Calculate your total profit. | Download a star app like Star Walk. Can you find a planet or constellations?  | Create your own experiment using baking soda + vinegar.  | Make a catapult with household items. Test your accuracy and precision.  | Pick 3 objects to place in a bag. Have a friend guess the objects with only touching. You can do the same with only smelling. |
| Make a floor plan of your room on grid paper. Measure the dimensions and draw items to scale. Calculate the area. What percentage of your room is your bed?  | Design and build a bird feeder. How many birds can you attract? What design improvements can you make to attract more birds?  | Fill a clear container 3/4 with vegetable oil. Fill the rest with water and add 10 drops food coloring. Drop in an Alka-Seltzer tablet. You have a lava lamp! | Find your favorite doll or action figure and design a zip line to get them from one level to another (tree to ground, table to floor).  | Mix up dish soap and water. Dip a bubble hoop into the mixture and blow. What is the largest bubble you can make?  |
| Measure your heart beat for 10 seconds. Convert to beats per minute. Go out and run around and then measure again. What is the percentage increase?  | Plant something, such as a flower or herb, in the backyard or a small pot. Watch it grow over the summer. What does it need to grow? | Predict how many pennies can be placed in a full glass of water before it overflows. Fill a glass to the rim. Add pennies one by one. | Design a way to keep an ice cube from melting as long as possible. Compete with a friend.  | Create an obstacle course outside. Calculate your average time to complete the course over a series of 5 attempts. Get a friend to try! |
| Run one lap of a track (1/4 mile) and keep the time. Calculate how long it would take to run ½ mile, 1 mile, and 5 miles at the same pace.  | Create your own ant farm! Find a diagram at m.wikihow.com/Build-an-Ant-Farm. What do you observe?  | Stretch out a balloon. Pour 40 ml water into a coke bottle. Add a tsp baking soda and stir. Add lemon juice and quickly place balloon over the mouth of bottle. | Make a treasure box to keep your secrets safe. Design a system that will set off an alarm or a reaction to keep prying eyes away. | Design a math scavenger hunt for a friend. Have them find numbers around your home that are equal to equations that you write as clues. |

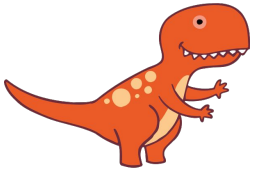
| MATH MONDAY | OUTDOOR TUESDAY | SCIENCE WEDNESDAY | ENGINEERING THURSDAY | FUN FRIDAY |
|---|---|---|---|---|
| Find 5 coupons for items you want. Calculate the savings from the coupons. | Create a compost pile. Chart the temperature as it decomposes. Use as fertilizer when it no longer smells and the temperature matches the surrounding dirt.  | Turn on the water slowly. Bruch a plastic comb through your hair 10x. Slowly bring the comb close to the water.  | Build a tower as tall as possible using only sheets of newspaper. No tape or glue allowed! | Watch a TV show or documentary show about science. Science fiction doesn't count!  |
| Look up the salary for your dream job. Ask your parents how to approximate federal and state taxes. How much money do you have per month after taxes?  | Image you are going camping (or actually go camping). How will you keep food away from hungry bears?   | Design your own experiment! Come up with a hypothesis, design an experiment, and record the results. | Image you only have one leg. Design a prosthetic leg using household items. Test it out! How do you make it comfortable? How would it attach to your body? | Get a bag of M&Ms. Predict the % of red, blue, green, and brown. Open and record actual numbers. What is the probability you will get a green from the bag?  |
| You are a pirate and have to walk the plank! The plank is 5 feet long and you take 8 equal steps. How long is each step so that you don't fall off? 10 steps? 12 steps?  | Pick a flower. Take it apart and sketch its different components. Describe the textures and colors. Why do you think it was made this way?  | The tongue map theory suggests that different areas of your tongue sense different tastes. Look-up this theory. Create an experiment to prove or disprove it.  | Build a house made of playing cards. What configurations are the strongest? Why?  | Make a piece of artwork using tessellations.  |
| Measure the length of your hand. Now you have your own personal ruler! Go out and measure everything   | Go outside and look for rocks. Can you find different types? Research rocks local to your area and see if you can find them. | Drought is a common problem that farmers face. Research how rain forms and think of ways that you could increase local rain. Look up "cloud seeding."  | Select a manufactured item in your home and investigate how it works. Describe the item in writing and with a diagram. | Which 3 jobs would you like to have when you grow up? Find someone to speak to that is in one of those careers!  |

# Digital Breakout

## Choose one of the breakout challenges to solve!

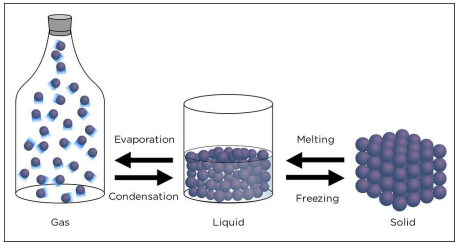
### Native American Breakout

### Og's Great Adventure



### Pet Shop Selection


### States of Matter




### Fossil Forensics

### Connie Context's Confectionary

# Websites worth visiting...

https://sciencebob.com/category/experiments/

https://mysterydoug.com/mysteries/rainbows#slide-id-8205

https://frugalfun4boys.com/

http://wonderopolis.org/

https://billnye.com/home-demos

https://www.creosityspace.com/stem-at-home.html