



# SOIL, PLANTS, & ANIMALS

*oh my!*

Crafts • Recipes • Science • Games • Art



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SOIL, PLANTS, &  
ANIMALS, OH MY!





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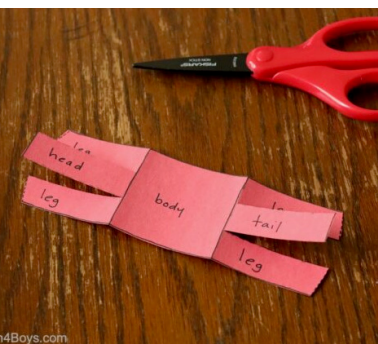
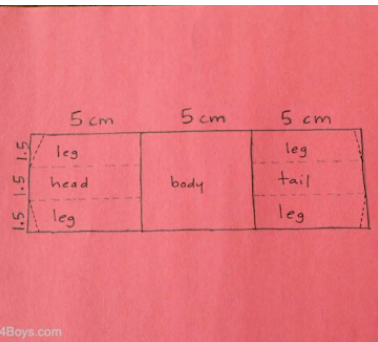
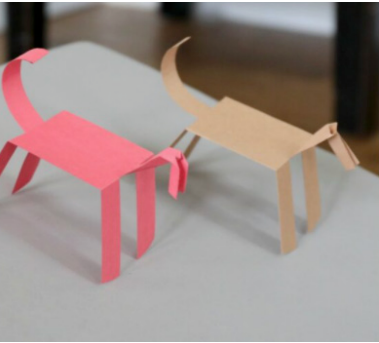
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# CRAFTS



**CHECK OUT HOW  
TO MAKE STRING  
ART ON PAGE 15**

# A WALKING PAPER HORSE



## Materials:

- 1 sheet of construction paper
- Metric ruler
- Scissors

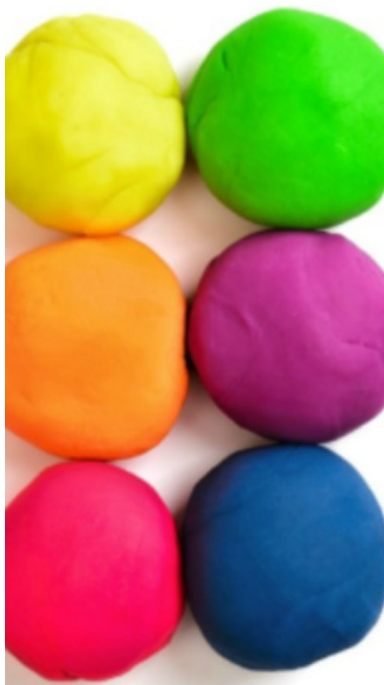
## Instructions:

1. Use construction paper. You can cut 2 or 3 out of one piece of paper.
2. Use a metric ruler to draw the shape. Start with a rectangle that is 15 cm by 4.5 cm. Then, divide it up as shown. Cut around the perimeter of the rectangle. Then, cut the dotted lines inside the rectangle.
3. Cut out your horse as shown.
4. Curl the tail (horses' tails aren't curled like this, but it seems to make it balance better) and fold the head.
5. The paper horse walks by rocking back and forth on its curved feet. As the horse rocks from one foot to the other, gravity pulls the feet down the incline.
6. The surface the horse walks on is important! It needs to have enough friction but not too much.

## Tips:

- If you can't get your horse to walk, make sure that the legs are nice and straight.
- Try adjusting the height of the head. For whatever reason, our horse walked the best when his head was up high.
- Adjust the height of your slope. If the horse won't walk, make it higher. If the horse tips forward, make it lower.
- If your horse is not rocking back and forth smoothly, try trimming the feet to make them rounded. They should work like rocking chair runners! The outside edge should be the highest point.

# BREAD CLAY



## Materials:

- 10-12 pieces of bread
- 1 cup of school glue
- A bowl for mixing
- Food coloring (optional)
- Play dough tools
- Cookie cutters
- Flour

## Instructions:

1. Begin by cutting the crusts from 10-12 slices of bread.  
Then, use a large bowl to break apart the bread.
2. Rip and tear the bread over and over; the finer the crumbs the better.
3. Once the bread is broken into pieces, add one cup of white school glue to the bowl and mix.
4. Continue to mix the ingredients in the bowl until the dough is formed.
5. Then, remove the dough from the bowl and knead it with clean, dry hands, sprinkling flour as needed.
6. After a bit of kneading, there will be super fun and stretchy play clay!
7. Use play dough tools and cookie cutters.
8. Add Color to Your Bread Clay
  - Divide the bread clay into bowls, using one bowl for each color of clay.
  - Add several drops of food coloring to each bowl.
  - Then, knead the color into the dough, adding more food coloring and kneading until the desired colors are achieved.

## Tips:

- Is your dough too sticky? That means you need to add a little more bread. Our clay was a little stickier than we wanted, so we added another slice of bread, and that did the trick!
- Is your bread clay crumbling apart? That means you need to add more glue. Slowly add more and knead until the desired consistency is reached.



# PIG CORNER BOOKMARK



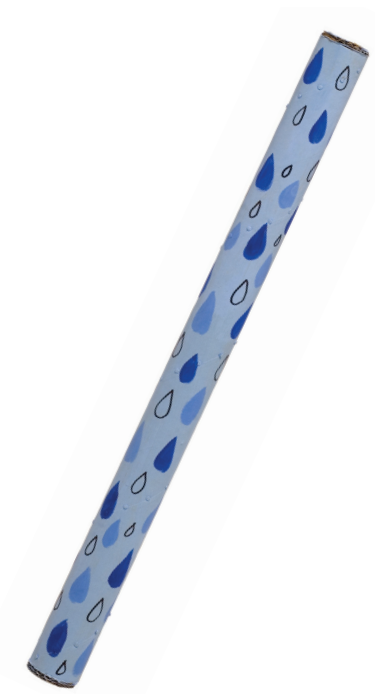
## Materials:

- 1 pink square piece of paper (14 x 14 cm)
- Darker pink paper (optional)
- White paper scraps for the eyes
- Scissors
- Glue stick
- Black pen for the pig's details

## Instructions:

1. Fold the square paper across the diagonal to make a triangle.
2. Rotate to bring the long edge parallel. The parallel edge will face you. Then, bring the right corner up to meet the top corner.
3. Repeat with the corner. You should now have a smaller diamond with a line down the middle.
4. Open up the last two folds.
5. Fold down the top corner. Only take one sheet of paper.
6. Bring the right corner back up and fold into the flap.
7. Repeat with the left corner.
8. Cut out two triangles and round off the tops for pig ears.
9. Next, cut out an oval snout.
10. Finally, draw and cut out cartoon eyes for your pig.
11. Arrange and glue the snout and eyes onto your bookmark.

# SOYBEAN RAIN STICK



## Materials:

- Cardboard tube with a diameter of 4-5 cm and a length of 60-100 cm
- 2 cardboard circles corresponding to the section of the tube openings
- Panel pins (or finishing nails) equal in length to the outside diameter of the tube
- Rice, soybeans, or other seeds of similar size
- Adhesive tape
- Wood or paper glue
- Hammer
- Pencil

## Instructions:

1. Locate the thin spiral groove, which is usually indented into the surface of the tube. If there isn't one, you can wind the adhesive tape around the outside circumference of the tube in a spiral along its length.
2. On the groove (or on the adhesive tape) mark a dot every two centimeters.
3. At every mark, drive a panel pin into the cardboard vertically. It can happen that on the other side it pokes through the cardboard. If the pin tips get in the way when you hold the tube, cover them with adhesive tape.
4. Glue the cardboard circle to the bottom of the tube, and attach it with adhesive tape. Pour rice, millet, soybeans, or seeds of a similar size (you can test various sizes of seeds) into the tube, so it is filled to approximately  $\frac{3}{4}$  full. Then, cover the top of the tube with another round piece of cardboard and glue it on.

## Tips:

- Make other farm animals windsocks like a chicken or a sheep.

# FARM ANIMAL WINDSOCKS



## PIG WINDSOCK:

### Materials:

- 2 sheets of pink construction paper
- Glue
- Black marker or crayon
- Scissors
- String

### Instructions:

1. Cut out the shapes for the pig's head from pink construction paper: one large circle, one smaller circle, two triangular ears.
2. Glue the pieces together. Use a marker or crayon to add the eyes and nose.
3. Cut out four strips of pink paper for the legs. Accordion fold the legs. Cut out a little tail.
4. Glue the finished head onto a sheet of pink construction paper. Roll the paper into a cylinder shape and staple in place. Glue the four legs at the bottom, glue the tail on the back, and attach a string for hanging at the top.

## COW WINDSOCK:

### Materials:

- 1 sheet of brown construction paper
- 1 sheet of white construction paper
- 1 sheet of yellow construction paper
- Glue
- Black marker
- Scissors
- String
- Streamers

### Instructions:

1. Cut out some spots from white construction paper and glue onto a sheet of brown construction paper.
2. Cut out the pieces for the cow's head: two white ears, one triangular white face, one white oval mouth, one yellow cowbell.
3. Glue the head and cowbell onto your brown paper. Draw in eyes and a nose.
4. Add some little brown spots onto the cow's face and ears. Write your name on the cowbell.
5. Roll the paper into a cylinder and staple in place.
6. Add some streamers on the bottom and string on the top to hang.

# LEATHER WORK



## HERB GARDEN LABELS:

### Materials:

- Scrap leather (English bridle leather works best, but any kind of scrap leather will do)
- Revolving leather hole punch
- Fine-point paint marker in white, gold, or silver
- Twine or string
- X-Acto knife

### Instructions:

1. Cut out the tags into rectangles about 1 x 4 inches (or longer depending on the size of pots) for labels.
2. Punch holes on either end of the labels.
3. Use a paint pen to write the names of herbs on each label and let dry.
4. Thread loops of twine through the holes and pull through to tie the labels on herb pots.



## LEATHER COASTERS:

### Materials:

- English bridal scrap leather
- X-Acto knife
- Thread and leather needle (optional)
- Paint (optional)

### Instructions:

1. Make a stencil in any shape. Squares and circles work well.
2. Following the stencils, cut out the coasters.
3. Leave coasters plain or embellish them with leather stamps, stitch around the edges, or decorate with a touch of paint.



# WHEAT WEAVING



## Materials:

- 8 strands of wheat
- Rope
- Water

## Instructions:

1. Soak the wheat for 20 minutes.
2. Tie eight stalks of wheat together with a clove hitch knot below the heads.
3. Divide stalks in half (four and four).
4. Hold one group in each hand.
5. Twist the right group inward three times then go under the left group.
6. Continue doing this until desired length is reached.
7. Tie ends with a clove hitch knot and square knot.
8. Repeat steps one through six.
9. Tie the two ropes together just below the twist.
10. Bring the separate ropes away from each other. Then join at the bottom making a heart.
11. Tie all ends together at the heads.

# GARDEN STONES



## Materials:

- Large and medium-sized rocks (smooth ones work best)
- Gouache or acrylic paints
- Outdoor varnish

## Instructions:

1. Cover the rocks with a layer of paint (orange for pumpkins, pink for strawberries, green for cucumbers, red for tomatoes, etc.).
2. Add details such as lines and leaves to make the painted stones look a bit more like the plants they symbolize.
3. Coat in varnish to protect paint against rain and damage.

# CAR AIR FRESHENERS



## Materials:

- Metal cookie cutters
- Aroma beads
- Fragrance oils
- 1 mason jar
- Mica powder
- Ribbon
- Non-stick pan
- Large nail

## Instructions:

1. Add 1oz of oil per 4oz aroma beads to the mason jar.
2. Seal tightly and shake to distribute the oil. They need to sit until oil is fully dissolved. This can take up to several weeks depending on the scent.
3. Make sure to rotate the mason jar from the upright to upside-down position throughout the day and shake it to distribute the oils. Once dry (they will not stick to the jar), they are ready to be used.
4. Preheat the oven to 350°.
5. Pick your cookie cutter of choice and set it on a piece of paper.
6. Fill cookie cutter  $\frac{3}{4}$ . Add mica powder color of choice. Mix until covered.
7. Too much mica powder can cause them not to stick. A little goes a long way.
8. Put a nail at the top to create a hole.
9. Add colored beads back to the cookie cutter on a nonstick pan and bake.
10. Bake for five to eight minutes.
11. Let cool, then punch out your freshie and decorate as desired!

# GOAT SOAP



**\*Adult Supervision Required\***  
Lye should be handled with extreme care as it is caustic and can burn your skin:

## Materials:

- 12 ounces coconut oil
- 15 ounces olive oil
- 13 ounces lard or vegetable oil
- 13 ounces goat milk
- 6 ounces lye (100% sodium hydroxide – find at hardware store)
- 1 ounce essential oils additives such as oatmeal or lavender flowers (optional)

## Instructions:

1. On the day before you make this goat milk soap recipe, you need to freeze your goat milk. Getting it very cold isn't good enough, it needs to be frozen.
2. Then, you need a large glass or stainless steel bowl. (Avoid using plastic, as it may absorb odors.) Put this in a larger bowl or the sink and fill the outside bowl about half full with cold water and ice so it's very cold. In the inside bowl, place your frozen chunks of milk.
3. Very slowly, add your lye and carefully squish it into the milk. A stainless steel potato masher works quite well for this step. Keep adding the lye until it is all incorporated. It will probably not get hot or even warm. Don't worry about that, it doesn't need to. If the ice in the outside bowl melts, keep replacing it. It needs to stay very cold. The milk may turn orange or even tan to light brown. This is normal. If it turns dark brown, you'll need to start over. The milk is scorched at this point. The sugars in the milk are very sensitive and need to be kept very cold. And if you smell an ammonia-like smell, that is normal too – just keep going. This smell will fade while it is curing.
4. When your lye/milk is ready, keep it on ice while you get the oils ready. Measure your oils using a kitchen scale. Combine oils and heat them slightly until they are about 110° – 125°F.
5. When the oils are ready, slowly pour the lye/milk mixture into the oils. Mix by hand for the first 5 minutes and then use a stick (immersion) blender to bring it to trace. If you've never made soap before, this is where it gets quite thick, much like pudding. When it comes to a trace, add your essential oils and any additives and pour it into molds.
6. Wait 24 hours or more, remove from molds, and cut if desired. Wait 3-4 weeks, turning it every so often so all sides have been exposed to air. You can test the pH with test strips to make sure it's cured (the desired pH is between 8-10).



# STRING ART



## Materials:

- 5 inch square wood plaques
- Wool, cotton, or alpaca fiber
- Small nails
- Tack hammer
- Acrylic paint (optional)
- Paintbrushes (optional)
- Thumbtack
- Design template

## Instructions:

1. Find a template you love and resize it to be about three inches wide (adjust the size if you use a bigger wooden plaque).
2. Tape the template onto your wooden plaque, orienting it exactly as you want.
3. Next, use a thumbtack to pierce the paper template where each nail should go. Push hard enough so that you puncture the wood underneath, too.
4. Remove the paper template, and you should be able to see exactly where each nail should go.
5. Next, use the tack hammer to nail each nail into the wood in the designated spots, leaving about  $\frac{1}{4}$  to  $\frac{1}{2}$  inch gap between the top of the nail and the wood surface.
6. Then, take the end of the yarn and knot it twice around one nail, leaving a tail of two to three inches.
7. Then, just wrap the yarn around the nails, moving back and forth across your design as much as you can, keeping the string taut.
8. Before tying off the yarn, wrap the yarn around the entire perimeter of the design to give it a clearly defined border and solidify the design.
9. Finally, knot off the string and trim off the excess.
10. Use acrylic paint to paint along the edges of the square plaque (optional).

# RECIPES



**CHECK OUT  
HOW TO MAKE  
MINI PIZZAS  
ON PAGE 21**

# TORTILLA IN A BAG

YIELDS: 1 SERVING



## Ingredients:

- 1 ½ cups flour
- ¼ teaspoon salt
- 1 teaspoon baking powder
- 3 tablespoons shortening
- ½ cup hot tap water

## Instructions:

1. Place flour, salt, and baking powder in a bag.
2. Close the bag, and shake just a few shakes to mix.
3. Add shortening and close the bag.
4. Work bag with hands until the mixture looks crumbly and there are no large pieces of shortening visible.
5. Open the bag, and add the hot tap water.
6. Knead in the bag until the dough is one large piece and the sides of the bag come clean.
7. Take the dough out of the bag, and divide it into four pieces.
8. Put the pieces of dough on the table, and lay the bag on top of them. Let the dough rest for 15 minutes.
9. After resting time, roll or pat the dough into eight- to 10-inch circles.
10. Place the circles on a griddle or frying pan heated to medium or medium-high.
11. Cook until dark brown spots appear. Turn and cook on the other side until brown.

## Classification Activity:

- While the dough is resting, give each student a round piece of paper, approximately 10-inch diameter.
- Give students three minutes to list as many “round” things as they can. (Hopefully, tortilla will be one of their words.) You will create a list, also.
- After three minutes, all students should stand up. As you read your list of words, students must sit down if they have the same word that you have.
- At the end of your list, students who are still standing can each read one or two words from their lists.
- Tell students they have just classified a list of objects using the characteristic (or property) “round.”
- Students can turn their paper over, cut their paper into a square and repeat the activity for the characteristic “square.”

# SANDWICHES ON A STICK

YIELDS:  
4-10 SERVINGS



## Cuban Sandwich Ingredients:

- Sourdough bread loaf
- Roasted pork
- Sliced ham
- Dill pickles (sliced or cut into bite-size pieces)
- Mustard (for dipping!)

## Instructions:

1. Prep your ingredients into bite-size pieces and skewer onto a lollipop stick, alternating ingredients.
2. Serve with the mustard (or the dipping sauce of your choice) and enjoy!

## Tips:

- Use your favorite ingredients to create another sandwich on a stick.



# BEEF JERKY

YIELDS: 24-40 SERVINGS



## Ingredients:

- 2 pounds flank steak (or eye, round, or top round steak)
- ½ cup low-sodium soy sauce
- 2 tablespoons Worcestershire sauce
- 2 teaspoons coarsely ground black pepper
- 1 teaspoon liquid smoke
- 1 teaspoon onion powder
- 1 teaspoon seasoned salt
- ½ teaspoon garlic powder

## Instructions:

1. Thinly slice the steak into ¼-inch thick strips, either with the grain (which will result in a chewier beef jerky) or against the grain (which will be more tender). To cut more easily, place the steak in the freezer for 15-30 minutes before slicing.
2. Transfer the strips of steak to a large Ziploc bag.\*
3. In a separate small mixing bowl, whisk together the remaining ingredients until combined. Pour the mixture into the Ziploc bag with the steak, seal the bag, and toss until the steak is evenly coated.
4. Refrigerate for at least 30 minutes, or up to 1 day.\*\*
5. Using a dehydrator, lay the strips out in a single layer on the trays of your dehydrator. Follow the dehydrator's instructions to cook the beef jerky until it is dry and firm, yet still a little bit pliable, six to 10 hours. (Cooking times will vary based on the thickness of your meat and the heat/brand of your dehydrator.) Remove jerky and transfer to a sealed container. Refrigerate for up to one month.

\*Or you can also mix the beef and seasoning sauce in a large mixing bowl.

\*\*Cooking time does not include the amount of time needed to marinate the beef, which can be between 30 minutes to 24 hours. Two pounds of beef yields about 50 individual pieces of beef jerky depending on how thick the beef is sliced and what size of strips you have

# CHEESEBURGER SOUP

YIELDS:  
6-8 SERVINGS



## Ingredients:

- 4 small russet potatoes, peeled and diced
- 1 small white or yellow onion, chopped
- 1 cup carrots, shredded
- ½ cup celery, diced
- 1 teaspoon dried basil
- 1 teaspoon dried parsley
- 3 cups chicken broth
- 1 pound lean ground beef
- 3 tablespoons butter
- ¼ cup all-purpose flour
- 2 cups milk
- ½ teaspoon salt
- ½ teaspoon black pepper
- 1 package (16 ounces) Velveeta processed cheese, cubed OR 2 cups shredded cheddar cheese

## Instructions:

1. Place potatoes, onions, carrots, celery, dried basil, and parsley in a large Crockpot. Pour chicken broth over vegetables. Cover with lid. Cook on low heat for six to eight hours OR on high heat for four to five hours or until potatoes are tender.
2. About 45 minutes before serving, cook and crumble ground beef in a large skillet over medium-high heat. Drain any grease. Pour cooked ground beef into a Crockpot. Carefully wipe out the hot skillet with a paper towel, then add butter. When butter is melted, whisk in flour and cook until golden brown and bubbly (about one minute). Whisk in the milk, salt, and pepper. Pour mixture into the Crockpot and stir to combine everything.
3. Add the cubed Velveeta cheese or shredded cheese to the Crockpot. Stir again. Cover with lid and cook for another 30 minutes or until the cheese is melted.
4. Serve and enjoy!

# CANADIAN BACON MINI PIZZA

YIELDS: 6 SERVINGS (SERVING SIZE: 2 MINI PIZZAS)



## Ingredients:

- 6 English muffins, split
- 1 (14-ounce) jar pizza sauce
- 1 (8-ounce) can pineapple tidbits in juice, drained
- 1 (6-ounce) package Canadian bacon, diced
- 1 ½ cups (6 ounces) pre-shredded part-skim mozzarella cheese

## Instructions:

1. Preheat the oven to 425°.
2. Spread each muffin half with about two tablespoons of sauce. Sprinkle pineapple and Canadian bacon evenly over the sauce. Sprinkle evenly with cheese. Place on a baking sheet.
3. Bake at 425° for 12 minutes or until the cheese is lightly browned.

# CHARCUTERIE BOARD

**YIELD:**  
1 DELICIOUS  
CHARCUTERIE  
BOARD!



## Other items you could put on your board:

- String cheese
- Any kind of cheese ball
- Fresh berries
- Salsa and chips
- Guacamole
- Sliced baguettes
- Pickles
- Prosciutto
- Grapes
- Deviled eggs
- Sliced celery
- Chopped broccoli
- Chopped cauliflower
- Sliced bell pepper
- Sugar snap peas

## Ingredients:

### Dips:

- Ranch dressing
- Hummus

### Cheeses:

- Swiss cheese
- Sharp cheddar cheese
- Gouda cheese
- Havarti cheese
- Pepper Jack cheese

### Meats:

- Ham slices
- Turkey slices
- Pepperoni slices
- Salami slices

### Vegetables:

- Baby carrots
- Sliced cucumbers
- Grape tomatoes

### Crackers:

- Wheat thins
- Ritz Crackers
- Pretzel chips
- Pita chips

### Other fillers:

- Black olives
- Green olives
- Trail mix
- Apple slices
- Orange slices
- Peanut butter-filled pretzels

## Instructions:

1. Set out a large platter or cutting board.
2. Start by putting dips and food items that need to be contained in small bowls. Then, spread the bowls out on the board.
3. Next, arrange the slices of cheese around the bowls.
4. Add the meats, spreading them around the cheese and bowls.
5. Add vegetables in empty spaces.
6. Add crackers, preferably by the cheeses and dips they go with.
7. Use fillers to fill in empty spaces left on the board.
8. Serve and enjoy!

# FROZEN PB&J POPS

YIELDS: 6 SERVINGS



## Ingredients:

- ½ cup peanut butter, all-natural
- 1 cup yogurt, plain
- 1 cup almond milk, unsweetened
- 2 tablespoons honey
- 1 cup strawberries
- 2 cups orange juice
- 1 ounce chia seeds

## Instructions:

1. Blend nut butter, yogurt, milk, and honey until smooth. Pour the mixture into molds until they have filled halfway or even  $\frac{1}{3}$  of the way. Cover and freeze for approximately one hour.
2. Next, stir together the strawberries and juice, divide among your molds, and then insert the sticks. Top off the pops with some chia seeds if desired.
3. Cover and place back in the freezer until completely frozen. This can take a few hours and up to six to eight hours, depending on how large your mold is.



# CROCK POT APPLESAUCE

YIELDS:  
4.5 CUPS



## Ingredients:

- 3 pounds apples, peeled, cored, and thinly sliced
- $\frac{3}{4}$  cup water
- 3 tablespoons fresh lemon juice
- $\frac{1}{2}$  cup light brown sugar, packed
- 1 inch piece of fresh ginger, peeled and grated
- 2 teaspoons ground cinnamon
- 1 teaspoon ground ginger

## Instructions:

1. Put all the ingredients into a slow cooker, cover, and cook on low heat for seven to nine hours, stirring once halfway through the cooking time to break up the apples.
2. After cooking, the apples should be tender and starting to break down. Stir the apples, breaking up any remaining large chunks until they reach your desired consistency, using a fork or potato masher. If you want smooth applesauce, you can process it in a blender or food processor or use an immersion blender. Transfer the applesauce into mason jars and store it in the refrigerator.

## If you want to freeze your applesauce:

1. Let the applesauce cool to room temperature, pour it into Ziploc freezer bags or other freezer-appropriate containers, and put it in the freezer.

## If you want to can your applesauce:

1. Bring water to a boil in a boiling water canner. Set the bands aside. Heat the jars and lids in simmering water until you are ready to use them (do not let the water come to a boil).
2. Ladle hot applesauce into the hot jars, leaving  $\frac{1}{2}$ -inch head space. Remove any air bubbles, then wipe the jar rims clean. Top the jars with the hot lids, then screw on the bands until they are fingertip tight.
3. Process the jars in the boiling water canner for 20 minutes, adjusting your processing time for altitude if necessary.
4. Remove the jars from the boiling water canner and let them cool. Check the lids to make sure they have sealed after 24 hours. (The lids should not flex up and down when the center is pressed.)



# EDIBLE SOIL LAYERS

YIELDS:  
4-6 SERVINGS



## Ingredients:

- Chocolate and butterscotch chips mixed together
- Chocolate pudding
- Whole Oreos
- Crushed Oreos
- Shredded coconut mixed with green food coloring
- Gummy worms

## Instructions:

1. Beginning with your empty glass, drop an entire Oreo into the bottom. This represents the bedrock.
2. Grab your chocolate and butterscotch chips and layer them on top of the Oreo. The chips characterize the parent material.
3. Spoon in the chocolate pudding to represent subsoil.
4. On top of the subsoil goes the crushed Oreos, portraying topsoil. Next, stick the gummy worms out of the topsoil.
5. Sprinkle your colored coconut on top, allowing your worms to poke out.
6. Label your layers. Look carefully at your soil profile while discussing the function of each tier.
7. Then last but certainly not least, grab your spoon and dig in! Yum!

# DEVEILED EGGS

YIELDS: 8 SERVINGS



## Ingredients:

- 8 large eggs
- ¼ cup plain Greek yogurt
- ¼ cup veggie puree sweet potato, beet, peas, fresh avocado, baby spinach
- 1 tablespoon Dijon mustard
- 1 teaspoon white wine vinegar or lime juice
- ¼ teaspoon salt or more to taste
- ¼ cup chives, finely chopped (optional)
- 1 teaspoon paprika (optional)

## Instructions:

1. Boil eggs either on the stove or Crockpot. Place in ice water and let eggs cool.
2. Choose one vegetable for the filling and prepare the puree. Steam ¼ cup of your vegetable until tender. After cooking, mash with a fork or puree using a food processor or blender. If you choose spinach, steam two cups of fresh spinach until just wilted, pat dry, and puree in a food processor. Set vegetables aside to cool. (You can cook a larger batch of whichever vegetable you choose and save it for another meal or recipe!)
3. Peel the eggs and slice each in half lengthwise. Place the yolks into a medium bowl. Add the yogurt, one variety of vegetable puree, mustard, vinegar, and salt. Mash with a fork to combine thoroughly. Taste and adjust the salt as needed.
4. Spoon filling into a quart-size Ziploc bag or piping bag. Place into the fridge until just before serving. When ready to serve, snip off one corner of the bag and pipe filling into the egg whites.
5. Sprinkle with chopped chives and paprika for an added flare. Serve immediately.

# CHICKEN SALAD

YIELDS: 4 SERVINGS



## Ingredients:

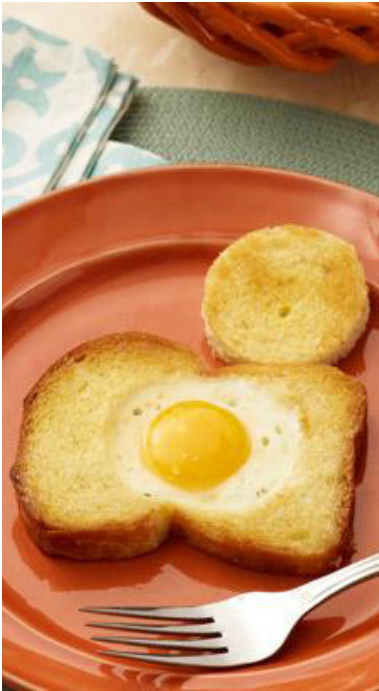
- 3 cups chopped chicken
- ½ cup mayo
- 1 tablespoon Dijon mustard
- ½ cup chopped celery
- 1 tablespoon chopped dill
- 2 tablespoons dill pickle relish

## Instructions:

1. Combine all ingredients in a large bowl and mix well.
2. Serve with your favorite crackers, stuffed into a bell pepper, or over a bed of spinach.

# EGG IN THE HOLE

YIELDS: 1 SERVING



## Ingredients:

- 1 slice of your favorite kind of bread
- 1 tablespoon butter
- 1 egg
- Salt
- Freshly ground black pepper

## Instructions:

1. Using either a biscuit cutter or the rim of a glass, press a hole in the center of the slice of bread.
2. Heat a skillet over medium-low heat and melt the butter. When the butter covers the bottom of the skillet, place the slice of bread in the skillet, then crack the egg into the center of the hole.
3. Cook until the egg sets a bit on the bottom, 30 to 45 seconds. Sprinkle the egg with salt and pepper to taste. After about a minute, flip it over with a spatula, and add salt and pepper on the other side.
4. Let it cook until the yolk achieves your desired level of doneness. Recommended: golden brown toast, white (not browned/ burned) whites, soft unbroken yolk.



# SCIENCE



**CHECK OUT  
HOW TO MAKE  
MILK PLASTIC  
ON PAGE 31**



# SIMPLE SOIL SCIENCE



## **Materials:**

- Dirt! Sand! Mud! Anything that vaguely resembles soil.
- Test tubes or beakers or jars, whatever you have to collect the soil
- Plastic pipettes (optional)
- Magnifying glass
- Water

## **Step 1 – Simple Soil Science: Observe and Explore**

One of the most important parts of science is observation. Get messy, plant some seeds, and look at and talk about the potting soil, backyard dirt, sand, and other soil. Use fingers and move it around with garden trowels. Talk about the different types of soil. Pull out a magnifying glass and look at the samples up close, too. Make observations in a notebook or journal.

### **Questions to ask during observation and exploration:**

- What does the soil feel like? Does it remind you of anything?
- How are the potting soil and our back yard dirt different? Why do you think they're different?
- Do you think sand would be good to grow plants in? Why or why not?
- What do you think the samples will look like under the magnifying glass?

## **Step 2 – Simple Soil Science: Experiment**

See how water affects the sand, potting soil, and backyard dirt. Fill test tubes with the soil and pour in some water.

Observe what happens in each test tube and how the water interacts with each soil type. Note observations in a notebook or journal.

# MAKING MILK PLASTIC



## Materials:

- 1 cup of milk
- 4 tbsp vinegar
- Food coloring (optional)
- Cookie cutter
- Paper towels

## Question:

What happens when the milk and vinegar are mixed together? Why do you think this is?

## Hypothesis:

Students will make predictions based on their knowledge of chemical reactions.

## Experiment/Activity:

1. Heat 1 cup of milk in a pan until the milk is steaming, or use a microwaveable container. Warm milk at 50% power for 5 minutes. Milk should be the same temperature as milk for making hot cocoa. Heat for more time as needed.
2. Add 4 teaspoons of white vinegar to a heat resistant mug.
3. Add 1 cup of hot milk to the mug. The milk should form white clumps, or curds.
4. Mix slowly with a spoon for a few seconds.
5. Stack four layers of paper towels on a hard surface.
6. Once the milk and vinegar mixture has cooled a bit, use a spoon to scoop out the curds. Tilt the spoon against the inside of the mug to let excess liquid drain out while retaining the curds in the spoon. Collect as many curds as possible. Put them on top of the paper towel stack.
7. Fold the edges of the paper towel stack over the curds and press down to absorb excess liquid from the curds. Use extra paper towels if needed to soak up the rest of the liquid.
8. Knead all of the curds together in a ball of dough. This is the casein plastic.
9. Color, shape, or mold the plastic within an hour of making the dough. Let it dry on paper towels for at least 48 hours. Once it has dried, the casein plastic will be hard. Tip: To shape the plastic, the dough must be kneaded well. Molds and cookie cutters work well, or, with more patience, the dough can be sculpted. Food coloring, glitter, or other decorative bits can be added to the wet casein plastic dough, and dried casein plastic can be painted or colored with markers.

## Explanation:

When hot milk is added to the vinegar, small, white chunks should become visible in the mixture. This is because adding an acid, such as vinegar, to the milk changes the pH of the milk and makes the casein molecules unfold and reorganize into a long chain, curdling the milk. The white chunks are curds. The curds should have separated from the liquid. Additional drying of the curds with the paper towels should have made the curds ready to knead in to a ball and use as casein plastic, which can be molded and decorated.

# EATING NAILS FOR BREAKFAST?!



## Explanation:

Many breakfast cereals are fortified with food-grade iron (chemical symbol: Fe) as a mineral supplement.

Metallic iron is digested in the stomach and eventually absorbed in the small intestine. If all of the iron from the body were extracted, there would be enough iron to make two small nails.

Iron is found in hemoglobin. Hemoglobin is the compound in red blood cells which carries oxygen from the lungs to the body. The iron in the hemoglobin gives blood its red appearance. A diet without enough iron can cause exhaustion, susceptibility to disease, and heart and lung issues. Food scientists say a healthy adult requires about 18 mg of iron each day.

## Materials:

- Breakfast cereal
- Magnet (neodymium)
- Paper plate
- Beaker
- Mortar and pestle (optional)

## Question:

Is there iron in breakfast cereal? Can a magnet be used to prove there is iron in your breakfast cereal?

## Hypothesis:

Students will predict if iron is found in cereal and if it can be separated from the cereal if it is found.

## Experiment:

1. Place a few flakes of cereal on a paper plate. Hold the magnet close to the flakes and see if they stick to the magnet or are moved by it.
2. Reduce the friction on the flakes by floating four to six flakes in a beaker of water. Hold the magnet close to the flakes. See if they stick to the magnet or are moved by it.
3. Reduce the size of some dry flakes by crushing them to a fine powder using a pestle and mortar. Spread the resulting powder on a piece of paper.
4. Place a magnet under the paper and move the paper over the magnet. Observe any effect the magnet may be having on the movement of the powder. Do NOT put the magnet in direct contact with or close to the powder without the paper in between. With careful maneuvering, it should be possible to separate out fine grey specks of iron from the rest of the powder.

## Conclusion:

What happened when the magnet was placed over the cereal? Why did this happen?

# HOPPING CORN



## Materials:

- A clear glass container
- Popcorn kernels
- 2 ½ cups of water
- 2 tbsp. of baking soda
- 6 tbsp. of white vinegar
- Food coloring (optional)

## Question:

What happens when popcorn kernels are placed in the water baking soda mixture?

## Hypothesis:

Students will predict what will happen when the popcorn is added to the liquid.

## Experiment:

1. Fill your jar with water and add a couple drops of food coloring.
2. Add your baking soda and stir well until it is all dissolved.
3. Add a small handful of popping corn kernels.
4. Add the vinegar and watch the corn start to hop up and down!

## Explanation:

When the baking soda and vinegar combine, they react to form carbon dioxide (CO<sub>2</sub>) gas. The gas forms bubbles in the water which circle around the corn kernels. The bubbles lift the kernels up to the surface. The bubbles increase the volume of the popcorn, but they contribute little to its mass. Therefore, the overall density of the popcorn is lowered which causes the popcorn to be carried upward by the more dense fluid surrounding it. Archimedes' Principle states the buoyant force exerted on a fluid is equal to the weight of fluid displaced. The popcorn now has a greater volume and displaced more water which causes the fluid to exert a great buoyant force. The buoyant force is what pushes the popcorn to the top of the liquid. When the popcorn kernels reach the surface, they pop and the kernels sink again. The "hopping" continues until the vinegar and baking soda have finished reacting.

# WHICH HAS THE MOST GLUTEN?



## Explanation:

When dough is kneaded, two proteins in wheat flour, gliadin and glutenin, form gluten. Flour also contains many other components—starch, lipids, sugars, and enzymes—that contribute to the consistency and nutritional value of bread. When water runs over the dough in this activity, most of these other substances wash away, isolating the gluten in the dough. In the oven, the steam produced as the gluten heats up expands the ball. Finally, the gluten hardens, and there is a finished gluten ball.

## Materials:

- Any combination of the following flours:
  - Whole wheat flour
  - Bread flour
  - All-purpose flour
  - Pastry flour
  - Gluten flour
  - Instant flour
- Water (1/2 to 3/4 cup for each flour)
- Bowls (one for each flour)

## Question:

Why is gluten so important?  
Do different flours have different amounts of gluten?

## Hypothesis:

Students will predict whether the same amount of gluten is produced from various types of flour.

## Experiment:

1. Into separate bowls, measure out 1 cup of each of the flours. Label each bowl.
2. Slowly add about 1/2 to 3/4 cup water to the flour in each bowl, and knead each mixture until it forms a soft, rubbery ball of dough. Let the dough balls sit for about 10 minutes.
3. In the sink, run cold water over one of the dough balls. Be careful not to let the dough disintegrate; try cupping your hands around the ball and squeezing gently to remove the starch. With low-gluten cake or pastry flours, you may want to put the dough in cheesecloth in order to hold it together.
4. The water will turn milky as it washes away the starch in the dough. Keep pouring out the cloudy water that collects in the bottom of the bowl. Slowly, the dough ball will become a gummy, slimy network of gluten strands.
5. When the water no longer becomes milky, there's no more starch in the dough, leaving nearly pure gluten. Notice how much smaller the ball has become—and how stretchy!
6. Repeat steps 3 to 5 for each of your flour types. How does the texture of each one differ as the starch is washed away? Does it take the same amount of time for each one? Are the gluten balls all the same size, or are some larger than others?
7. Bake the gluten balls in the oven for about 15–30 minutes at 450° F. Notice they have puffed up and hardened, which is exactly what happens to the gluten in a loaf of bread as it bakes.



# GAMES



**LEARN HOW TO  
PLAY HORSE, HAT,  
OR COWBOY  
DUEL ON PAGE 36**

# HORSE, HAT, OR COWBOY DUEL

## Materials:

- Two child-size cowboy hats
- Two small cowboy dolls or toys
- Two small plush toy horses
- One table with two chairs or benches

## How to Play:

1. Place one of each item/toy on each bench/chair at opposite sides of the table.
2. One player sits at each bench/chair so they are facing each other.
3. Players shout "One, Two, Three, Shoot!" then must immediately place one of their items/toys on the table.
  - a. "Horse" beats "hat" because the horse tramples the hat.
  - b. "Hat" beats "cowboy" because it goes on his head.
  - c. "Cowboy" beats "horse" because he rides the horse.
4. The player whose item/toy beats out his opponent's item/toy is the winner of the round.
5. You can play best two out of three rounds. For larger groups, split into two teams and have each team line up behind the current player. The next person plays each round in line. If they win, they go back to the end of their team's line. If they lose, they sit out of the rest of the game and cheer on their team.



# THE CATTLE DRIVE

## Materials:

- 50 brown, black, and white non-helium balloons (other color combinations work, too)
- “Cattle pen” made from a large play yard gate or cardboard boxes
- Stick horses (brooms or mops work, too)
- Timer or watch
- Notebook and pen

## How to Play:

1. Create a pen for the cattle on one side of the room or yard. This needs to be some kind of fence that will hold the balloons in.
2. Blow up all the balloons and tie them.
3. Scatter the balloons around the room, but not too close to or inside the pen.
4. Start one child at the end of your space furthest from the pen. They should have a stick horse to ride.
5. On “go!” the child tries to “drive” the balloons into the pen. They must ride their horse at all times and can only use their feet and legs to push the balloons toward the pen.
6. Each child gets two minutes to drive as many cattle as possible into the pen. When the child’s time is up, count the balloons and write the score in the notebook.
7. Reset the play area for the next child.
8. The child who gets the most cattle into the pen is the winner.





# COW, COW, BULL

**Materials:**

- No materials needed

**How to Play:**

Turn a classic game of "Duck, Duck, Goose" into a running with the bulls experience by having the person who is "it" say "cow" as he touches each person's head and "bull" when he picks the person who has to chase him.



# PIG PERSONALITY TEST

## Materials:

- Pens/pencils
- Paper

## How to Play:

1. Give each member of the group a piece of paper and a pen.
2. Allow five minutes to draw a pig.
3. Go over Pig Analysis as a group. Who drew at the top/middle/bottom? Go through each area. Were they accurate? Do they match the personality?

## Pig Analysis:

If the pig is drawn:

- Toward the top of the paper  
*You have a tendency to be positive and optimistic.*
- Toward the middle  
*You have a tendency to be a realist.*
- Toward the bottom  
*You have a tendency to be pessimistic and may be prone to behaving negatively.*
- Facing left  
*You have a tendency to believe in tradition and be friendly; you may also be prone to remembering dates well.*
- Facing Right  
*You have a tendency to be innovative and active, but may be prone to forgetting dates easily and may not have a strong sense of family.*
- Facing front  
*You have a tendency to be direct, and may enjoy playing the role of devil's advocate; you also are prone to neither fearing nor avoiding confrontational discussions.*
- With many details  
*You have a tendency to be analytical, but may also be prone to being cautious to the point that you struggle with trust.*
- With few details  
*You have a tendency to be emotional and to focus on the larger picture rather than focusing on details. You also have a tendency to be a great risk taker and may sometimes be prone to reckless and impulsive decisions.*
- With less than 4 legs showing  
*May indicate that you are living through a major period of change and as a result you may be prone to struggling with insecurities.*
- With 4 legs showing  
*You have a tendency to be secure and to stick to your ideals; however, others may describe you as stubborn.*
- With large ears  
*Indicates how good of a listener you are (the bigger, the better).*
- With a long tail  
*Indicates how intelligent you are (the longer, the better).*



# SLOPPING THE HOGS

## Materials:

- Bean bags suitable for tossing
- Cardboard box
- Drawing materials

## How to Play:

1. Draw a large picture of a pig on a piece of cardboard with its mouth wide open.
2. Draw and cut out the mouth to have a hole large enough to toss the bean bags through.
3. Place the box about ten feet away (adjust the distance for the age of the children) and give each child a chance to toss the bean bags into the pig's mouth.



# WHEN PIGS FLY

## Materials:

- No materials needed

## How to Play:

1. Have children stand in a group facing the leader. Make sure each child has enough room to flap their arms in a flying motion.
2. The leader faces the group and calls out, "Ducks Fly!" "Owls Fly!" "Pigs Fly!" and so on.
3. When an animal is named that can fly, the children should flap their arms. When an animal is named that cannot fly, the children should not flap their arms.



# TURKEY TROT

## Materials:

- Cards that spell out turkey
- Ball



## How to Play:

1. Get the kids into teams of 5-6 kids (this can vary but you don't want more than 6 on a team). Print out as many sets of the word turkey as you need. Each team needs a set. Students line up in their teams.
2. Start with the first person in line and have the kids place the ball between their knees and walk across the room and back without dropping the ball. Once completed the child picks up a turkey card.
3. The first child gives the next student in line a high five when they return and that student goes across the room.
4. Once the child has completed the race they sit down.
5. If there are less than 6 players some players may have to go twice.
6. Once all the turkeys have been collected the students must arrange the turkeys to spell out the word turkey.
7. The first team to have all their players sitting and turkey spelled wins.
8. The relay is done again but with variations. Variations can include but are not limited to – walking backward, walking sideways, or jumping with ball between the knees!
9. An overall team winner can be determined by the team that wins the most relays!



# TALK/TEACH PIG LATIN

## Materials:

- No materials needed

## How to Play:

1. To all words beginning with a vowel (a-e-i-o-u, add the syllable 'way' to the end of the word. 'Eat' becomes 'eatway,' and 'over' becomes 'overway.'
2. For words that begin with a consonant, move the first letter of the word and add it to the end-add 'ay' after the consonant.
3. Examples:
  - a. Man = Anmay
  - b. Cat = Atcay
  - c. Ice Cream = Iccway reamcay



# DO THE CHICKEN POKEY

**Materials:**

- No materials needed

**How to Play:**

*Sung to: "Hokey Pokey"*

You put your right wing in (put right fist under right arm-pit)

You take your right wing out

You put your right wing in

And you shake it all about.

You do the Chicken Pokey

And strut yourself around,

That's what it's all about!

Choice of additional verses:

"You put your left wing in..."

You put your chicken leg in...

You put your chicken beak in

You put your tail feathers in..."





# STUFF THE TURKEY



## Materials:

- One large paper bag
- Two small brown paper bags
- Scrap pieces of paper or newspaper
- Two pieces of white tissue paper
- Stapler
- Warm glue gun and glue sticks
- White paper for onions, brown paper for bread, green paper for celery

## How to Play:

1. Fold the top of the bag down toward the inside. Make the fold about four inches long.
2. Take the two front edges of the bag, and fold them in like you're wrapping a present.
3. Staple those two folds down.
4. Take your scrap pieces of paper and wad them up.
5. Stuff the bottom of the two small brown bags.
6. Place the ends of the white tissue paper down into the bags with only the end peaking out about one to two inches.
7. Twist the top of the bags around and glue or staple to secure.
8. Glue the turkey legs onto the big turkey bag.
9. Wad the pieces of paper up (the brown, white, and green) and glue them into balls.
10. Set the turkey up on a table, and stuff it!

# FARMER MAY I

## Materials:

- No materials needed

## How to Play:

1. Along the same lines as Mother, May I, the farmer will call out big steps, little steps, duck waddles, or bunny hops.
2. Each player then has to ask, "Farmer, may I?" to move forward.
3. If players forget to ask, they're sent to the starting line.
4. The first player to reach the farmer becomes the new farmer!





# WHEELBARROW RACES

## Materials:

- No materials needed

## How to Play:

1. Divide your guests into two groups.
2. Then, have one person be the “wheelbarrow” while another teammate “drives” the wheelbarrow across the finish line. The first team to get all their “wheelbarrows” across the finish line wins!







**DISCOVER HOW TO  
MAKE CHLOROPHYLL  
PAINTINGS ON  
PAGE 51**

# COFFEE GROUND BISON ART



## Materials:

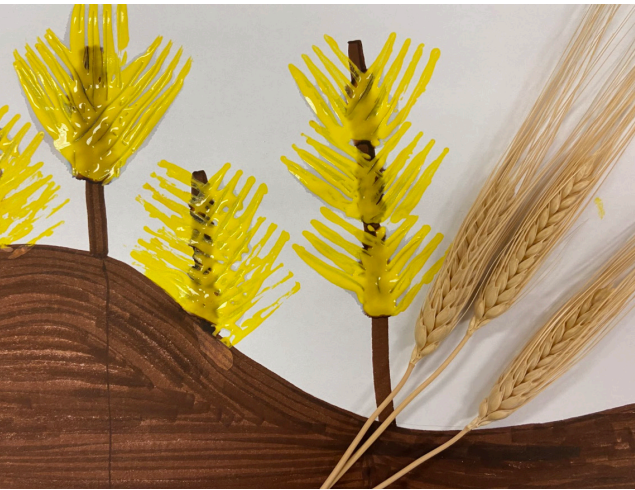
- Cardstock or similar heavy paper
- Construction paper in different colors
- Coffee grounds
- Acrylic or tempera paints
- Paintbrush
- Scissors
- Glue stick or craft glue

## Instructions:

1. Print and use a bison template, or draw your own.
2. Paint your bison with coffee grounds. Brush your bison with wet coffee grounds (add just enough water to make them wet – a little soupy, but not like actual coffee) until the template is completely covered. Set the back half of your bison aside while you continue to add layers of brushed-on coffee grounds to the front half. Keep adding layers until there is a nice contrast between the two halves of your bison (this gives the front a nice thick, furry look!). Set your bison aside to dry.
3. Use torn paper to create a landscape.
4. Glue your torn paper landscape layers down to create the background. Once the paint on each of your layers has dried, glue them down on top of each other.
5. Add your bison to the landscape. Gently tap your bison to brush off any excess coffee grounds. Use a glue stick to add your bison.
6. Add details. Finish up by drawing a little tail on and adding other details to your landscape. Use charcoal to smudge in a couple of areas of dark shadows to the bison as well!



# WHEAT STALK FORK PAINTING



## Materials:

- Foam brush
- Yellow & brown paint
- Fork
- Paper

## Instructions:

1. Paint the stalks of the wheat using the foam brushes.  
You can use the side of the brush, so it has a point at the top!
2. Pressing the fork down at a slight angle, make the wheat at the top of the stalks.
3. Paint the ground under the wheat stalks with yellow or brown paint.

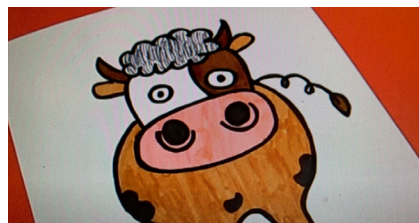
# DRAW A COW WITH THE WORD COW!

## Materials:

- Paper
- Pen or pencil

## Instructions:

Scan the QR code to watch the video on how to draw a cow with the word cow!



# CHLOROPHYLL PAINTINGS



## Materials:

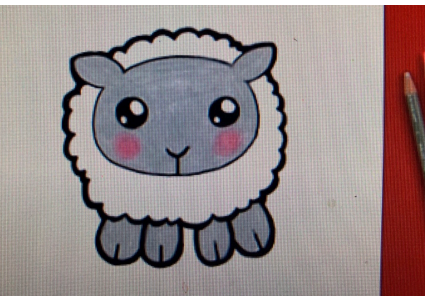
- 8-10 leaves
- 1 white sheet of paper
- Metal spoon

## Instructions:

1. Fold a sheet of white paper in half.
2. Place several leaves between the folded paper.
3. Press firmly on the leaves between the pages and rub with a metal spoon. Avoid plastic spoons as they break when pressed as firmly as necessary.



# DRAW A CARTOON SHEEP, PIG, AND CHICKEN



## Materials:

- Paper
- Pen or pencil

## Instructions:

Watch these videos and draw your own sheep, pigs, and chickens!



sheep



pig



chicken

# SOIL ART



## Materials:

- Soil (if possible, find samples in a diversity of colors)
- A surface to dry your soil
- Hammer or mallet to crush soil
- A sieve and/or pantyhose to sift soil
- Glue
- Water
- Cups and plates
- Watercolor paper
- Paintbrushes of any size

## Instructions:

1. Artists have used soil to provide color and texture in their art for as long as people have been making art.



◀ Begin your soil art exploration by scanning the QR code to check out examples of art made from soil created by the Cornell University Soil Health Lab.

On this page you will also find a collection of great videos of the artists working on their masterpieces.

2. Gather soil samples from your yard or schoolyard. Remove any large particles, matter, and soil life you find.
3. Dry soil completely on an old baking sheet or on plates. Once dry, crush the soil to make it as fine as possible. You can begin by using a large tool like a hammer or mallet. Then follow that up by sorting it with a sieve or even use something like pantyhose to get the smallest particles possible.
4. Mix your soil with glue and water until you get a consistency that resembles paint or a runny paste (add just a little bit at a time so that it does not become too runny).
5. Let the painting begin! Watercolor paper works well for your earthy paint.

# SALT DOUGH BEAN ART



## Ingredients for the salt dough:

- 2 cups flour
- ½ cup salt
- 1 tablespoon oil
- Approximately ½ to 1 cup water
- 3 teaspoons cream of tartar
- Approximately 50ml liquid starch
- Food coloring

## Instructions for the salt dough:

1. Put the flour, salt, oil, and cream of tartar in a bowl and mix.
2. Add the food coloring. The dough seems to lighten as it dries, so you may want to go for a slightly darker color.
3. Gradually add the water, so you end up with a dough that holds together.
4. Then add the liquid starch. The key to getting it super smooth seems to be the amount of time you spend working the liquid starch into the dough. As you work it, you can feel it becoming smoother.

## Materials for the salt dough bean art:

- Salt dough (as listed above)
- Beans (any kind or a mixture of beans will do!)

## Instructions for the salt dough bean art:

1. Using the dough you just created, flatten it out into a shape of your choosing.
2. Pick out your beans and press them into the dough, creating your design!



# NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.





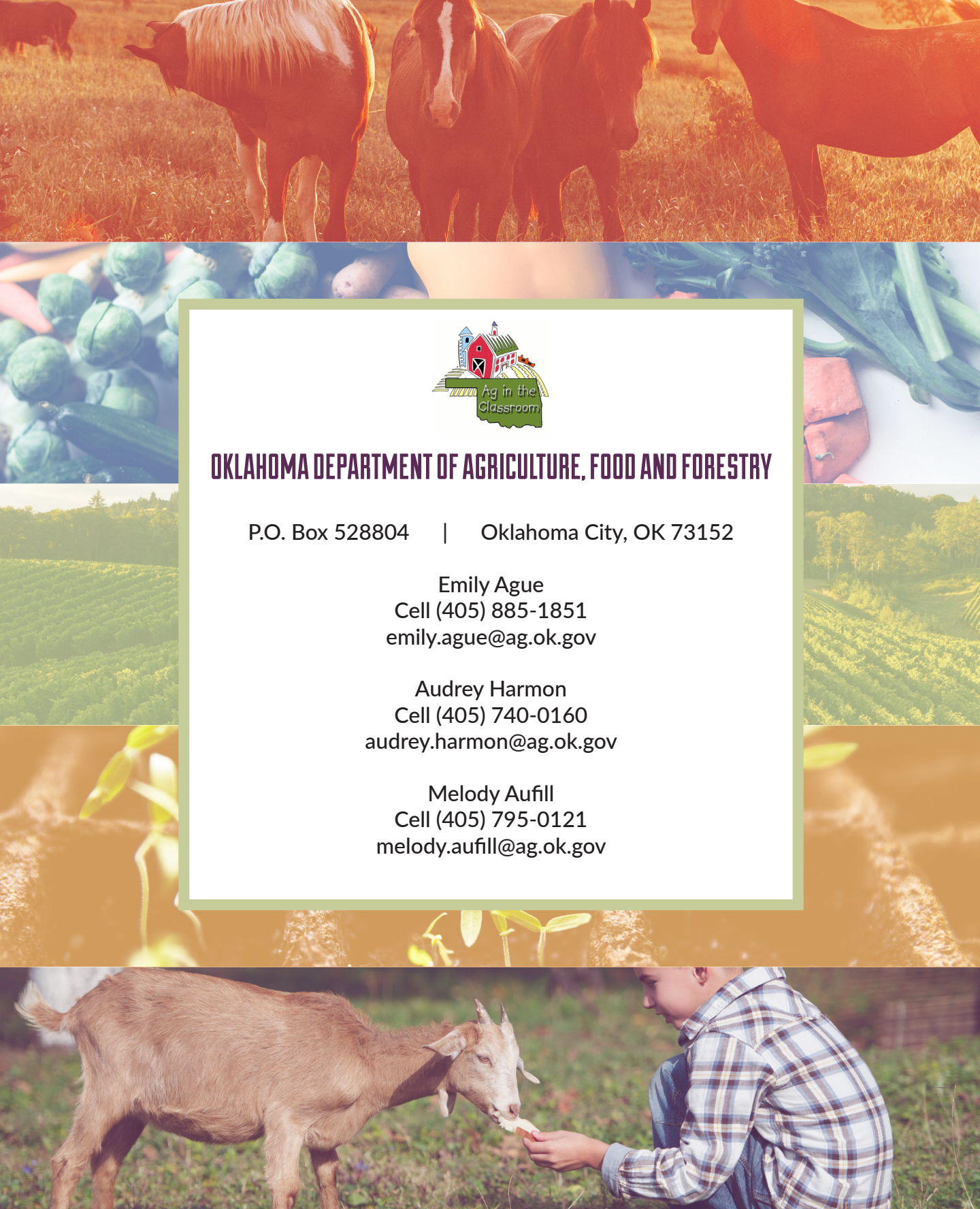
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