

Science Talk

Experimental Kids





저자의 말

안녕하세요. 맛있는 영어 젤리스쿨입니다.

타 교육업체들이 자체교재들을 제작하고 있다고 할 때, “시중에 좋은 교재가 많은데 왜 만들어?” 라는 생각을 했습니다.

하지만 시중 교재로 수업을 하기에는 부족한 부분이 계속 보이더라고요. 특정 교재는 양이 너무 적기도 했고요.

그래서 스피킹에 가장 적합한 포맷으로 1차적으로 20여종의 교재를 직접 만들게 되었습니다.

2024년 9월에 출시한 20종의 교재는 모두 그림묘사를 활용하여, 학생의 수준에 맞춘 수업이 가능한 교재니, 많은 관심 부탁드립니다.

젤리스쿨 소개

젤리스쿨은 영유재학생, 졸업생들의 눈높이에 맞는 화상영어수업 제공을 위해 2022년 설립된 프리토킹에듀에서 런칭한 프리미엄 교육브랜드로 미국, 남아공 등 영미권 원어민 강사들로만 수업을 제공하고 있습니다.

온라인으로만 진행하는 화상영어의 틀에서 벗어나, 2024년 여름 국내영어캠프를 시작으로, 오프라인 행사를 지속적으로 진행하고 있으며, 화상영어 사업 이외에도, 출판, 영상제작, 온라인스쿨등의 교육과 관련된 사업을 추진하고 있습니다.

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Unit 1:

Playing with Magnets

Science Talk

• Experimental Kids •

How does it work?

Be creative!



[Video Link]

Activity 1

Activity 2

Activity 3

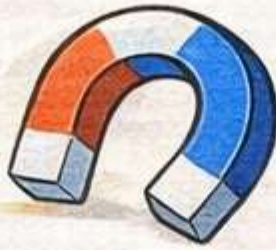
Activity 4

Activity 5

Activity 1: Guess and Talk

Learn and predict. Circle the things you think will stick to a magnet.

What sticks to a magnet?



magnet



paperclip



key



plastic



Let's guess what will happen!



Love

Will it stick to a magnet?

☒ Yes

☒ No

Can you find anything else that you think sticks to a magnet?

Activity 2: Test the Items

Watch the video. Which things stick to Momo's magnet?
Check the answers below!



Watch this video:

[Video Link]

Check what items stick to the magnet:

- | | | | | |
|--|---|---|----------------------------------|-------------------------------|
| ☒ magnet | ☒ paperclip | ☒ key | ☐ plastic | ☐ nail |
| ☐ scissors | ☐ spoon | ☐ spoon | | ☐ coin |

What did you notice?



1. What did you see happen?
2. Why did those things stick to the magnet?
3. What did not stick to the magnet?

Activity 3: Let's Experiment!

Try it with Momo! Make a magnet stick 5 paperclips together to make a chain.



Let's make a paper clip chain!



1 Get 5 paper clips and a magnet.



2 Touch one paper clip with the magnet.



3 Touch another paper clip to the first one.



Draw your paper clip chain!

How long can you make it?

Why do magnets stick paper clips together?



How many paper clips long was your chain? _____

What did you learn? _____

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 4: What Did We Learn?

Let's think together! How do magnets make a paper clip chain?
Answer the questions with your friends.



How does a magnet make paper clip chain?



Where do we use magnets in real life?



Can make a paper clip chain longer?



Why do magnets stick paper clips together?

Where can you find magnets in your home?

Try this! Connect as many paper clips as you can. Can you make a longer chain? What happens if you use a bigger magnet?

Let's test it!



Draw your paper clip chain!

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 5: Create Your Own Challenge!

Design a new experiment. Pick objects and solve a magnet challenge!

Make up your own experiment with magnets!

What can your magnet push or pull?

Set a challenge with your magnet!

Be creative!



Brainstorm and draw your experiment:

My Experiment: _____

Materials: _____

Can your magnet... _____

Draw your experiment!



Let's test it!



Will it work? Yes ☐ No ☐

Test your idea! What happened? _____

Was your challenge easy or hard? ☐ Easy ☐ Hard

How could you make it different? _____

Draw your paper clip chain!

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Unit 2

Making a Rainbow

★ Experiment ★



Learn about mixing colors to make a rainbow!

Activity 1

Activity 2

Activity 3

Activity 4

happy
sad
fine
great
great

Look. Say.

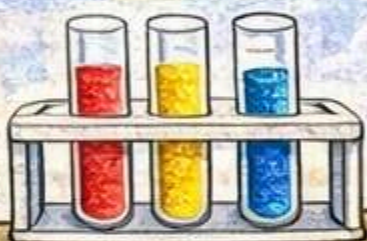
Activity 1

Guess and Talk

Learn and predict. What do you think will happen?

Learn and predict.
What do you think will happen?

Let's make a guess first!



test tubes

paper towels

+

glasses

+

food coloring

What happens if
we mix colors?

Let's make a
guess first!

What colors will we make by mixing?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

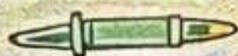
Activity 2



Test the Experiment



Watch the video. What happens when we mix colors? Check the answers



What do you see?

☐ New colors formed

☐ The colors stayed

☐ The colors mixed

What surprised you the most?

What do you think happened?

Activity 1

Activity 2

Activity 3

Activity 4

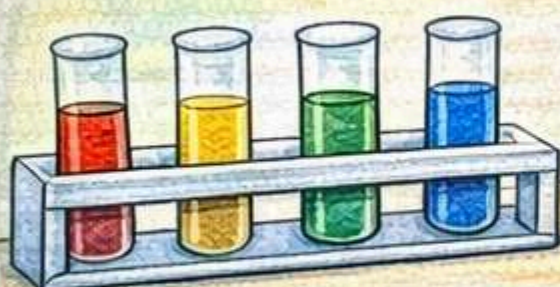
Activity 5

Activity 3

Let's Experiment!

Try it with Momo!
Let's do the rainbow experiment!

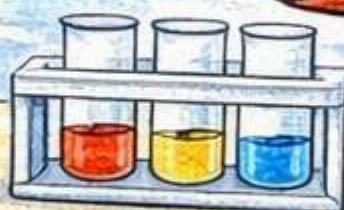
Materials:



test tubes



glasses



paper towels

food coloring



1. Fill the test tubes with red, yellow, and blue water

2. Add red, yellow, and blue to the glasses

3. Put paper towels across the glasses

4. Watch new colors form!



What new colors did you see?

Activity 4

What Did We Discover?

Look at the colors we made!



Red

Yellow

Blue

New Colors!

Orange

Green

Purple



How did we make new colors?



Red

+

Yellow

=



Yellow

+

Blue

=



Blue

+

Red

=



What colors did you get?



+



→



+



→



+



→



What else can you create?



Try mixing
different colors!

What did you learn?

- ☒ Mixing colors makes new colors.
- ☒ Red, Yellow, and Blue are primary colors.



Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Unit 3

Water and Color Experiment

Try it with Momo!
Let's do the rainbow experiment!



Have fun mixing colors in water!



Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 2



Test the Experiment



Watch the video. What happens when we mix colors?
Check the answers below!

What the video.
What do you think
will happen?



What do you see?

☐ New colors formed

☐ The colors mixed

What surprised you the most?

What do you think happened?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 3

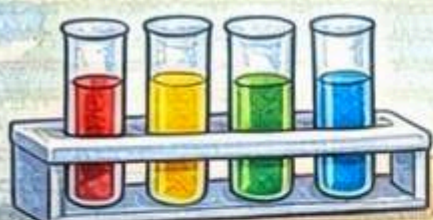


Let's Experiment!



Try it with **Momo!** Let's mix colors in water!

Materials:



test tubes



glasses



1. Fill the glasses with water



2. Add food coloring to each glass.



red, yellow, blue.

3. Get ready to mix colors!



Grab two droppers!



Make a guess! What will you see?

4. Mix red and yellow!



5. Mix yellow and blue!



What colors did you make?

6. Mix red and blue!



What colors did you make?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 4

Water and Color Mix

Experiment

Activity 3: Let's Experiment!

1. Fill Glasses with Water



Glass A Glass B Glass C

2. Color the Water



Red A Yellow B Blue C

3. Mix Colors Together



Fold a paper towel so chimping fillls
Dal F. G and b slwl f be white.

4. Mix Red + Yellow



I made
orange
water!

Tama cdor, b slime pange xale!

5. Mix Yellow + Blue!



I Look, I made
Green water!

6. Mix Red + Blue!



I Look,
I made
purple!

7. Mix Red + Blue!



Wlat yellow and bluw!

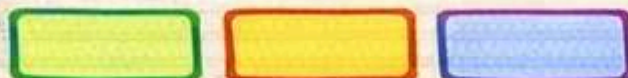
7. Mix Red + Blue!



What colors did you make?

What colors can you make by mixing colors?

New color + New color =



Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Unit 4



Floating Paper Clip



Experiment

What will make a paper clip float?



Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 1

Guess and Talk

Learn and **predict**. What do you think will happen?

Materials:



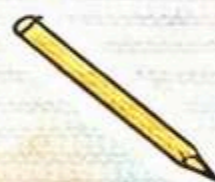
water



paper clip



tissue



toothpick



coin

What will happen?

Let's make a guess first!



Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 2

Test the Experiment



Watch the video and try it yourself
Check the answers below!



What do you see?

Can a paper clip float in water?

- ☐ The paper clip sank
- ☐ The paper clip floated
- ☐ The water stayed the same.



What helps it float?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 3

Let's Experiment!



Try it with Momo! Let's make a paper clip float!

Materials:



water



paper clip



tissue



toothpick



coin

1. Try dropping the paper clip in the water: Did it float?



2. Now, test the materials one-by-one:

A Try to float the paper clip with a **tissue**



B Try to make it float with a toothpick

C Add a pinch of salt to the water



3. Use a tissue to carefully lower the paper clip onto the water.

4. Step 1. Try dropping the paper clip in the water: Did it float?

A



B Try to float the paper clip with a tissue



Hooray!

What worked best?

Write your conclusion:

Unit 4

Floating Paper Clip

Experiment

1. Try dropping the paper clip in the water. Did it



2. Now, test the materials one-by-one:



A. Try to float the paper clip with a tissue



B. Try to make it float with a toothpick



3. Use a tissue to carefully lower the paper clip onto the water.



Did it work?

The paper clip is floating!



What worked best?

Write your conclusion:

Unit 5

The Pepper and Soap

Germ Experiment

Experiment

What will soap do to pepper germs?
Let's find out!



Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 1

Guess and Talk

Learn and predict. What do you think will happen?

Materials:



water



pepper



soap

What will soap do?

Let's make a guess first!



What will the soap do to the pepper?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 2

Test the Experiment

Watch the video and try it yourself
Check the answers below!

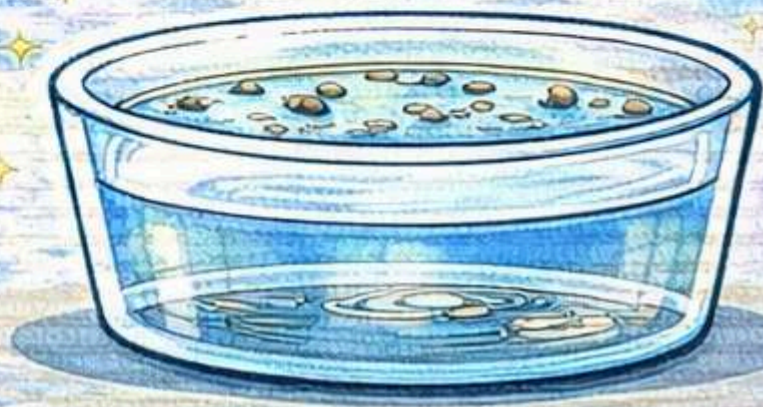


What do you see?

- ☐ The pepper scattered
- ☐ The pepper sank,
- ☐ The water stayed the same.

What happens when soap touches pepper?

What did it do to the germy pepper?



Activity 3

Draw the Experiment



Let's show what happened when soap touched the pepper.



Explain what happened:

Draw and write what you learned!

What happened? _____

Activity 4

Discuss the Experiment



Let's share our **ideas**! What did you learn when soap touched the pepper?

I have an idea!



Discuss these questions together:

1. What surprised you?
2. How did the pepper act like germs?
3. How does soap help get rid of germs?

Share your own ideas!

What else can soap teach us?

Unit 6

Fizzy Color Art

Experiment

Can we make baking soda and vinegar
fizz up with colors?

What did you
see and hear?

Write your conclusion:

1. _____
2. _____
3. _____

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 1

Learning and Predicting



What will happen? Let's find out!
Here's a hint:



Materials:



Baking Soda + Vinegar = Food coloring

What do you think will happen when we mix them?

Baking Soda



Vinegar

When you mix baking soda and vinegar, you get:

1. _____
2. _____
3. _____

The bubbles will...

What will it do?



Write your prediction:

1. _____
2. _____

Activity 2

Make Fizzy Color Art

Let's create fizzy color art!
Follow these steps:

Materials:

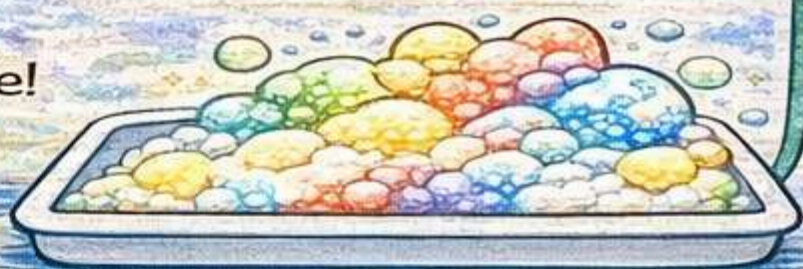


1. Fill the tray or plate with baking soda.
2. Add drops of food coloring over the baking soda.
3. Pour vinegar slowly onto the baking soda. Watch it fizz and bubble!
4. Enjoy the fizzy, colorful foam!



Watch a video of the experiment:

(Write the video link here)



Describe what happened:



What colors do you see?

Activity 3

Observe and Describe



What do you see and hear? Use your senses to describe the fizzy color art!

It's bubbling!

Wow! It's fizzy and colorful!

I hear fizzing sounds!



Describe what happened:

Write at least three sentences to describe the experiment:

1. _____
2. _____
3. _____

Activity 4

Draw and Conclude

What did you learn? Let's draw it!
Show your results and write your conclusion.



Write your conclusion:

1. _____
2. _____
3. _____

What colors do you see? 



Unit 7

Foamy Monster Cup

★ Experiment ★

Can we make a monster cup bubble with foam?



Materials:



Baking Soda



Vinegar



Food Coloring



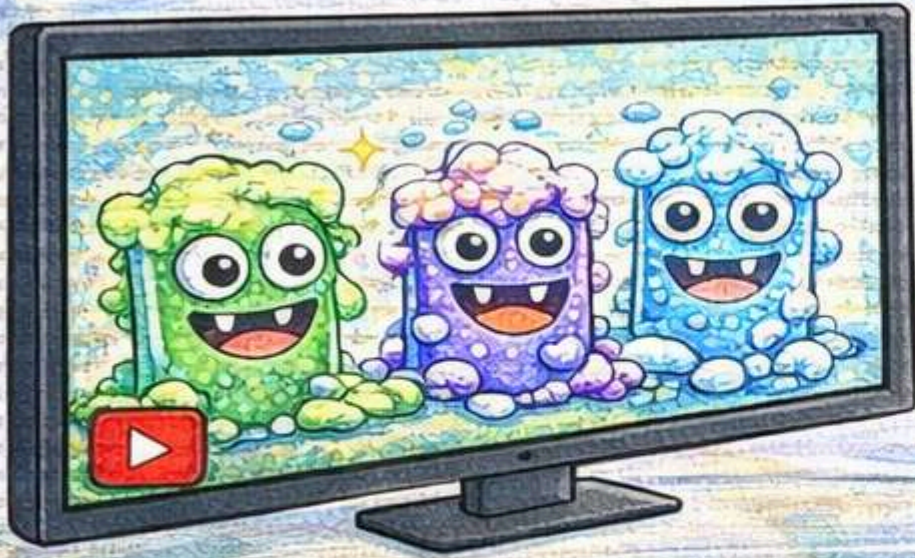
Dish Soap

Activity 1



Learning and Predicting

What will happen? Let's find out!
Here's a hint:



What made the foamy monster cup bubble with foam?



Baking Soda.

What made the foamy monster cup bubble with foam?

1. _____
2. _____
3. _____

It made lots of...

I see foamy...

Look at those bubbles!

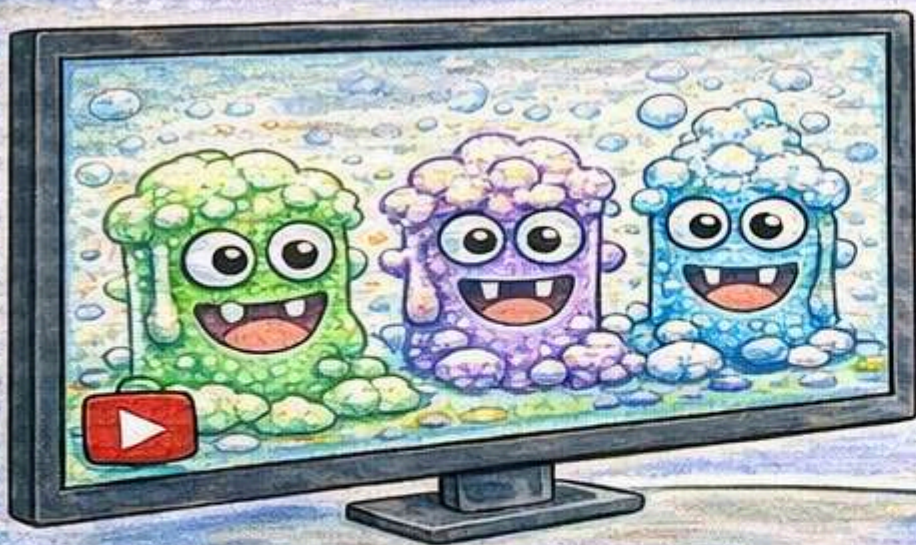


Activity 2

Observing and Describing



What do you see and hear? Use your senses to describe the fizzy monster cup!



It's bubbling!

I hear fizzing sounds!



Describe what happened:

1. _____
2. _____
3. _____



It's bubbling!

Wow! It's fizzy and colorful!!

It overflowed with foam!

1. _____
2. _____
3. _____

Activity 3

Draw and Conclude

Complete the sentences about what you learned:



When we mixed baking soda, vinegar, and dish soap, it made _____ to _____

The foamy monster cups: _____ and _____

I learned that mixing baking soda, vinegar, and dish soap, causes a _____

foamy

bubbles

busy

overflowed

fizzing

The foamy monster.
foams _____

and

- it fmr illing!



Draw your conclusion:

1. _____
2. _____
3. _____

Unit 8

Magic Milk Explosion

Why do the colors run away?



Materials:



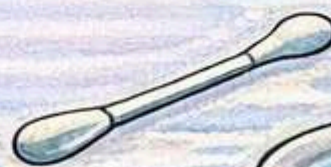
Milk



Food coloring



Dish soap



Cotton swab



Plate



Watch the experiment video:

(Teacher will add link here)

Activity 1

Watch and Talk

Let's watch the experiment!

Let's Talk About It!

1. What did you see happen in the experiment?

Clue. Think about the **milk** and the colors.

I saw _____

2. How did you feel when you saw the colors move?

I felt _____

3. Why do you think the colors spread when we added the dish soap?

I think the colors spread because _____



Draw what you saw!

Activity 2

Experiment & Observe



Let's watch the experiment!

Vocabulary:

Colors

Swirls

Move

Soap

Milk

Observe:

1. I saw...



- one large, cloudy circle
- blue and yellow starting to swirl
- the colors rushing from the soap
- the colors move away

Step Which?	Which?	What colors did you see?	What happened?
We added the colors			
We added the soap			

I saw...

● one large,
cloudy circle

● the colors rushing
from the soap



Draw what you saw!

Activity 3

Draw and Conclude

Complete the sentences about what you learned:

Vocabulary:

1. When we added food coloring to the milk, it made a

2. The milk had

When we touched it with dish soap, the colors and

3. I learned that dish soap breaks the
of the milk and makes the colors

milk

food coloring

dish soap

surface tension

Milk

I saw...

When we touched it with dish soap.



Draw your conclusion:

1. _____
2. _____
3. _____

Activity 4

Think Like a Scientist



Why Did It Happen?

1. Why did the colors run away?

I think it happened because _____

Change One Thing:

If we change ONE thing, what will happen?

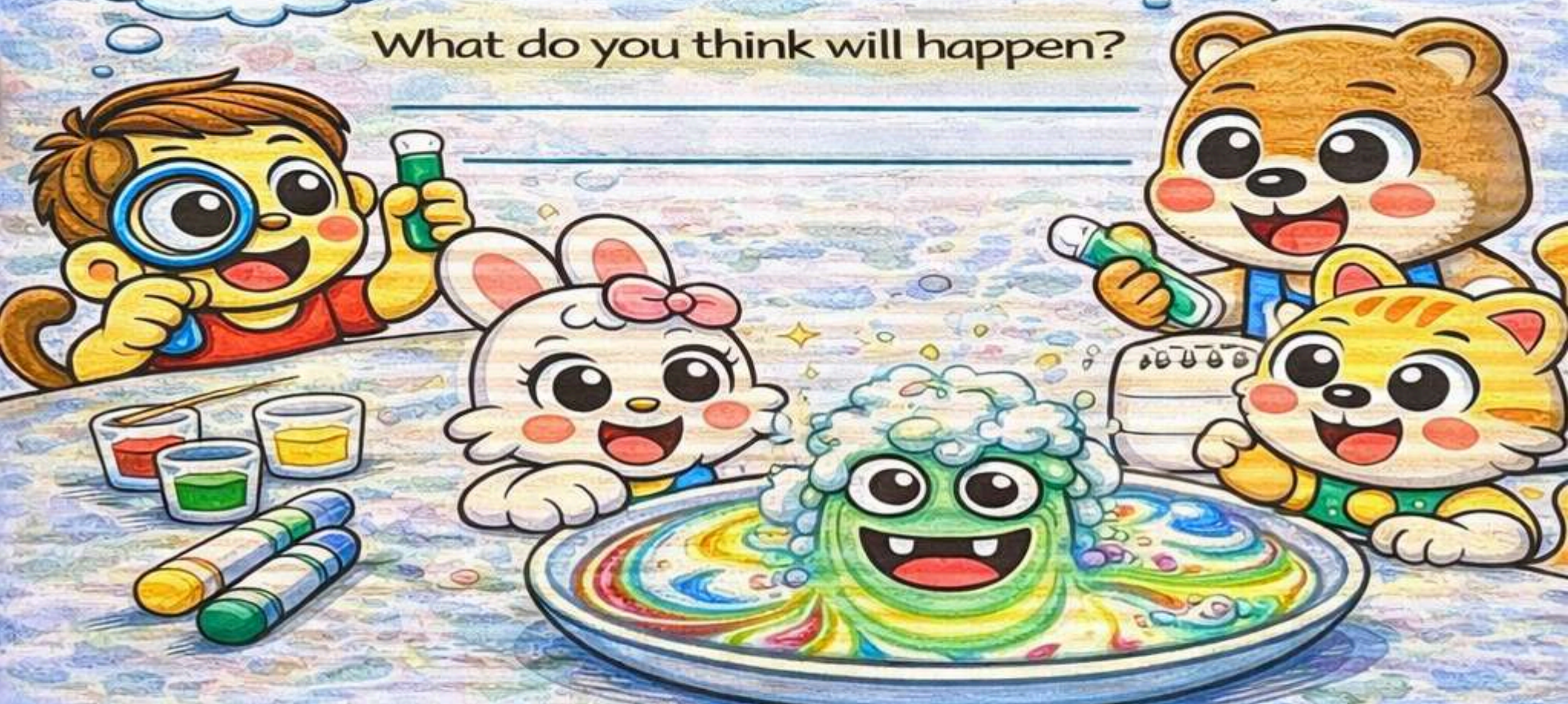
Circle one:

- ☐ whole milk
- ☐ half and half
- ☐ low-fat milk
- ☐ rinse the Q-tip

Why did it move?

What if we use half and half?

What do you think will happen?



Challenge Question:

1. Why did the dish soap make the colors move?
2. _____
3. It made the colors move because _____

Unit 9

Balloon Blow-Up

How can we blow up a balloon without using our breath?

Why Did It Happen?

1. Why did the balloon blow up?

I think it happened because _____

Change One Thing:

If we change one thing, what will happen?

- ☐ more baking soda
- ☐ more vinegar
- ☐ less baking soda
- ☐ less vinegar

It's getting bigger!

The balloon puffed up!



Baking soda Vinegar Plastic bottle Funnel Spoon

Watch the experiment video:

(Teacher will add link here)



Activity 1

Hypothesis & Predict



How can we make your balloon without using our breath?

Why Did It Happen?

1. Why did the balloon blow up?

I think it happened because _____

Change One Thing:

If we change one thing, what will happen?

- ☐ more baking soda ☐ less vinegar
☐ less baking soda

Wow! it's inflating!

It's getting bigger!



Baking soda Vinegar

Plastic bottle

Funnel

Spoon

My Hypothesis:

I think...

Predict what will happen when we mix the baking soda and vinegar in the bottle!

Activity 2

Test the Hypothesis



Follow the steps below to blow up a balloon without using our breath!

Why Did It Happen:

1. Fill the plastic bottle with 1/2 cup of vinegar using the funnel. ☐

I think it happened because _____

Change One Thing:

2. Use the spoon to put 2 teaspoons of baking soda into the balloon. ☐

(Stretch the balloon, first!)

It's getting bigger!

Wow! It's inflating!



Plastic bottle Funnel.

Spoon

Step 5:

I think...

Record what happened: _____

Remember! Always wear safety goggles and follow the directions carefully!

Activity 3

Observe and Conclude

Follow the steps below to what you observed:



For Higher Level:

1. Describe what you observed: ☐
2. What created the bubbles and caused the balloon to blow up? ☐
3. What did you learn from this experiment? ☐

For Higher Level:

1. Describe what you observed: ☐
2. What created the bubbles and caused the balloon to blow up? ☒
3. What did you learn from this experiment? ☐



For Lower Level:

Great observations!

For Lower Level:

1. Did the balloon puff up? ☒

- ☒ Yes
☐ No



Pick the words that describe the reaction:

- ☐ Bubbly ☐ Colorful ☐ Boring

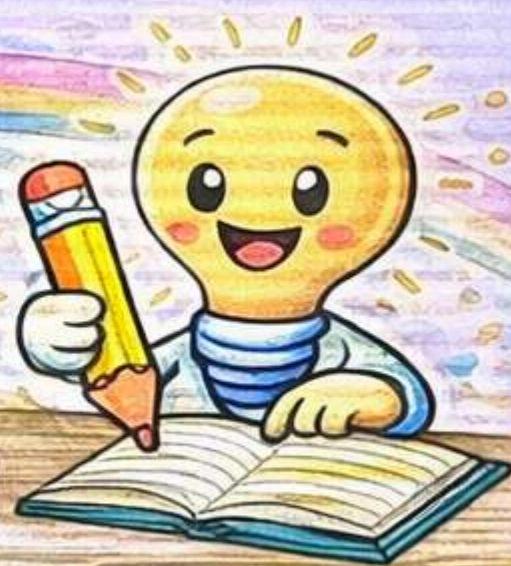
4. Draw what you saw:

Tip: Draw your observations if you have trouble writing them!



Activity 4

Match the Descriptions



Draw a line to match each experiment part to its description!



We put it in the bottle first

We put it in the balloon

It captured and held the gas.

We added the baking soda through this.



Great observationg

Unit 10

Mini Volcano in a Cup

How can we make a bubbling mini volcano in a cup?

Materials:



Baking soda



Dish soap



Dish soap



Food coloring (red)



Warm water



Plastic cup



Spoon



Wow!

Cool!

Wow!

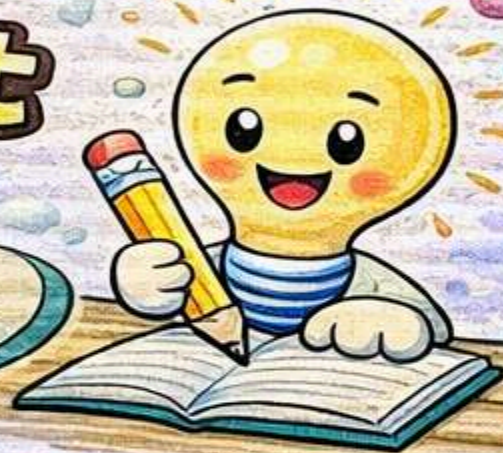
It's erupting!

Cool!

Activity 1

Hypothesis & Predict

What do you think will happen when we mix baking soda and vinegar in the cup?



Materials:



Baking soda



Dish soap



Dish soap



Food coloring (red)



Warm water



Plastic cup



Spoon

Blank space for writing a hypothesis or prediction.

Blank space for writing a hypothesis or prediction.

Blank space for writing a hypothesis or prediction.

I think it will...

Cool!



Wow!

It's erupting!

Cool!



Tip: Draw your observations if you have trouble writing them!

Activity 2

Watch the Experiment



Let's watch the "Mini Volcano in a Cup" experiment.



Let's watch the "Mini Volcano in a Cup" experiment.



(Teacher will add video link here)

1. Describe what happened:

2. What did you see, hear, and smell?

3. Draw what you observed:

Wow!

That was awesome!

Cool!



Tip: Draw your observations if you have trouble writing them!

Activity 3

Observe & Conclude



Answer the questions based on what you observed.
Write or draw your answers!

★ For Higher Level: ★

1. Describe what happened:

2. Why did the "lava" bubble up?

3. What did you learn from this experiment?

★ For Lower Level: ★

1. Describe what happened:

★ For Lower Level: ★

2. What happened to the cup?

☒ It bubbled over ☐ It stayed the same.

3. Pick the words that describe the reaction:

☒ Foamy ☐ Red. ☐ Loud

3. Draw what you observed:

Draw your
observation!

Cool!

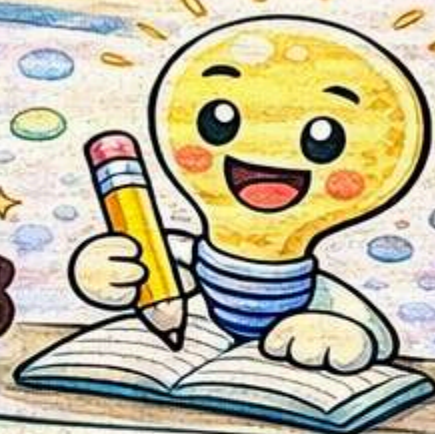
Wow!



Tip: Draw your observations if you have trouble writing them!

Activity 4

Match the Descriptions



Draw a line to match each experiment part to its description!

For Higher Level:



Baking soda.



Dish soap



Food coloring



Plastic cup



We put it in the cup first.

It trapped the gas and made it extra foamy.

It created the bubbly, red "lava."

We added the baking soda through this.

★ For Lower Level: ★

1. Describe what happened:

3. What did you learn from this

★ For Lower Level: ★

2. What happened to the cup?

☒ It bubbled over ☐ It stayed the same.

3. Draw your observation.

Wow!

That was awesome!

Cool!

Tip: Draw your observations if you have trouble writing them!

Unit 11

Elephant Toothpaste

How can we make a giant foam explosion?

Wow!

It's growing!

Look at the foam!

It's growing!

Activity 1

Prediction



What do you think will happen when the ingredients mix?

★ For Low Level: ★

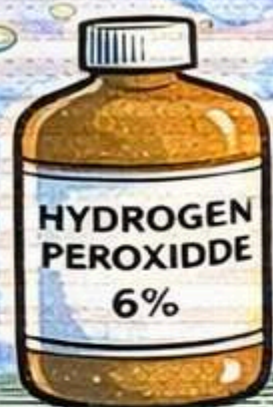
- ☐ The foam will grow
- ☐ Nothing will happen
- ☐ It will change color.

★ For Higher Level: ★

Write your prediction:

I think the foam will _____

because. _____



Wow!

Look at the foam!

So bubbly!



Unit 11

Elephant Toothpaste

Activity 2: Watch the Experiment

Watch the experiment video!

(Teacher will add video link here)

1. What happened when the ingredients mixed?

2. What did you see?

☐ bubbles

☐ foam

☐ color

3. Draw what you observed:

Wow!

Activity 3

Observe and Explain



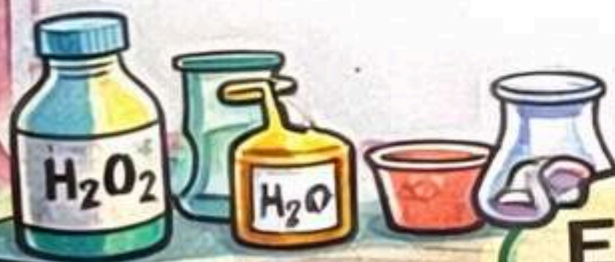
★For Higher Level:★

1. Why did the foam grow?

2. What gas was created?



3. Draw what you observed:



Exciting!



★For Lower Level:★

1. What happened?

- ☐ It made foam
- ☐ Nothing happened

2. Pick the words that describe the reaction:

- ☐ bubbly ☐ foamy
- ☐ color ☐ exciting



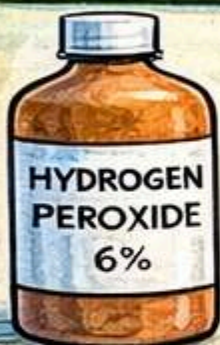
Activity 4

Match the Materials



Match the item to what it does.

For Higher Level:



- Hydrogen Peroxide 6%



- YEAST



- Dish soap



- Food coloring



A. makes bubbles grow

B. helps trap foam

C. gives color

D. starts the reaction

E. holds the experiment

I Can do it!

I can do it!

I know this one!



Tip: Draw your observations if you have trouble writing them!

Unit 12

Fizzing Ice Cubes

What will happen when vinegar touches icy baking soda?

Wow!



They're fizzing!



It's bubbling!



It's bubbling!

Sizzling and
fizzing!



Activity 1

Prediction



What do you think will happen when the ingredients mix?

★For Low Level★

- ☐ The ice cubes will fizz
- ☐ Nothing will happen
- ☐ They'll stay frozen

★For Higher Level★

Write your prediction:

I think the ice cubes will

because

Hmm...



It's bubbling!

Sizzling and
fizzing!



Activity 2

Watch the Experiment



Watch the experiment video



(Teacher will add video link here)

1. What 'd did you see?

☐ bubbles

☐ fizzing

☐ color

2. What did you see?

☐ bubbles

☐ fizzing

☐ color

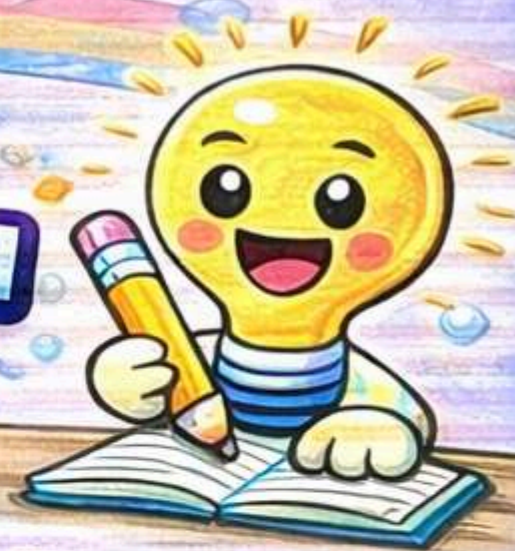


3. Draw what you observed:



Activity 3

Observe and Explain



★For Higher Level★

1. Why did the ice cubes fizz?

2. What gas was created?



★For Lower Level★

Write your prediction:

I think the ice cubes will

because



1. What happened?

- ☐ The ice cubes fizzed
- ☐ Nothing happened.

2. What did you see?

- ☐ bubbles
- ☐ fizzing
- ☐ colorful.



3. Draw what you observed:

Wow!

Fizzing and bubbling!



Activity 4

Match the Materials



Match the item to what it does.



A. makes it cold



B. helps trap fizz

C. gives color



D. starts the reaction:

E. holds the experiment



3. Draw what you observed:



Unit 13

Make Rain in a Jar



Can you make rain happen inside a jar?

What you need:



A clear
jar



Warm
water



Shaving
cream



Blue food
coloring



Ice
cubes

Let's Do the Experiment!

1 Fill the jar
with warm
water.



2 Add
shaving
cream on top.



3 Add a few drops
of blue food coloring.



4 Gently place
ice cubes on top.



What do you think will happen?



Activity 1

Prediction



What do you think will happen when the ice cubes cool the jar?

★For Low Level:★

- ☐ It will rain
- ☐ Nothing will happen
- ☐ Clouds will form

★For Higher Level:★

Write your prediction:

I think it will _____

because _____

Hmm..

Hmm..



What do you think will happen?

Activity 2

Watch the Experiment



(Teacher will add video link here)

1. Watch the experiment video

2. What did you see?

- ☐ rain
- ☐ clouds
- ☐ warm water

- 1** Rain
- ☐ clouds
- ☐ warm water



3. Draw what you observed:

Hmm...



Activity 3

Observe and Explain



 thowdied rain tnside the jar?

★For Higher Level:★

1 How did the ice cubes make the jar rain?

★For Higher Level:★

What did the food coloring show?

2 What did the food coloring show?



2 What did you learn from this experiment?

1 What happened?

- ☒ It rained inside the jar
- ☐ Nothing happened

3. Draw the rain inside the jar



Wow!

The jar rained!



Activity 4

Match the Materials



Match the item to what it does

★ For Higher Level: ★

A Warm water



B Shaving cream



D Ice cubes

E Blue food coloring

★ For Higher Level: ★

1 makes the jar rain

2 cools the jar

3 fills the jar

4 colors the rain

5 holds the shaving cream

4 Draw match them!



I know this one!

I can match them!



Unit 14

Instant Ice Magic



Can you turn water into ice instantly?

What you need:

A Purified water



4 Plastic bottle

5 A plastic bottle

6 Ice cubes

5 A freezer

Wow!

Cool!

Amazing!



Activity 1

Prediction



What do you think will happen when you supercool the purified water in the bottle or cup?



★ For Low Level: ★

- ☐ It will turn into ice
- ☐ Nothing will happen
- ☐ The bottle will freeze
- ☐ Salt

★ For Higher Level: ★

Write your prediction:

I think it will _____

because. _____

Hmm...



Hmm...



Activity 2

Watch the Experiment

Watch the experiment video



(Teacher will add video link here)

1 What you needed:

- ☐ It will turn into ice
- ☐ Nothing will happen
- ☐ The bottle will freeze

★ For Low Level: ★

- ☐ It will turn into ice
- ☐ Nothing will happen



2 What did you see?

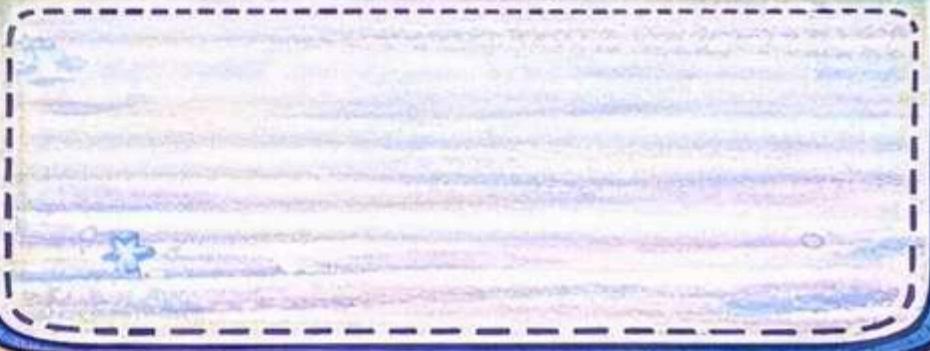
- ☐ ice
- ☐ frost
- ☐ bubbles

Hmm...

Hmm...



Draw what the bottle looked like:



Activity 3

Observing Results



What did you observe when the bottle was supercooled?

★ For Higher Level: ★

Write your observations:

★ For Lower Level: ★

☒ I saw it turn into ice

☐ It stayed liquid

My prediction was...

Before: ↓



After: ↓



Wow!

It turned into ice!

Amazing!



Activity 4

Explain the Results



Why did the purified water turn into ice?

★ Let's learn about supercooling! ★

Normally, water freezes at 0°C (32°F).

But if you cool purified water very slowly, you can make it **supercooled**. When supercooled water is disturbed or poured onto ice, it suddenly turns into ice crystals!

★ For Lower Level: ★

☒ I saw it turn into ice

☐ It stayed liquid

My prediction was...

Explain!

The water turned into ice because ...

I know the reason why!



Let me explain it!



Unit 15

Exploding Lunch Bag

EXPERIMENT



Can you make a lunch bag pop?

★ What you need: ★



Baking soda



Itt elast $1\frac{1}{4}$ cup
of vinegar



Bag



Plastic bog

Wow!



Cool!



Amazing!



Cool!



Explain!

The water tuned into ice..

Activity 1

Let's make a lunch bag pop!



What you need:

★ What you need: ★



Baking soda: Vinegar

★ ● least
1/4 cup

Bag

Napkin

1 Add 1/4 cup of vinegar into the bag.



2 Put 2 tablespoons of Baking soda onto the napkin



3 Wrap up the baking soda in the napkin.



4 Hold the packet above the bag and quickly seal it shut!



Predict: What do you think will happen?

Activity 2

Watch the Experiment



Let's make a lunch bag pop!

★ What you need: ★



Baking soda



Vinegar (½ cup)

1 What did you see when the baking soda mixed with the vinegar?

2 What happened to the lunch bag?

3 Draw what you observed:

Wow!

Cool!

Exciting!



Predict: What do you think will happen?

Activity 3

Observing Results



What happened to the bag?

★What you need:★

Write your observations:

1 The bag burst open with a loud pop!



3 Wrap up the baking soda in the napkin.



2 May predicted the same.

Wow!

It popped!

Incredible!



Activity 4

Explain the Results



Why did the bag pop?

★ Let's learn about ★ chemical reactions! ★

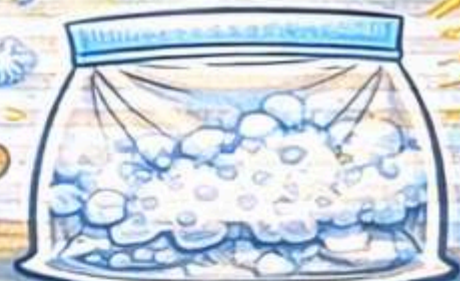
When baking soda and vinegar mix, they make a gas that expands, and that gas is **carbon dioxide!**

The bag pops when it can't hold all the expanding gas

1 Vinegar (acid)



CO₂ gas



Expanding gas!

2 What happened to the lunch bag?

Explain!

I know the reason why!

It popped!

Incredible!



Unit 16

Oobleck

MAGIC SOLID-LIQUID
EXPERIMENT



Is it a solid or a liquid?

★ What you need: ★



Cornstarch



Water



Bowl



Spoon

★ What you need: ★

- ☒ The bag burst open with a loud pop!
- ☐ The bag stayed the same _____



Wow!

Amazing!

Cool!



Activity 1

Let's Make Oobleck!



What you need:

★ What you need: ★



Cornstarch



Water
(at least ½ cup)



Bowl



Spoon

1 Measure 1 cup of water into the bowl!



2 Mix in 1½ cups of cornstarch.



4 Touch the Oobleck slowly, then try poking it really fast!

Wow!

Amazing!

Cool!



Activity 2

Let's Play with Oobleck!



Observe how this magic solid-liquid changes!

★ What can you do with Oobleck? ★

1 Squeeze it into a ball!



It'll turn runny!

2 Try punching it!



It'll get hard!

3 Lift it high up!



Watch it ooze down!

4 Let it drizzle through a sieve!



It'll drip down like rain!

Is it just a solid?

Nope! When you touch it hard, the Oobleck acts like a solid, but when you touch it gently, it drips like a liquid!

It's tricky!

So weird!

Wow!



Activity 3

Observing Results



Is Oobleck a solid, a liquid, or both?

★ Write down your observations ★

1 Oobleck acts like a bell when I touch it



It'll turn runny!

2 Try punching it!



It'll get hard!

So, is it a solid, or a liquid?

Nope! When you touch it hard, the Oobleck acts like a solid, but when you touch it gently, it drips like a liquid!

Cool!

Neat!

Amazing!



Activity 4

Explain the Results



Why can Oobleck act like both a solid and a liquid?

★ Let's learn about non-Newtonian fluids! ★

Oobleck is a **non-Newtonian** fluid. This means its state changes under pressure!

★ Low Pressure ★

Oobleck flows like a liquid.



It drips and oozes away slowly.

★ High Pressure ★

Oobleck acts like a solid.



The Oobleck feels hard and firm.

So, is it a solid, or a liquid?

It's **BOTH**! Oobleck can act like both a solid and a liquid. It's a non-Newtonian fluid.

Wow!

Interesting!

That's cool!



Unit 17

The Lava Lamp Experiment

Can we make colorful bubbles move like a lava lamp?
Let's find out!



Can we make colorful bubbles move like a lava lamp?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5



Activity 1



Guess and Talk



Learn and predict: What do you think will happen?

Materials:



bottle



water



oil



food coloring



tablet

What will happen?

Let's make a guess!

What will the tablet do?

What do you think will happen when the tablet goes into the bottle?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 2

Test the Experiment



Watch the video and try it yourself.
Check the answers below!



What do you see?

- ☐ The colored bubbles move up and down.
- ☐ The colors stay at the bottom.
- ☐ Nothing happens in the bottle.

What happens when the tablet touches the water?
What do the bubbles do inside the bottle?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 3

Draw the Experiment

Let's show what happened when the tablet made bubbles in the bottle!



Explain what happened:

Draw and write what you learned!

What happened?

Activity 4

DISCUSS the EXPERIMENT

Let's share our ideas!
What did you learn from the lava
lamp experiment?

Look at the bubbles
go up and down!

I have an
idea!

Why do the
colors move
like lava?



Discuss these questions together:

1. What surprised you?

2. Why do the colored bubbles move up and down?

3. Why do oil and water stay in separate layers?

Share your own ideas!

What else could you add to make your lava lamp different?

Unit 18

The Sugar Rainbow Jar Experiment

Experiment

Can we make a rainbow inside a jar using sugar and water? Let's find out!

Wow! A sugar rainbow!



What will we discover?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 1

Guess and Talk

Learn and predict: What do you think will happen?

Materials:



water



sugar



food coloring



clear jar



spoon

Will the colors mix together?

Let's make a guess first!



What will happen when we pour the colored sugar water into the jar?



Activity 2

Test the Experiment



Watch the video and try it yourself.
Check the answers below!



What do you see?

- ☐ The colors form rainbow layers.
- ☐ The colors mix together.
- ☐ The jar stays the same.



What happens when we pour the sugar water slowly into the jar? Why do the colors stay in layers?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 3

Draw the Experiment

Let's show what happened when we poured the sugar water into the jar.



Explain what happened:



Draw and write what you learned!

What happened?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 4

Discuss the Experiment

Let's share our ideas! What did you learn from the rainbow jar experiment?

Look at the rainbow layers!

I have an idea!

Why didn't the colors mix?



Discuss these questions together:

1. What surprised you?
2. Why did the colors stay in layers?
3. What made some colors stay above others?

Share your own ideas!

What other colors could you add to make your rainbow jar bigger?

What happened?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Unit 19

The Growing Crystals Experiment

Experiment

Can we grow shiny crystals using sugar or salt?
Let's find out!

Wow! Look at the crystals grow!



What will we discover?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 1

Guess and Talk



Learn and predict: What do you think will happen?

Materials:



water



sugar or salt



glass jar



spoon

Will crystals grow on the string?

Let's make a guess first!



What will happen when we leave the jar for a few days?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 2

Test the Experiment



Watch the video and try it yourself
Check the answers below!



What do you see?

- ☐ Crystals formed on the string
- ☐ Nothing happened
- ☐ The water disappeared

What happens after the
water sits for a long time?
Where do the crystals grow?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 3

Draw the Experiment

Let's show what happened when crystals started to grow.



Explain what happened:

Draw and write what you learned!

What happened? _____

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 4

Discuss the Experiment

Let's share our ideas! What did you learn from growing crystals?

I have an idea!



Discuss these questions together:

- 1 What surprised you?
- 2 How did the crystals grow?
- 3 Why did crystals form on the string?



Share your own ideas!

What else could you use to grow crystals?



Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Unit 20

The Balloon Bending Water Stream Experiment

Experiment

Can a balloon bend a stream of water without touching it? Let's find out!

Wow! The water is moving!



What will we discover?



Activity 1

Guess and Talk

Learn and predict: What do you think will happen?

Materials:



balloon



water



dry cloth

Will the balloon touch the water?

Let's make a guess first!



What will happen when the balloon goes near the water?

What will happen when the balloon goes near the water?

Activity 2

Test the Experiment

Watch the video and try it yourself

Check the answers below!



What do you see?

- ☐ The water bends toward the balloon
- ☐ The water stays straight
- ☐ Nothing happens



What happens when the balloon goes near the water?
Why does the water move?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5

Activity 3

Write and Draw

Let's show what happened!
Write and draw the results.

The balloon bent
the water!



Write about it:

Draw it:

Activity 4

Discuss the Experiment

Let's share our ideas! What did you learn when the balloon bent the water?

I have an idea!

Let's talk about it!

What happens when the balloon gets close to water?

- 1 What surprised you?
- 2 How did the balloon bend the water?
- 3 Why does the water move when the balloon is nearby?

What else could you try with the balloon?

Activity 1

Activity 2

Activity 3

Activity 4

Activity 5