

TEST THE LIMITS

Students will explore science in new ways by predicting, testing, and experimenting with their supplies. Learning key science concepts will be fun and exciting as discoveries are made and games are played! While the lesson plan incorporates many different Pennsylvania Learning Standards, it focuses on the key learning area of "Science as Inquiry." Specifically, the students will learn to engage in activities that meet the PA Standard Areas of "Chemistry and Social-Emotional Learning."

SCHEDULE

DAY 1

ARRIVAL ACTIVITY	
READY, SET, LEARN	15 MINUTES
HANDS-ON ACTIVITY - KITCHEN OILS	20 MINUTES
BREAK/SNACK TIME	15 MINUTES
LET'S GET MOVING - PICNIC GAMES	30 MINUTES
HANDS-ON ACTIVITY - KITCHEN ACIDS	15 MINUTES
BREAK/LUNCH TIME	15 MINUTES
HANDS-ON ACTIVITY - SMELL TEST	30 MINUTES
SOCIAL-EMOTIONAL LEARNING - SODA HYPOTHESIS	30 MINUTES
HANDS-ON ACTIVITY - GUMMY BEAR CHEMICAL REACTIONS	30 MINUTES
WRAP UP/GOODBYES	15 MINUTES
LATE PICK-UP	

DAY 2

ARRIVAL ACTIVITY	
READY, SET, LEARN	15 MINUTES
HANDS-ON ACTIVITY - COLOR RUN	20 MINUTES
BREAK/SNACK TIME	15 MINUTES
LET'S GET MOVING - COLORED EGGS GAME	30 MINUTES
HANDS-ON ACTIVITY - RAINBOW CLOUD SLIME	15 MINUTES
BREAK/LUNCH TIME	15 MINUTES
HANDS-ON ACTIVITY - DYE AND HEAT	30 MINUTES
SOCIAL-EMOTIONAL LEARNING - COLOR EMOTION	30 MINUTES
HANDS ON ACTIVITY - BAKING SODA ABSTRACT PAINTING	30 MINUTES
WRAP UP/GOODBYES	15 MINUTES
LATE PICK-UP	

DAY₃

ARRIVAL ACTIVITY	
READY, SET, LEARN	15 MINUTES
HANDS-ON ACTIVITY - DISAPPEARING LIQUID	20 MINUTES
BREAK/SNACK TIME	15 MINUTES
LET'S GET MOVING - BLOB TAG	30 MINUTES
HANDS-ON ACTIVITY - FLOATING ICE MELT	15 MINUTES
BREAK/LUNCH TIME	15 MINUTES



HANDS-ON ACTIVITY - SOLID OR LIQUID?	30 MINUTES
SOCIAL-EMOTIONAL LEARNING - RESPECT	30 MINUTES
HANDS-ON ACTIVITY - BALLOON MAGIC	30 MINUTES
WRAP UP/GOODBYES	15 MINUTES
LATE PICK-UP	

DAY 4

ARRIVAL ACTIVITY	
READY, SET, LEARN	15 MINUTES
HANDS-ON ACTIVITY - RAIN EXPERIMENTS	20 MINUTES
BREAK/SNACK TIME	15 MINUTES
LET'S GET MOVING - FREEZE TAG WITH HAIL BALLS	30 MINUTES
HANDS-ON ACTIVITY - UNPREDICTABLE WEATHER REPORT	15 MINUTES
BREAK/LUNCH TIME	15 MINUTES
HANDS-ON ACTIVITY - SATELLITES	30 MINUTES
SOCIAL-EMOTIONAL LEARNING - RAIN, RAIN, GO AWAY	30 MINUTES
HANDS-ON ACTIVITY - WEATHER BALLOONS	30 MINUTES
WRAP UP/GOODBYES	15 MINUTES
LATE PICK-UP	

DAY 5

ARRIVAL ACTIVITY	
READY, SET, LEARN	15 MINUTES
HANDS-ON ACTIVITY - COIN PREDICTION	20 MINUTES
BREAK/SNACK TIME	15 MINUTES
LET'S GET MOVING - PROBABILITY RACE	30 MINUTES
HANDS-ON ACTIVITY - PREDICTING WEIGHT	15 MINUTES
BREAK/LUNCH TIME	15 MINUTES
HANDS-ON ACTIVITY - COIN FLIP BOARD GAME	30 MINUTES
SOCIAL-EMOTIONAL LEARNING - PREDICTING BAD SITUATIONS	30 MINUTES
HANDS-ON ACTIVITY - WATER TEST	30 MINUTES
WRAP UP/GOODBYES	15 MINUTES
LATE PICK-UP	



MATERIALS LIST

- Vegetable oil
- Food dye
- Antacids
- Citric acid
- Jars
- Straws
- Spoons
- Duct Tape
- Small balls
- Aluminum baking tins
- Shaving cream (unscented)
- Apples
- Bananas
- Avocados
- Lemons
- Bowls
- Paper towels
- Potent smelling recognizable items
- Containers with lids
- Paper (blue, assorted)
- Pencils
- Soda bottles (assorted flavors)
- Granular sugar
- Measuring cups
- Cups
- Gummy bears
- Salt
- Baking soda
- Milk
- Gelatin
- Flavored gelatin mixture
- Microwave or hot plates
- Silicone molds
- Dish soap
- Cotton swabs
- Resealable plastic bags
- Rubber gloves
- Cornstarch
- Hair conditioner (unscented)
- Oven mitts

- Natural dye supplies such as red onion skins, red beets, grapes, red cabbage, avocado skins or weeds
- Pre-washed white rags or bandanas
- Tempera paint
- Paintbrushes
- Spritz bottles
- White vinegar
- Eye protection
- Gloves
- Top hat, tall hat, or opaque bags
- Diapers (any brand)
- Tray
- Ice
- Thin string
- Craft sticks
- Colored pencils
- Cardstock
- Tacky glue
- Items to make a balloon float such as a hair dryer, bike pump, electrical fan, or hand fan
- Lightweight balls or balloons
- Recycled plastic bottles
- Scissors
- Rulers
- Scrap paper
- Clear tape
- Cotton balls
- Glue
- Watercolors
- Crayons
- Staples
- Multimedia player
- Dice
- Markers
- Book: If You Give a Pig a Pancake by Laura Numeroff
- Coins (pennies, nickels, quarters)
- Eye droppers
- Optional: weather balloon
- Optional: waterproof tape



SHOPPING LIST



DAY 1 – KITCHEN CHEMISTRY



ACTIVITY/CONCENTRATION

EARLY DROP OFF - ARRIVAL ACTIVITY

During their free time, students select and use toys or games associated with the daily theme.



DURATION/SCHEDULE

180 minutes - 6 to 9 a.m.



ACTIVITY/CONCENTRATION

READY, SET, LEARN

The class discussion is about chemistry in the kitchen:

Fun Facts:

Is cooking science? Yes! Cooking is using chemicals (ingredients) and a process such as cooling or heating (refrigerator or stove) to create a chemical reaction! Kitchen substances come in oils, acids, and proteins.

- Acids are in the kitchen in the form of citruses, and vinegar.
- Oils or fats separate. They don't bind to other chemicals.
- Proteins break down with other chemicals.

Acids: Water acts as a barrier, or a mask, and an acid helps to delay chemical reactions to your fruit. Oxidation happens when fruits or vegetables are exposed to oxygen (air) and can quickly turn your fruits and vegetables colors, often to an ugly brown. Not only is brown an "unappealing" color, but oxidization makes your fruit slimy and will eventually rot fruit.

Oils: Oils are found in plants, animals or manmade. Oil can withstand high temperatures, unlike water. Oil comes from olives, sesame seed, avocado, corn, coconut, soy, flaxseed, safflower, sunflower, nuts, or beans. Oils are usually used to fry foods, or to create flavor to foods.

Proteins: Proteins provide textures to foods, as in yogurt and eggs. Proteins are needed to balance a healthy diet. Protein comes in different categories, seafood, meats, dairy, and nuts.



