

MONDAY

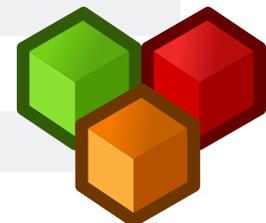


S.T.E.M. WEEK

SCIENCE, TECHNOLOGY,
ENGINEERING & MATH

EDUCATIONAL FOCUS:
MATH

6:30-8:00 A.M.	CHECK IN, BREAKFAST & QUIET TIME (MOVIE, DRAWING, COLORING AND BLOCKS)	
8:00-8:10 A.M.	BATHROOMS & SUNSCREEN	
8:10-10:20 A.M.	<u>TORNADO IN A BOTTLE</u>	
10:20-10:30 A.M.	WASH HANDS, REFILL WATERS	
10:30-11:00 A.M.	MORNING SNACK	
11:00-11:50 A.M.	INDOOR PLAY & EDUCATIONAL ACTIVITIES	
11:50-12:00 P.M.	WASH HANDS	
12:00-12:45 P.M.	LUNCH	
12:45-1:00 P.M.	BATHROOM/WATER REFILL	
1:00-1:30 P.M.	QUIET TIME (COLORING CONTEST)	
1:35-2:00 P.M.	<u>SHINY PENNIES</u>	FORT BUILDING WITH MATS
2:05-2:30 P.M.	FORT BUILDING WITH MATS	SHINY PENNIES
2:35-3:00 P.M.	<u>HUMAN CATAPULTS</u>	MARBLE RUN
3:05-3:30 P.M.	MARBLE RUN	HUMAN CATAPULTS
3:30-4 P.M.	SNACK	
4:00-6:00 P.M.	QUIET TIME (BOARD GAMES, CARDS, COLORING)	



Catapult is a fun, energizing game that focuses on multiple fitness components and creativity. I first saw this game on Twitter from another PE teacher who I could not find again, so just wanted to give a shout out if you are reading this, thank you! I modified this game to make my students more successful within their skill-set. I used this game during our “Health and Wellness” week while we discussed fitness components and nutrition.

Equipment:

- 28 Bowling pins (14 on each side)
- 10 Cones
- 4 Mats
- 12 Gator Skin balls

Set-Up:

- Split the gym with 10 cones down the half court line
- 14 pins set-up on each baseline
- 2 mats behind the cones on each side
- Gator Skin balls can be tossed on each side

3. SHINY PENNIES

If you find a penny, pick it up...then pour a heap of salt on it, douse it with vinegar and watch a chemical reaction unfold. Now you have a pretty penny (without spending one). In this science experiment, the salt and vinegar combine to form a weak acid and when this solution meets the ruddy copper of a well-loved penny, the metal oxides are dissolved and a shiny new coin is revealed. For more advanced chemistry lessons, check out Exploratorium for detailed instructions and variations on this theme.

12. MAKE A MARBLE RUN

Sure you can buy a marble run kit but where's the fun in that? Instead, get your young one's wheels turning with a DIY challenge: create a marble run out of recyclable materials...go! Depending on the age of your child, you might need to lend a helping hand (with scissors and tape) but the gist of this activity is that your mini can explore physics with ingenuity and patience. With nothing more than strong tape (duct or packaging will work) and toilet paper tubes, she can send a bouncy ball zipping through some serious chutes and curves. Those false starts along the way? That's engineering.



TUESDAY



S.T.E.M. WEEK

EDUCATIONAL FOCUS:
SCIENCE

6:30-8:00 A.M.	CHECK IN, BREAKFAST & QUIET TIME (MOVIE, STORY WRITING & BLOCKS)
8:00-8:10 A.M.	BATHROOMS & SUNSCREEN
8:10-10:20 A.M.	OUTDOOR PLAY (LADDER GOLF, SOCCER, OUTDOOR BOWLING)
10:20-10:30 A.M.	WASH HANDS, REFILL WATERS
10:30-11:00 A.M.	MORNING SNACK
11:00-11:50 A.M.	INDOOR PLAY & EDUCATIONAL ACTIVITIES
11:50-12:00 P.M.	WASH HANDS
12:00-12:45 P.M.	LUNCH
12:45-1:00 P.M.	BATHROOM/WATER REFILL
1:00-1:30 P.M.	QUIET TIME (MOVIE, BOOKS & CARDS)
1:35-2:00 P.M.	<u>HOW CLOUDS MAKE RAIN</u>
2:05-2:30 P.M.	BALLOON CHALLENGE
2:35-3:00 P.M.	
3:05-3:30 P.M.	CUP STACKING
3:30-4 P.M.	SNACK
4:00-6:00 P.M.	QUIET TIME (BOARD GAMES, CARDS, COLORING)



What Are Clouds?

Clouds are a collection of very tiny water droplets or ice crystals that float in the air together. They are able to float because they are so small and light.

Near the ground, moisture in air is in the form of water vapor, and clouds are formed when that warm air rises, expands, and then cools. The cooler air can't hold as much vapor, so the moisture condenses around dust particles in the atmosphere, then come together.

Types Of Clouds

There are different types of clouds. Each has a different altitude and appearance.

Cirrus Clouds

These are the most common high altitude (above 18,000 feet) clouds. They are thin, wispy, and made of ice. They are usually white, and kids can use them to predict fair to pleasant weather.

Cirrostratus Clouds

These are sheet-like, cover the sky, and usually appear 12-24 hours before rain. While they cover the sky, the sun can still be seen through them.

Cirrocumulus Clouds

These appear as small puffs in a long row covering the sky — almost like the scales of a fish. They're usually seen in the winter and indicate fair, but very cold, weather.

Altostratus Clouds

These mid-level (6,500-18,000 feet) clouds are gray or blue-gray, and are made up of ice crystals and water droplets. They fill the whole sky and usually form just ahead of continuous rain or snow.

Alto cumulus Clouds

These are gray puffy masses made up of water droplets. They form in groups, and when you see them in the mornings in the summertime, prepare for thunderstorms in the afternoon or evening.

Stratus Clouds

These cover the sky like fog that doesn't reach the ground, are gray, and produce a light drizzle or mist.

Stratocumulus Clouds

These clouds are low, puffy, and gray. They form in rows with blue sky showing through, and rarely produce rain.

Nimbostratus Clouds

These are wet looking and dark gray. They form in a layer that produces steady falling rain.

Cumulus Clouds

White and puffy, these look like cotton candy and indicate fair weather. These clouds can eventually tower upwards to form cumulonimbus clouds.

Cumulonimbus Clouds

These are thunderstorm clouds. High winds flatten the top of them. These clouds produce heavy rain, hail, thunder, lightning, and can even develop into tornadoes.

How Clouds Make Rain

When water droplets and ice crystals continue to collect in a cloud, they get heavier and heavier. They will eventually become too heavy to float on the air. Water droplets will fall to the earth as rain.

You can easily show this to your kids with a few simple materials. You'll need shaving cream (use the foam kind, not gel), a jar, water, and food coloring.

- 1.Fill the jar almost to the top with water.
- 2.Cover the top with a "cloud" of shaving cream.
- 3.Let your child drop food coloring into the cloud until the color starts "raining" into the water below. Explain that this is how rain works too. The water collects in the cloud until there is too much, and then it leaks through, forming rain.

If you're anything like my kids and my husband, this is a perfect way to sneak a little science in as you explore the skies in the summer.

- Watch the show as lightning lights up the sky during your next storm.
- Chat with your kids throughout the day as you watch the clouds morph and change, and eventually tower.
- Then stand back and watch the skies erupt.
- Point out the cotton candy cumulus clouds on your next walk, and comment on the fairness of the day.

Bouncy Ball Kit in tub

Magic Balloon:

In our first bottle, we poured in about an inch of warm water and then dumped in the entire packet of yeast. We swirled the yeast around a bit and then added the teaspoon of sugar and gave it another good swirl. We put the balloon over the mouth of the bottle and then let it sit in the sun.

It only took about five minutes for the yeast to start bubbling and our balloon to start inflating! “Ew, what is it?” C asked, looking at the foam that was starting to bubble. “Yeast is a type of bacteria, so it’s actually a living thing,” I explained. “It’s eating the sugar that we added and when it eats the sugar, it creates a gas called carbon dioxide that makes all those bubbles. That carbon dioxide is filling up the balloon.”

In our second bottle for this balloon science experiment, we poured a couple inches of vinegar. We prepped the balloon by using the funnel to fill half of it with baking soda. I put the balloon over the mouth of the bottle and then C dumped in the baking soda. The effect was instantaneous and the balloon quickly inflated as the bicarbonate baking soda reacted with the acetic acid in the vinegar making carbon dioxide.

Our third bottle was half filled with Diet Coke. I liked the Diet Coke because it didn’t leave a sticky mess, but any soda would work. We found that we got a better reaction if we opened a fresh bottle and poured out the soda we didn’t want rather than pouring soda into an empty bottle — I think it stayed better carbonated.

To prep this balloon experiment, we dumped a pack of Pop Rocks into it. I stretched the balloon over the mouth of the bottle and C dumped them into the Diet Coke.

This one was definitely the noisiest! You could hear all the popping going on in the bottle as the Pop Rocks released their pressurized carbon dioxide.

For the last bottle, we filled half of it with Diet Coke again. We put two Mentos in the balloon, stretched it over the mouth of the bottle, and then dumped them into the Coke.

We actually ended up doing this experiment twice because the first time we didn’t have enough soda in the bottle so it produced a pretty weak reaction. Half a bottle seemed to work just fine and the Mentos were a great catalyst, causing the Diet Coke release its carbon dioxide.

2 CLEAN BOTTLES

YEAST

A TEASPOON OF SUGAR

VINEGAR

BAKING SODA

A PACKET OF POP ROCKS CANDY

A ROLL OF MINT MENTOS

A COUPLE BOTTLES OF SODA

A FUNNEL

AND BALLOONS {YOU’LL WANT THE BIG, REGULAR-SIZED BALLOONS RATHER THAN WATER BALLOONS.}

Leak proof Bag

Fill the bag with water and seal it up tight.

Hold the bag up and tell the kids to poke a pencil through. Some might hesitate, but go ahead and tell them to go for it. If they don't poke the pencil through with confidence, it might still leak.

Poke the pencil through both sides of the bag.

It doesn't leak!

When the pencils are removed, a shower of water leaks out. Use this water to play in, or use it to water the garden!

- SHARP PENCILS
- PLASTIC BAGGIE
- WATER



PACK YOUR SWIMSUIT, TOWLE, AND SWIM GEAR AS WE HEAD TO THE POOL

WEDNESDAY



S.T.E.M. WEEK



EDUCATIONAL FOCUS:
SCIENCE

6:30-8:00 A.M.	CHECK IN, BREAKFAST & QUIET TIME (MOVIE, DRAWING ANIMALS, GAMES)
8:00-8:10 A.M.	BATHROOMS & SUNSCREEN
8:10-10:20 A.M.	<u>MAKE A VOLCANO</u>
10:20-10:30 A.M.	WASH HANDS, REFILL WATERS
10:30-11:00 A.M.	MORNING SNACK
11:00-11:50 A.M.	INDOOR PLAY & EDUCATIONAL ACTIVITIES
11:50-12:00 P.M.	WASH HANDS
12:00-12:45 P.M.	POOL
12:45-1:00 P.M.	DAYS
1:00-1:30 P.M.	ROCK!!
1:35-2:00 P.M.	GARBAGE BALL
2:05-2:30 P.M.	FORT BUILDING CHALLENGE
2:35-3:00 P.M.	CLEAN UP
3:05-3:30 P.M.	SCIENCE EXPIREMENTS INSIDE (SEE TOTE)
3:30-4 P.M.	SNACK
4:00-6:00 P.M.	QUIET TIME (BOARD GAMES, CARDS, COLORING)





THURSDAY



S.T.E.M. WEEK

EDUCATIONAL FOCUS:
ENGINEERING & ART

6:30-8:00 A.M.	CHECK IN, BREAKFAST & QUIET TIME (MOVIE, GAMES & JOURNALING)	
8:00-8:10 A.M.	BATHROOMS & SUNSCREEN	
8:10-10:20 A.M.	OUTDOOR PLAY	
10:20-10:30 A.M.	WASH HANDS, REFILL WATERS	
10:30-11:00 A.M.	MORNING SNACK	
11:00-11:50 A.M.	INDOOR PLAY & EDUCATIONAL ACTIVITIES	
11:50-12:00 P.M.	WASH HANDS	
12:00-12:45 P.M.	LUNCH	
12:45-1:00 P.M.	BATHROOM/WATER REFILL	
1:00-1:30 P.M.	QUIET TIME (MOVIES, BOOKS & CARDS)	
1:35-2:00 P.M.	TISSUE PAPER PAINTING	BALLOON ROCKET
2:05-2:30 P.M.	BALLOON ROCKET	TISSUE PAPER PAINTING
2:35-3:00 P.M.	MARSHMALLOW CATAPULT	DIY ICECREAM
3:05-3:30 P.M.	DIY ICECREAM	MARSHMALLOW CATAPULT
3:30-4 P.M.	SNACK	
4:00-6:00 P.M.	QUIET TIME (BOARD GAMES, CARDS, COLORING)	



You will need:

- 4 oz of milk
- 4 oz of cream
- 1/4 tsp of vanilla (or use other flavors usually found near the vanilla in a grocery store – you can use chocolate syrup for chocolate ice cream)
- 4 tsp of sugar
- A few drops of food coloring (optional – if you want colorful ice cream)
- Lots of ice
- Lots (half cup) of salt. Rock salt (sold at hardware stores) works best.
- Small (quart size) zip-lock freezer bag
- Large (gallon size) zip-lock freezer bag

What to do:

1. Put the milk, cream, flavoring, coloring, and sugar into the SMALL zip-bag and zip it shut (be sure it is zipped up and closed completely)
2. Put about a cup of ice into the large bag and then cover the ice with a small handful of salt. Put the small bag with your ingredients into the larger bag.
3. Add some more ice and then some more salt. Keep adding salt and ice until the bag is almost full.
4. Zip it shut (be sure it is zipped) and then carefully hold opposite sides of the bag and shake the bag back and forth (like you're steering a car) for about 5-8 minutes.
5. Open the larger bag and take out the smaller bag – it should be full of ice cream! Rinse off the bag under running water to remove any salt that may be near the opening of the bag.
6. Open and enjoy!

The Science of Ice Cream

When you added salt to the ice, the chemistry between the two forced the ice to melt. Before the ice could melt though, it needed to borrow heat from objects that surround it. This is called an ENDOTHERMIC process. Since your ingredients are not as cold as the ice, it borrowed heat from your ingredients making them colder! When they get colder, they freeze up into ice cream. Yum!

Tissue paper craft:

Instructions:

- Choose whether you'd like to use the crayon resist for your project. If so, first you will draw a design (words, patterns, etc) with white crayon on the watercolor panel. This design will show up after you apply the squares. NOTE: Because you are drawing white on white, your drawing won't be visible until the final step.
- Pre-wet the watercolor panel by spraying it with a spray bottle filled with water. You can also choose to use a paintbrush if you'd like.
- Apply the tissue paper squares randomly or in a planned arrangement. We recommend spraying or painting some more water over the squares to accelerate the color "bleeding".
- For best results, allow the water to dry before removing the squares.
- Once you remove the squares, the color will have transferred onto the watercolor panel, revealing your drawing and the color from the squares!

Materials:

- Tissue paper squares
- Watercolor panel
- Water
- Spray bottle (or paintbrush)
- Crayon (optional)

BALLOON ROCKET:

- 1 balloon (round ones will work, but the longer “airship” balloons work best)
- 1 long piece of kite string (about 10-15 feet long)
- 1 plastic straw
- tape

1. Tie one end of the string to a chair, door knob, or other support.

2. Put the other end of the string through the straw.

3. Pull the string tight and tie it to another support in the room.

4. Blow up the balloon (but don't tie it.) Pinch the end of the balloon and tape the balloon to the straw as shown above. You're ready for launch.

5. Let go and watch the rocket fly!

So how does it work? It's all about the air...and thrust. As the air rushes out of the balloon, it creates a forward motion called THRUST. Thrust is a pushing force created by energy. In the balloon experiment, our thrust comes from the energy of the balloon forcing the air out. Different sizes and shapes of balloon will create more or less thrust. In a real rocket, thrust is created by the force of burning rocket fuel as it blasts from the rockets engine - as the engines blast down, the rocket goes up!

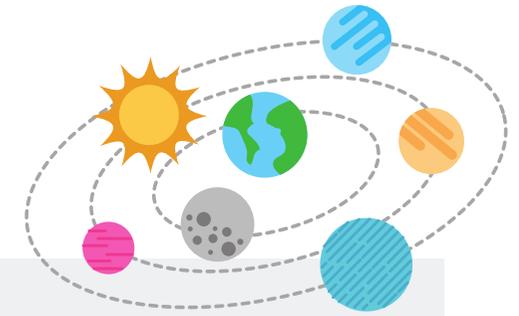
The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Does the shape of the balloon affect how far (or fast) the rocket travels?

2. Does the length of the straw affect how far (or fast) the rocket travels?

3. Does the type of string affect how far (or fast) the rocket travels? (try fishing line, nylon string, cotton string, etc.)

4. Does the angle of the string affect how far (or fast) the rocket travels?



FRIDAY

EDUCATIONAL FOCUS:
SPACE

S.T.E.M. WEEK

6:30-8:00 A.M.	CHECK IN, BREAKFAST & QUIET TIME (MOVIE, CARDS, OCEAN ANIMAL CREATION)
8:00-8:10 A.M.	BATHROOMS & SUNSCREEN
8:10-10:20 A.M.	PARK PLAY
10:20-10:30 A.M.	WASH HANDS, REFILL WATERS
10:30-11:00 A.M.	MORNING SNACK
11:00-11:50 A.M.	INDOOR PLAY (INCLUDING BOOTCAMP OBSTACLE COURSE)
11:50-12:00 P.M.	WASH HANDS
12:00-12:45 P.M.	LUNCH
12:45-1:00 P.M.	BATHROOM/WATER REFILL
1:00-1:30 P.M.	QUIET TIME (INDEPENDENT READING, STORY TIME, WRITING & DRAWING)
1:35-2:00 P.M.	DOWNSTAIRS GAMES
2:05-2:30 P.M.	TUMBLING CLASS
2:35-3:00 P.M.	PAPER AIR PLAIN CHALLENGE
3:05-3:30 P.M.	
3:30-4 P.M.	SNACK
4:00-6:00 P.M.	QUIET TIME (MOVIE, BOARD GAMES, CARDS, COLORING)



10. PAPER AIRPLANES

Back in the day, folding a piece of paper into an airplane was a fun way to pass a note in class. But did you know your crafting mischief was actually a lesson in physics? Paper airplanes teach children the four basic concepts of aerodynamics—lift, thrust, drag and weight—through trial and error. But we aren't just talking about the hit and miss that happens when your two-year-old crumples up his artwork, tries to throw it at you and misfires. Help your child follow one of these tried-and-true patterns and she'll learn all about precision and patience, too.

Tornado:

- Start with two empty, plastic soda bottles. Smaller size bottles work well for smaller hands, but the Twister Tube works on most sizes of plastic soda bottles. Make sure the bottles are the same size.
- Fill one bottle 2/3 full with water, attach the twister tube. If you don't have a Tornado tube, skip ahead to step #4 for instructions.
- Attach the second bottle to the other end of the Twister Tube. Make sure that the bottles are screwed on securely so that the water does not leak.
- If you do not have a Twister Tube, place a metal washer on top of the bottle with water. Turn the empty bottle upside down and align the openings of the two bottles. Connect them by wrapping them tightly with duct tape.
- Quickly turn the bottle over and set it on a table or desk so it's standing vertically. A few drops of water might fall into the lower bottle, but not much. Start moving the Twister Tube in a circle, as if you were stirring something on the stove. At some point, a twister (called a vortex) will form and water will start spiraling into the lower bottle. It looks just like a tornado!

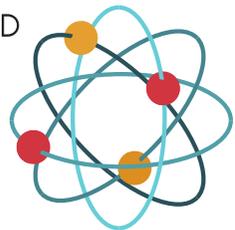
**SOLAR SYSTEM FOR KIDS FROM PLANET TO PLANET FOUND
ON YOU TUBE**



S.T.E.M. WEEK

THEMED MOVIES	THEMED BOOKS	CHALLENGE ACTIVITIES
JIMMY NEUTRON	<u>AFRAID OF THE DARK</u>	ANOTHER OPTION FOR THIS
WALL-E	<u>WHAT CAN I BE: STEM CAREERS</u>	WEEK IF YOU HAVE KIDS WHO
LEGO MOVIE	<u>RICKY THE ROCK THAT COULDN'T ROLL</u>	LOVE ART IS TO MAKE IT
BIG HERO 6	<u>STICKS</u>	S.T.E.A.M. WEEK AND ADD 'ART'.
RALPH BREAKS THE INTERNET	<u>HUMAN BODY ACTIVITY BOOK</u>	CRAFTS CAN BE INEXPENSIVE,
ECHO	<u>LEGO BOOKS</u>	TIME CONSUMING AND A TON
MEET THE ROBINSONS	<u>FORCES</u>	OF FUN.
OUR TIPS FOR STEM WEEK:		

THIS WAS AN EASY WEEK TO ADD IN ANY OF THE ACTIVITIES YOU FOUND FOR OTHER WEEKS THAT YOU MAYBE DIDN'T HAVE TIME TO DO. (CONSIDER RE-DOING ACTIVITIES THE KIDS LOVED EVEN!) WE FOUND THAT THEY LOVED FORT-BUILDING WITH THE MATS. WE JUST HAD TO SET A FEW GROUND RULES SUCH AS, "DON'T FOLD MATS WHEN THEY'RE NOT MEANT TO BE FOLDED." THEY ALSO USED EQUIPMENT TO SEE HOW HIGH OF A TOWER THEY COULD BUILD AND LOVED THAT!



Important Links:

<https://www.summercamppro.com/mad-science/>

<https://sciencebob.com/>

<https://www.stevespanglerscience.com/>

<https://www.purewow.com/family/stem-activities-for-kids>